

# Fostering Social Innovation For Active Ageing

*Tackling Later Life Loneliness*



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Dedicated to my mother.



# Abstract

Later life loneliness is a major social issue as it is increasing alongside an upward global population trend which predicts that nearly 22% of the world population will be aged 60 years or over by 2050. This ‘silver tsunami’, an unparalleled growth of the older population, will exert socioeconomic pressure globally on healthcare, housing demand, consumer segmentation, etc. This thesis suggests that currently there is an underrepresentation of radical innovation, and underutilisation of digital technologies in developing loneliness interventions for older adults, and argues that due to the unprecedented nature of this demographic surge, we cannot rely on conventional ways of thinking and doing things.

This thesis proposes a theoretical framework called Social Innovation for Active Ageing (SIFAA), as a way to develop more radical-digital loneliness interventions. SIFAA blends social innovation and activity theory of ageing and in doing so, expands current knowledge in both areas. To highlight the strengths and limitations of SIFAA, this thesis uses a triangulated approach, and discusses findings from a systematic literature review, interviews with experts, and an action research based trial. While the 196 loneliness interventions examined in the systematic literature review highlight the current gap in knowledge represented by a lack of radical-digital loneliness interventions, the interviews with 9 experts emphasise possible reasons for this gap. The action research based trial carried out during 16 weeks of ethnographic fieldwork on the other hand, offers practical insights into operationalising SIFAA to conceive and implement a radical-digital loneliness intervention for older adults. This thesis also highlights the vital role that digital technologies can play in facilitating the development and implementation of radical loneliness interventions.

By suggesting the hybridisation of social innovation and activity theory of ageing, this research argues that a contextual view be adapted to design suitable loneliness interventions for older adults, such that the ageing population becomes a part of the solution, and not just the problem. This thesis suggests that by using creative tools

and techniques, designers can either help develop new radical-digital loneliness interventions, or transform or scale existing interventions such that they represent radical innovation, and utilise digital technologies. It offers a framework utilising SIFAA that uses the tools and techniques developed during this study to deploy radical-digital loneliness interventions. The discussion herein is aimed at making a positive contribution to the field of developing, implementing, and evaluating non-pharmacological loneliness interventions for older adults.

# Declaration

This thesis is submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy. This thesis has not been submitted in support of an application for another degree at this or any other university. It is the result of my own work and does not contain any materials previously published or written by another person except where due reference is made in the text. Excerpts of this thesis have been published in the following conference manuscripts and academic publications.

All research activities for this study were carried out in full compliance with Lancaster University's ethics guidelines.

## Academic Publications

**SHARMA, D., CLUNE, S. J. & BLAIR, L. 2016.** Fostering social innovation for active ageing. The 20th Academic Design Management Conference: Inflection Point, Design Research Meets Design Practice. Massachusetts College of Art and Design, Boston: DMI: Design Management Institute.

**LINDLEY, J. & SHARMA, D. 2016.** Operationalising design fiction for ethical computing. ACM SIGCAS Computers and Society, 45, 79-83.

**SHARMA, D. 2015.** Social Innovation for Active Ageing (SIFAA). Dementia Futures, Lancaster, UK.

**SHARMA, D., BLAIR, L. & CLUNE, S. 2015.** Developing Radical-Digital Interventions to Tackle Loneliness Amongst the Elderly. 17th HCI International 2015, Los Angeles. Springer.

**SHARMA, D., BLAIR, L. & CLUNE, S. 2015.** Radicalising the designer: Combating age-related loneliness through radical-digital interventions. Cumulus: Virtuous Circle. Milan, Italy.

#### Other Activities

##### **Interview with *Elder Blog*:**

Dhruv Sharma: Mitigating Later Life Loneliness Through Radical Innovation & Digital Technologies.

**Date Published:** 24<sup>th</sup> August 2017

**URL:** <https://www.elder.org/feature/dhruv-sharma-mitigating-loneliness-in-later-life-through-radical-innovation-and-digital-technologies/>

##### **Guest Blog for *Campaign to End Loneliness*:**

Designing effective loneliness interventions for older adults.

**Date Published:** 17<sup>th</sup> November 2016

**URL:** <https://www.campaigntoendloneliness.org/blog/research-blog-designing-effective-loneliness-interventions-for-older-adults/>

##### **Guest Blog for *The Conversation*:**

How older people can use the internet to avoid loneliness.

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**URL:** <https://theconversation.com/how-older-people-can-use-the-internet-to-avoid-loneliness-46447>

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# Contents

<b>Abstract.....</b>	<b>III</b>
<b>Declaration.....</b>	<b>VII</b>
<b>Acknowledgements.....</b>	<b>IX</b>
<b>Contents .....</b>	<b>10</b>
<b>Table of Figures.....</b>	<b>14</b>
<b>List of Tables.....</b>	<b>16</b>
<b>Chapter 1. Introduction .....</b>	<b>17</b>
<b>1.1 Overview .....</b>	<b>19</b>
<b>1.2 Motivation.....</b>	<b>20</b>
1.2.1 Research Questions.....	22
<b>1.3 Research Methodology.....</b>	<b>23</b>
1.3.1 Research methods and contributions .....	25
<b>1.4 Structure .....</b>	<b>28</b>
<b>Chapter 2. The Silver Tsunami of Loneliness.....</b>	<b>31</b>
<b>2.1 Overview .....</b>	<b>33</b>
<b>2.2 Loneliness.....</b>	<b>34</b>
2.2.1 An introduction to the theories of loneliness.....	38
2.2.2 Loneliness theories based on internal factors. ....	39
2.2.3 Loneliness theories based on external factors.....	41
2.2.4 Loneliness theories based on a combination of internal and external factors .....	43
<b>2.3 Later Life Loneliness.....</b>	<b>45</b>
2.3.1 Chronological Progression of Psychosocial Theories of Ageing .....	48
2.3.2 Triggers of Loneliness in later years of life.....	57
2.3.3 Baby Boom: feeling the ripple effect of the age wave.....	61
<b>2.4 Measuring Loneliness.....</b>	<b>66</b>
2.4.1 The direct method .....	67
2.4.2 The indirect method .....	69
<b>2.5 Discussion.....</b>	<b>72</b>
<b>Chapter 3. Mapping the Research Space .....</b>	<b>75</b>

<b>3.1 Overview.....</b>	<b>77</b>
<b>3.2 Loneliness Interventions: Review and coding .....</b>	<b>77</b>
3.2.1 Innovation and design .....	79
3.2.2 Identifying the gap for further design research.....	82
3.2.3 Coding .....	85
3.2.4 Example Case Study: Good Gym.....	89
3.2.5 Further examples .....	92
3.2.6 Preliminary Results and Discussion.....	93
<b>3.3 Social Innovation for Active Ageing .....</b>	<b>95</b>
3.3.1 Extending Active Ageing.....	95
3.3.2 Fostering social innovation.....	97
<b>3.4 Understanding the Radical-Digital.....</b>	<b>100</b>
3.4.1 Radical vs. Incremental Innovation.....	100
3.4.2 Digital .....	104
<b>3.5 Discussion .....</b>	<b>110</b>
<b>Chapter 4. Methodology.....</b>	<b>113</b>
<b>4.1 Overview.....</b>	<b>115</b>
<b>4.2 Research Philosophy.....</b>	<b>117</b>
<b>4.3 Theory Development .....</b>	<b>118</b>
<b>4.4 Methodological Choice.....</b>	<b>119</b>
<b>4.5 Research Strategy .....</b>	<b>121</b>
4.5.1 What are the current approaches to addressing later life loneliness?.....	124
4.5.2 What are the strengths and limitations of using SIFAA in developing interventions aimed at reducing loneliness amongst older adults? .....	124
4.5.3 How do SIFAA-based interventions compare to other existing loneliness interventions?.....	124
4.5.4 What is the role of design in developing such interventions?.....	125
<b>4.6 Time Horizon.....</b>	<b>126</b>
<b>4.7 Techniques and Procedures.....</b>	<b>128</b>
4.7.1 Systematic Literature Review .....	128
4.7.2 Expert Interviews.....	141
4.7.3 Exploring SIFAA-based interventions and selection of the trial .....	145
<b>4.8 Ensuring Credibility .....</b>	<b>151</b>
4.8.1 Validity, Reliability and Generalisability .....	153

4.9 Summary .....	155
<b>Chapter 5. Results.....</b>	<b>159</b>
5.1 Overview .....	161
5.2 The SLR.....	162
5.2.1 Main Outcomes .....	162
5.2.2 Analysis.....	172
5.3 Expert Interviews .....	179
5.3.1 Results .....	180
5.3.2 Analysis.....	186
5.3.3 Discussion .....	193
5.4 The Action Research Based Trial .....	196
5.4.1 Action Taking (week 21 to 36).....	196
5.4.2 Making design choices based on ethnographic insights.....	201
5.4.3 Evaluating (Week 37 to 40).....	211
5.4.4 Specifying Learning.....	213
5.5 Identifying actionable insights .....	216
5.5.1 Conceptual insights.....	217
5.5.2 Methodological insights.....	225
5.6 Summary .....	228
<b>Chapter 6. Social Innovation For Active Ageing: Evaluation and Future Potential .....</b>	<b>231</b>
6.1 Overview .....	233
6.2 Developing radical-digital loneliness interventions using SIFAA.....	233
6.2.1 Upscaling or outscaling existing SIFAA-based interventions .....	234
6.2.2 Transforming existing interventions into SIFAA-based ones.....	235
6.2.3 Creating brand new SIFAA-based interventions.....	236
6.2.4 Limitations of SIFAA .....	240
6.3 The future use of SIFAA.....	242
6.3.1 Contextualisation.....	242
6.3.2 Holism.....	243
6.3.3 Collaboration.....	243
6.3.4 Communication .....	243
6.4 SIFAA in the sharing economy.....	244
6.5 Summary .....	247

<b>Chapter 7. Conclusion.....</b>	<b>249</b>
<b>7.1 Overview.....</b>	<b>251</b>
<b>7.2 Thesis Summary.....</b>	<b>251</b>
<b>7.3 Contributions .....</b>	<b>254</b>
7.3.1 Theoretical contributions.....	254
7.3.2 Practical Contributions.....	255
7.3.3 Social Contributions .....	256
<b>7.4 Reflection .....</b>	<b>256</b>
7.4.1 The current approaches to addressing later life loneliness.....	256
7.4.2 Using SIFAA in developing loneliness interventions for older adults .....	257
7.4.3 Comparing SIFAA-based interventions to others.....	258
7.4.4 The role of design in developing such interventions .....	259
<b>7.5 Limitations and future directions .....</b>	<b>260</b>
<b>7.6 Conclusion.....</b>	<b>262</b>
<b>References .....</b>	<b>263</b>
<b>Appendix.....</b>	<b>286</b>

# Table of Figures

Figure 1: The overall research process corresponding to Susman and Evered's (1978) action research model. ....	23
Figure 2: Discrepancy Model of Loneliness .....	39
Figure 3: Frequency of feeling lonely by age group (2009 - 10), England.....	46
Figure 4: Estimated and projected age structure of UK population, mid-2012 and mid-2037.....	62
Figure 5: Population estimates for England and Wales according to 2011 Census....	64
Figure 6: Key features of single-item scales .....	69
Figure 7: Key features of De Jong Gierveld scale.....	71
Figure 8: Grid to map loneliness interventions. ....	89
Figure 9: Visualising Good Gym. ....	92
Figure 10: Mapping all loneliness interventions onto a single grid.....	93
Figure 11: Replacing 'lost roles' of older adults through social innovation.....	98
Figure 12: Hill-climbing paradigm applied to incremental and radical innovation	103
Figure 13: The Five Aspects of 'Digital' .....	105
Figure 14: The Research Process 'Onion' by Saunders et al. (2016) .....	116
Figure 15: Susman and Evered's five stages of action research (1978) .....	122
Figure 16: Overall (action) research strategy for the study.....	125
Figure 17: The process for shortlisting eligible interventions .....	132
Figure 18: Visualising Eldershine intervention.....	140
Figure 19: Implementing the prototype .....	149
Figure 20: The action research based trial setting showing older adults learning how to use iPads.....	151
Figure 21: Visualisation showing all the interventions reviewed.....	164
Figure 22: A comparison of interventions found using the SLR versus grey literature. ....	177
Figure 23: A snapshot of interviewee profiles showing the sectors they represent and how the interviews were conducted.....	180

Figure 24: The themes emerging from expert interviews.....	194
Figure 25: The action research based trial in action .....	200
Figure 26: A 5-way earphone connector used in the study with three pairs of earphones connected to it. ....	204
Figure 27: Videocalling session number 3 in progress .....	207
Figure 28: The CSCW matrix.....	210
Figure 29: A participant in the UK, using the microphone to speak to a student during one of the sessions. ....	216
Figure 30: Transforming an existing loneliness intervention during the action research based trial.....	219
Figure 31: A representation of Nietzsche's 'Perspectivism'. ....	226
Figure 32: Using SIFAA to develop loneliness interventions .....	239

# List of Tables

Table 1: Twelve Definitions of Loneliness.....	37
Table 2: Schematic Overview of Psychological Theories of Ageing .....	50
Table 3: Key risk factors or triggers to loneliness.....	60
Table 4: Classification criteria and corresponding coding categories developed for the preliminary review of loneliness interventions.....	83
Table 5: Review of loneliness interventions.....	88
Table 6: Answering coding questions for Good Gym.....	91
Table 7: The choice of research methods to answer specific research questions ....	120
Table 8: Implementing the five stages of action research.....	123
Table 9: Keywords and search terms adapted from Cattán et al. (2005) .....	130
Table 10: Using the coding questions to determine the level of innovation for Eldershine. ....	138
Table 11: A snapshot of expert interview participants .....	141
Table 12: An example of the template used to log themes emerging from the semi-structured interviews.....	144
Table 13: The template to shortlist SIFAA based ideas .....	146
Table 14: Logging the shortlisted idea .....	147
Table 15: Correlation between digital scores and the level of innovation.....	174
Table 16: A summary of themes emerging from the expert interviews.....	185
Table 17: Contact summary form for the fourth videocalling session.....	199
Table 18: A summary of ethnographic insights informing design choices.....	202
Table 19: Seven roles of a designer in developing loneliness interventions.....	222
Table 20: Identifying whether <i>Writing Back Leeds</i> conforms to the tenets of SIFAA .....	235
Table 21: An example of using the template to create a brand new SIFAA-based intervention.....	237
Table 22: Characteristics of loneliness interventions .....	322

# Chapter 1. Introduction

*“Action expresses priorities”*

- (Mahatma Gandhi)





## 1.1 Overview

This thesis studies ways of mitigating loneliness experienced by an ageing population via radical innovation and digital technologies. Findings from this thesis are relevant to anyone interested in current global demographic trends that predict an unparalleled increase in the population of older adults in coming years. More specifically, this thesis offers valuable insights to stakeholders involved in designing, implementing, or examining interventions directed at older adults experiencing loneliness.

To make a valuable contribution to the area of designing loneliness interventions, this thesis adopts a pragmatic viewpoint and focusses on advancing the *thinking* as well as *doing* aspects of knowledge required to develop such interventions. This study's objective is to identify and present patterns in how we, as a society, currently attempt to mitigate later life loneliness. In doing so, this thesis proposes that interventions based on radical innovation are underrepresented, and that there is also an underutilisation of digital technologies in this area. It argues that to gather a holistic understanding of the problem space, which is crucial to problem solving endeavours, the solution space needs to improve its radical-digital portfolio. This thesis offers a propositional framework founded on the principles of social innovation and active ageing to address the lack of radical-digital loneliness interventions.

This introductory chapter to the thesis provides a general synopsis of the need to study loneliness interventions aimed at older adults, followed by the specific research questions that this study attempts to answer. It also offers a snapshot of the action research based approach that was chosen to operationalise the pragmatic philosophy of this research work. A glimpse of key contributions in advancing the knowledge of designing loneliness interventions for older adults is provided at the end, followed by a brief description of the overall structure of this document to guide the readers.

## 1.2 Motivation

As humans, our ability to project demographic data into future, allows us a privileged access to a vantage point, from where we can foresee the possible implications of changes to our global population figures. For instance, an analysis of recent demographic trends suggest that a significant reduction in infant and young-age mortality rates in low- and middle-income countries, along with a continued increase in the life expectancy of older adults in high-income countries, means that people are living longer, healthier lives as compared to the past (World Health Organization, 2015). As a result, it has been inferred that nearly 22% of the world population will be aged 60 years or over by 2050 (Rutherford, 2012). This imminent surge in the share of older adults in the overall population composition, is unparalleled in human history. This also means that the challenges that come with managing older adults are likely to multiply along with the increase in ageing population (Cacioppo and Patrick, 2008), but so are the opportunities (Dychtwald and Flower, 1989). However, our existing ways of ‘thinking and doing’, might not be sufficient, or even appropriate when it comes to dealing with this record population growth, or even making the most of the opportunities it might present due to a lack of precedent.

A combined interest in improving the overall health and wellbeing of older adults, and a willingness to regard challenging situations as opportunities for innovation, provided the stimulus for conceiving and conducting this study. To this pragmatic end, this thesis utilises the “projective, iterative, and reflexive” attitude to research that is common to design processes, as well as action research (Coghlan and Brydon-Miller, 2014 p. 246). Although throughout history, design was a process applied to physical objects, its focus on creative thinking and iterative prototyping has meant that it can serve as a powerful tool in designing interventions (Brown and Roger, 2015). This thesis sought to make a contribution to ‘design knowledge’ (Manzini, 2015), which can be used in developing loneliness interventions for older adults. The implementation of action research methodology adopted for this study therefore, sought inspiration from Herbert Simon’s definition of design. Simon

suggests that, “Everyone designs who devises courses of action aimed at changing existing situations into preferred ones” (1988 p. 67). Thus, this thesis maps the existing landscape of loneliness interventions developed for older adults, in order to design novel ways of addressing the problem.

This thesis is concerned with the psychosocial aspect of ageing process, and focusses on loneliness experienced by older adults. Although based in the UK, findings from this thesis can be useful to other societies experiencing similar demographic, as well as socioeconomic trends. As a society, we have been trying to tackle this seemingly impenetrable problem of loneliness experienced by older adults for decades (Sharma et al., 2016) and our ‘utter failure’ (Twigg and Martin, 2015 p. 252) in addressing it in the modern, *connected* world that we live in, calls for a review of our methods that we have deployed to mitigate loneliness experienced by older adults.

This thesis focusses on non-pharmacological interventions designed for mitigating loneliness, and is aimed at identifying patterns in how loneliness interventions for older adults are designed. This knowledge provides a platform to enable experimentation with innovative ways of developing such services. Therefore, this research deeply engages with existing theoretical advances made by previous scholars in this area, and empirically tests the ideas developed during this study. Apart from examining theories associated with loneliness and ageing, this thesis also presents a review of loneliness interventions, and the opinion of experts to identify the gaps in our existing knowledge around developing loneliness interventions for older adults. Upon identifying a gap worthy of further exploration in the form of an underrepresentation of radical-digital loneliness interventions (explained in detail in Chapter 1), this thesis suggests a theoretical framework called Social Innovation For Active Ageing (SIFAA) aimed at developing more radical-digital loneliness interventions for older adults.

SIFAA, as a propositional framework is one of the main, and original contributions of this research. Through a comprehensive examination of literature in the area, this thesis suggests that Activity Theory of Ageing and Social Innovation are complementary notions that can be combined in a symbiotic way, and that the resulting framework i.e. SIFAA, can help intervention designers develop novel ways

of mitigating later-life loneliness. In a nutshell, SIFAA proposes involving older adults in activities where they can act as providers, rather than being solely recipients of help, support, or care to someone else who could benefit from this mutually beneficial arrangement. This thesis suggests that SIFAA could potentially be used in designing loneliness interventions for older adults. Understanding the possible strengths and limitations of SIFAA in designing such interventions represents the overall aims and objectives of this study, presented below in the form of specific research questions that guide this thesis.

### **1.2.1 Research Questions**

This thesis *aims* to answer the following specific research question overall:

*How can a hybridisation of Activity Theory of Ageing and Social Innovation i.e. SIFAA (Social Innovation for Active Ageing) be used to develop loneliness interventions for older adults?*

The following subsidiary questions were developed to help answer the overall research question<sup>1</sup>.

1. What are the current approaches to addressing later life loneliness?
2. What are the strengths and limitations of using SIFAA in developing interventions aimed at reducing loneliness amongst older adults?
3. How do Social Innovation For Active Ageing-based interventions compare to other existing loneliness interventions?
4. What is the role of design in developing such interventions?

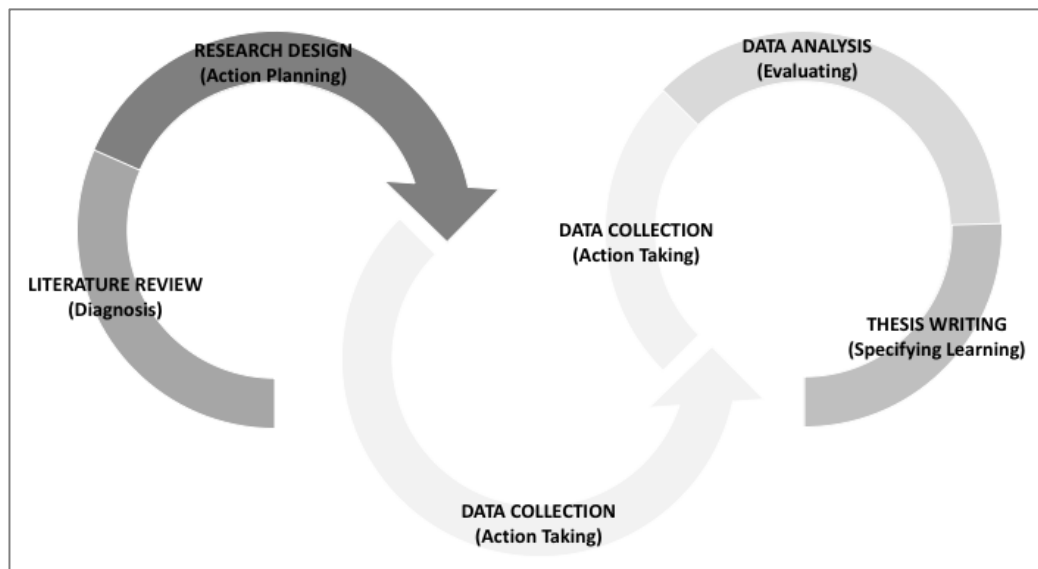
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<sup>1</sup> The overall research question represents the *aim* of this thesis and the subsidiary questions guide the objectives.

## 1.3 Research Methodology

Due to its interest in ‘social action’ (Lewin, 1946), the overall structure of this study followed an action research approach, with sequential phases of this investigation corresponding to Susman and Evered’s (1978) action research model (Figure 1). The chosen methodology for this research also borrowed from action anthropology (Tax, 1975) in order to ensure that ‘people’ were always central to the whole study. In other words, this study utilised design thinking in moving from “inspiration” (the problem or opportunity that motivates the search for solutions) to “implementation” (the path that leads from the project room to the context where the solution is deployed) via “ideation” (the process of generating, developing, and testing ideas) (Brown and Katz, 2011).

This study’s aspiration to affect change in the *existing* ways in which loneliness interventions for older adults are designed, resulted in a strong focus on advancing theoretical as well as practical knowledge in this area. Therefore, backed by a pragmatic approach, an amalgamation of action research and action anthropology helped in answering specific research questions.



**Figure 1: The overall research process corresponding to Susman and Evered's (1978) action research model. The Data Collection or Action Taking phase represents the longest phase of the study as can be seen above.**

The inherent similarities between action research and design processes allowed for Susman and Evered's action research model (1978) to be used as a guiding principle for designing, and experimenting with a *preferred* form of loneliness intervention – one based on SIFAA. The ability of design tools and techniques that were once deemed useful for designing products, to be adapted and extended to other contexts, has given rise to a new discipline: design thinking. This approach focusses on iterative prototype development and evaluation to address a given problem (Brown and Roger, 2015) – an approach commonly advocated by action researchers. Susman and Evered view action research as an iterative process with five phases: *diagnosing, action planning, action taking, evaluating, and specifying learning*. In their view all five phases of action research are “necessary for a comprehensive definition of action research” (1978 p. 588) although the actual number of steps undertaken may vary depending on specific research requirements. This study utilised all five phases of action research suggested by Susman and Evered (1978), to plan and carry out research activities in a sequential manner as follows:

- **Diagnosing (Identifying or defining a problem):** Reviewing existing literature to identify a gap in knowledge in terms of designing loneliness interventions for older adults.
- **Action Planning (Considering alternate courses of action for solving a problem):** Conceptualising SIFAA as a strategy to develop novel interventions, and planning specific research questions, as well as techniques to be deployed during the study.
- **Action Taking (Selecting a course of action):** Gathering data to address the specific research questions through a systematic literature review<sup>2</sup>, expert interviews, and an action research based trial.

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<sup>2</sup> The systematic literature review served as a conduit between action planning and action taking stages. The examination of loneliness interventions helped in identifying patterns in loneliness intervention design, and grounded the decision to focus on radical-digital loneliness interventions. It also symbolised the first action that was taken to address the specific research questions.

- **Evaluating (Studying the consequences of an action):** Interpreting and analysing data collected from all three research methods used during the study.
- **Specifying Learning (Identifying general findings):** Synthesising the learnings from this exercise in the form of a comprehensive document in a sharable format, i.e. thesis writing.

### 1.3.1 Research methods

This thesis attempts to advance the contemporary *thought* as well as *action* in developing loneliness interventions for older adults. It demonstrates its ‘originality’ (Phillips and Pugh, 2010) by being cross-disciplinary<sup>3</sup> (seeking inspiration from action research, anthropology, and design), and by using innovative methodologies such as the bespoke coding system developed to analyse loneliness interventions. Therefore, this thesis aims to make both conceptual as well as methodological contributions to the field of designing loneliness interventions for older adults. Research methods for data collection and analysis for this study were chosen keeping in mind the subsidiary research questions. A preliminary examination of literature that involved looking at various patterns in loneliness intervention design, led to the development of SIFAA, and therefore guided the specific research questions for this study. In addition to offering answers to the research questions, this study also resulted in the development of innovative methods of synthesising, analysing, and designing loneliness interventions for older adults. These have been discussed in more detail in Section 5.5 and Section 6.2. How addressing each of the research questions contributed to the overall knowledge in the area has been discussed below:

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<sup>3</sup> Phillips and Pugh suggest a PhD degree is awarded for ‘an original contribution to knowledge’ and one of the many ways in which ‘originality’ can be displayed is by “being cross-disciplinary and using many different methodologies” (2010, p. 62).



*What are the current approaches to addressing later life loneliness?*

A comprehensive systematic literature review (SLR) was conducted to identify interventions that addressed loneliness experienced by an ageing demographic (Section 4.7.1 and Section 5.2). The SLR initially examined interventions published in peer-reviewed journals published over a decade (between 2005 and 2015). To lend a contemporary perspective to the SLR, interventions found via *Twitter* were also included in the study, alongside the ones obtained from other sources such as attending conferences, online articles, referrals, etc. Keeping a clear record of the steps taken to identify, and analyse loneliness interventions in a variety of sources, allowed for the extension of a systematic approach, to the examination of interventions found using unsystematic methods such as attending conferences. The data obtained from this research activity helped in identifying a range of different types of loneliness interventions, and the various patterns in how they operated.

*What are the strengths and limitations of using SIFAA in developing interventions aimed at reducing loneliness amongst older adults?*

Upon identifying an emerging pattern in terms of utilising social innovation and active ageing in the development of novel interventions, and suggesting SIFAA as a propositional framework for designing radically different loneliness interventions (Section 3.3), an action research based trial was carried out which involved conceiving and implementing a SIFAA-based loneliness intervention (Section 4.7.3 and Section 5.4). In this trial, older adults in the UK, who attended weekly lunches organised by a charity that tackles social isolation and loneliness, were paired with young students in India, who were looking to improve their English-speaking skills via videoconferencing. An action research approach helped in planning, implementing, and evaluating this intervention such that SIFAA's suitability in designing loneliness interventions for older adults was put to test. This research activity produced insights that can inform the design of loneliness interventions in future.

*How do Social Innovation For Active Ageing-based interventions compare to other existing loneliness interventions?*

The availability of a comprehensive list of loneliness interventions identified and categorised during the SLR (Section 5.2), permitted a comparison of those based on SIFAA, with those that were not. For instance, in addition to the action research based trial developed during this study, several interventions examined in the SLR exhibited traits of SIFAA. Additionally, the trial also offered insights into various aspects of implementing SIFAA. To enrich this comparison further, semi-structured interviews were conducted with experts in the area, i.e. healthcare professionals, academic researchers, service providers, etc. The expert interviews were also helpful in highlighting potential barriers that impeded the proliferation of SIFAA-based, or radical (and digital) loneliness interventions.

*What is the role of design in developing such interventions?*

An action research based trial (Section 5.4), combined with a deep engagement with literature offered an insight into the role that design, and design thinking can play in this area (Section 5.5). For instance, designers' ability to creatively recombine existing knowledge and resources can allow for problem-solving both on a micro as well as macro level when designing a loneliness intervention. While the action research based trial offered practical insights into how such interventions can be *designed*, the examination of literature provided an understanding of various roles that designers can play in planning, executing, and evaluating SIFAA-based loneliness interventions in future.

## **1.4 Contributions**

In the process of answering research questions conceived for this study, this thesis makes valuable conceptual and methodological contributions to the area of developing later-life loneliness interventions. These have been briefly discussed below:

### **1.4.1 Theoretical contributions**

SIFAA is one of the main and original theoretical contributions of this thesis. Through an examination of literature in the area, this thesis suggests that there is currently an underrepresentation of radical innovation, and an underutilisation of digital technologies in developing loneliness interventions for older adults. To address this gap in knowledge, this thesis proposes to combine Social Innovation and Activity Theory of Ageing, to develop a framework called SIFAA, and in doing so, advances current knowledge in both these areas.

This thesis also contributes to a nuanced understanding of loneliness interventions developed for older adults, and discusses the relationship between radical innovation, and digital technologies and suggests that digital technologies could help in overcoming some of the challenges that impede the development, and proliferation of novel loneliness interventions.

### **1.4.2 Practical Contributions**

By using three distinct research methods, namely the SLR, expert interviews, and the action research based trial, this thesis presents a holistic exploration of SIFAA. This thesis offers a framework that suggests the use of various tools and techniques developed specifically for this research to either create brand new radical-digital loneliness interventions, transform existing interventions into radical-digital ones or scale existing radical-digital loneliness interventions vertically, as well as horizontally.

## **1.5 Structure**

This section serves as a guide to the reader and offers an outline structure of the entire thesis. The thesis contains seven chapters outlined below:

**Chapter 1: Introduction** offers an overall synopsis of the thesis and introduces the aims and objectives of this research. It provides an initial insight into the motivation behind investigating loneliness interventions developed for older adults,

the action research methodology adopted for this research, and the contributions of this thesis, in addition to outlining the structure of this document.

**Chapter 2: The Silver Tsunami of Loneliness** presents a review of the literature available on how loneliness can affect an individual, as well as his/her social environment. It establishes the association between ageing and loneliness by providing a comprehensive examination of key theoretical contributions in both areas. It also points to the recent demographic developments to discuss the socioeconomic challenges that a global ageing phenomena can exert upon us. This chapter details out some of the complexities involved in understanding, and mitigating loneliness experienced by older adults.

**Chapter 3: Mapping the Research Space** serves as an appendage to the review of literature presented in 0 and acts as a bridge between the diagnosis and action planning stages of Susman and Evered's action research model (1978). This chapter can be likened to a pilot test, the results of which guided the overall strategy that was developed to address the research problem. It examines preliminary information accessed during the literature review stage of this study, and presents the findings from an early pattern-analysis of loneliness interventions targeting older adults. It describes various groupings into which loneliness interventions can be categorised and highlights the lack of radical-digital loneliness interventions as a focal theme for this thesis. It also highlights the need for thinking creatively in mitigating loneliness, and introduces SIFAA as a suggested means of developing radical-digital loneliness interventions.

**Chapter 4: Methodology** clarifies this thesis' epistemological stance and provides a rationale behind the choice of specific research methods used in this study. The chapter follows a tapering structure, presenting the high-level philosophical, and theoretical positions of this thesis embedded in pragmatism upfront, before delving deeper into how action research backed by action anthropology inspired the methodology of this study. Latter parts of this chapter offer a more specific insight into how the SLR, expert interviews, and an action research based trial for this study were operationalised. The chapter concludes by establishing the credibility of this practical approach to conducting research.

**Chapter 5: Results** is the lengthiest chapter of this thesis and hence has been divided into three parts aimed at presenting the outcomes from each of the research activities – the SLR, the expert interviews, and the action research based trial. The presentation of outcomes for each research activity is followed by an individual analysis and discussion, before culminating into a meta-analysis that combines the findings from all the three research activities. While the SLR reveals the patterns in our existing ways of designing and implementing loneliness interventions targeting older adults, the expert interviews highlight factors that facilitate or hinder the existence of radical-digital loneliness interventions. The action research based trial serves as a *test bench*<sup>4</sup> for SIFAA and its discussion herein presents its strengths and weaknesses that were observed during this experimentation.

**Chapter 6: Social Innovation For Active Ageing: Evaluation and Future Potential** is a chapter dedicated to discussing, and evaluating the core contribution of this thesis i.e. SIFAA. The chapter begins by pointing out how SIFAA can be used to develop radical-digital loneliness interventions. It highlights SIFAA's strengths and limitations, and suggests how it must adapt and evolve to be successful in future. This chapter also suggests seeking inspiration from the proliferation of innovative ideas within the sharing economy to provide mass and scale to SIFAA using digital technologies.

**Chapter 7: Conclusions** summarises the overall contributions of this body of work. More importantly, this chapter offers a reflection on the overall research aims and objectives, and the extent to which they have been achieved. This chapter summarises how the proposed union of social innovation and active ageing advances the existing theoretical and practical knowledge in both these areas, and how some of the research tools and techniques developed for this study are unique, but useful for future design research. This chapter concludes by highlighting the limitations of this work, and directions for future work.

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<sup>4</sup> In computer programming a test bench is a set of conditions (often computer code) that may be used to verify the correctness or soundness of a design or model.

# Chapter 2. The Silver Tsunami of Loneliness

*"All the lonely people, where do they all come from? All the lonely people, where do they all belong?"*

- (The Beatles, 1966)



## 2.1 Overview

This chapter provides a rich discussion of the literature available on how loneliness manifests itself within an individual, as well as in society. By comparing and contrasting popular notions of loneliness and ageing, this chapter aims to establish an association between these two phenomena. This chapter highlights the complexities involved in understanding, measuring and, alleviating later life loneliness, and emphasises the importance of researching this topic.

The interest in 'loneliness' as a topic for research has increased significantly since the 1970s (Savikko, 2008). Despite differing in opinion around the specific nature of loneliness, researchers generally consider loneliness to represent a negative emotion, which is detrimental to general health and wellbeing (Lynch, 1977, Cattani et al., 2005, Stuart-Hamilton, 2012). The notions that some degree of loneliness is necessary for society to function normally (Ferreira-Alves et al., 2014), and that it can be triggered due to a variety of causes (Doman and Le Roux, 2010) only adds to its complexity as a research problem.

This chapter starts the discussion on later life loneliness by providing a *meta* view of the 'process' of loneliness, and the changes that come with experiencing it. The first section of this chapter presents a rich account of popular theories that attempt to explain the occurrence of loneliness. These range from holding intrinsic factors such as cognitive models, to extrinsic ones such as social relationships, responsible for instigating loneliness. The following section then explores various factors that could trigger loneliness in older age, as well as the need for research in this correlation between loneliness and these perceived triggers, given the socioeconomic implications of later life loneliness for a globally ageing population. This chapter argues that the 'batch' of older adults now reaching retirement age are unique, given their formative experiences growing up in the 1960s. This means that to address the problems faced by this generation of older adults, as a society, we need to think creatively because there is currently no precedent to dealing with their needs, demands, or aspirations. The chapter concludes by highlighting the complexity



involved in developing and evaluating loneliness interventions, and the consequent need to study these interventions.

## 2.2 Loneliness

Despite being an important topic of debate, discussion and deliberation amongst artists, philosophers, academic researchers, healthcare practitioners, and politicians, etc. for a long time, there seems to be a lack of consensus around the definition of loneliness. Letitia Peplau (1982 p. 123-124) has aptly described this confusion around loneliness' comprehension in a book she edited along with Daniel Perlman as follows:

*"In the introduction to Chapter 10, Derlega and Margulis<sup>5</sup> note three stages of concept development. In Stage 1, the importance of a concept is justified. In Stage 2, the concept is explored and attempts are made to demonstrate its similarities and differences from other phenomena. Only in Stage 3 do theories emerge. Such theories involve a set of concepts plus a series of logically compatible statements about how the constructs are related to one another. As Derlega and Margulis note, most speculation on loneliness has been at Stages 1 and 2. Most models for understanding loneliness have been neither fully nor systematically articulated at the level of a true story."*

Although more than three decades old, this view resonates with Edwards, who suggests that "The complex emotional and psychological states that are often associated with loneliness are not fully understood and require further research" (2016). Thus, our understanding of loneliness as a concept is very much an ongoing process. Due to the inherent 'complexity' (Murphy, 2006) in understanding loneliness, and the diversity in thought of articulating it (Table 1), this chapter provides an overview of *Stages 1 and 2* of the current research around loneliness. Overall, this thesis does not attempt to paint a 'true story' of loneliness, and therefore

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<sup>5</sup> This quote has been taken from Chapter 8 of the same book i.e. 'Loneliness: A Sourcebook of current theory, research and therapy' edited by Perlman and Peplau. Derlega and Margulis have written Chapter 10 for the book.

does not give rise to a new theory of loneliness, represented by *Stage 3*. Instead, this thesis offers a framework titled Social Innovation for Active Ageing (SIFAA) to mitigate a specific form of loneliness – that experienced by older adults (see Section 3.3 and Chapter 1).

As social animals our social relationships are very important to our emotional fulfilment, behavioural adjustment and mental wellbeing (Hughes et al., 2004) and any disruption to these relationships can cause an exceedingly unpleasant experience associated with insufficient discharge of the need for human intimacy, called loneliness (Weiss, 1973). Due to the negative feelings usually associated with loneliness, it is often perceived as a problem, and is known to have detrimental effects on a person's health and quality of life (Lynch, 1977, Cattani et al., 2005, Stuart-Hamilton, 2012). According to leading primatologist Frans de Waal, "Next to death, solitary confinement is our most extreme punishment. Our bodies and minds are not designed for lonely lives. We become hopelessly depressed in the absence of human company and our health deteriorates" (2006 p. 6). Though de Waal's quote refers to a solitary state, loneliness should not be confused with living alone as many people who do live alone, live fully integrated and socially active lives (Larson et al., 1985, Leikas et al., 2012). However, although living alone does not equate to experiencing loneliness, researchers have found a positive correlation between the two. Loneliness is known to be more common amongst people who live alone (Havinghurst, 1978, Hunt, 1978, Wenger, 1983); and prolonged solitary living has been known to 'turn into' loneliness (Bernstein, 2013). Also, nearly everybody experiences some degree of loneliness throughout his or her lifetime (Bernstein, 2013), but the individual experiences of loneliness can vary depending on the person experiencing it (Moustakas, 1961).

Luo et al. equate loneliness to 'perceived isolation' because it is a subjective feeling (2012) hinting at the distinction between being *actually* isolated and being lonely. Loneliness can be more precisely defined as the distressing feeling that results from, and comes with, discrepancies between one's desired and actual social relationships (Pinquart and Sörensen, 2003). Weiss describes it as "a gnawing chronic disease without redeeming features" (1973 p. 15). Perlman and Peplau suggest that a

## 2.2 Loneliness

huge mismatch between one's actual social relations and his or her needed or desired social relations signifies loneliness (1998). The following table presents a synthesis of how various historical attempts at defining loneliness focus on its negative aspects suggesting that it is an undesirable situation.

Perspectives on Loneliness (Twelve Definitions of Loneliness)		
Year	Definition	Source
1953	Loneliness... is an <b>exceedingly unpleasant</b> and driving experience connected with <b>inadequate</b> discharge of the need for human intimacy, for interpersonal intimacy.	Sullivan, p. 290
1969	Loneliness is a sentiment felt by a person... [experiencing] a wish for a form or level of interaction <b>different from</b> one presently experienced.	Lopata, p. 249-250
1973	Loneliness is caused not by being alone but by <b>being without</b> some definite needed relationship or set of relationships... Loneliness appears always to be a response to the <b>absence of</b> some particular type of <b>relationship</b> or, more accurately, a response to the absence of some particular relational provision.	Weiss, p. 17
1976	Loneliness [is] a <b>feeling of deprivation</b> caused by the <b>lack of</b> certain kinds of human contact: the feeling that someone is <b>missing</b> . And since one has to have had some expectations of what it was that would be in this empty space, loneliness can further be characterised as the <b>sense of deprivation</b> that comes when certain <i>expected</i> human relationships are <b>absent</b> .	Gordon, p. 26
1976	Loneliness is an adaptive feedback mechanism for bringing the individual from a <b>current lack stress state</b> to a more optimal range of human contact in quantity or form. "Lack Stress" means too little of a given input, human contact in this instance.	Flanders, Chapter 11, p. 170
1978	We define loneliness as: the experience of <b>a lag</b> between realised and desired interpersonal relationships as <b>disagreeable</b> or <b>unacceptable</b> , particularly when the person perceives a personal <b>inability</b> to realise the desired interpersonal relationships within a reasonable period of time.	de Jong-Gierveld, p. 221
1978	Loneliness... is an <b>experienced discrepancy</b> between the kinds of interpersonal relationships the individual perceives himself as having at the time, and the kinds of relationships he would like to have, either in terms of his past experience or some ideal state that he has actually never experienced.	Sermat, p. 274
1980	Loneliness... refers to an affective state in which the individual is aware of the feeling of <b>being apart</b> from others,	Leiderman, p. 387

## 2.2 Loneliness

	along with the experience of <b>a vague need</b> for other individuals.	
1980	Loneliness is an experience involving a total and often acute feeling that constitutes a distinct form of self-awareness <b>signalling a break</b> in the basic network of the relational reality of self-world.	Sadler & Johnson, p. 39
1981	Loneliness is the <b>unpleasant experience</b> that occurs when a person's network of social relations is <b>deficient</b> in some important way, either quantitatively or qualitatively.	Perlman & Peplau, p. 31
1982	I define loneliness as <b>the absence or perceived absence</b> of satisfying social relationships, accompanied by symptoms of <b>psychological distress</b> that are related to the actual or perceived absence... I propose that social relationships can be treated as a particular class of reinforcement... Therefore, loneliness can be viewed in part as <i>a response to the <b>absence of important social reinforcements</b></i> .	Young, Chapter 22, p. 380, italics in original
1982	In our view, loneliness is caused by <b>the absence</b> of an appropriate social partner who could assist in achieving important other-contingent goals, and the continuing desire for such social contacts.	Derlega & Margulis, Chapter 10, p. 155

**Table 1: Twelve Definitions of Loneliness. Source: Perlman and Peplau (1998)**

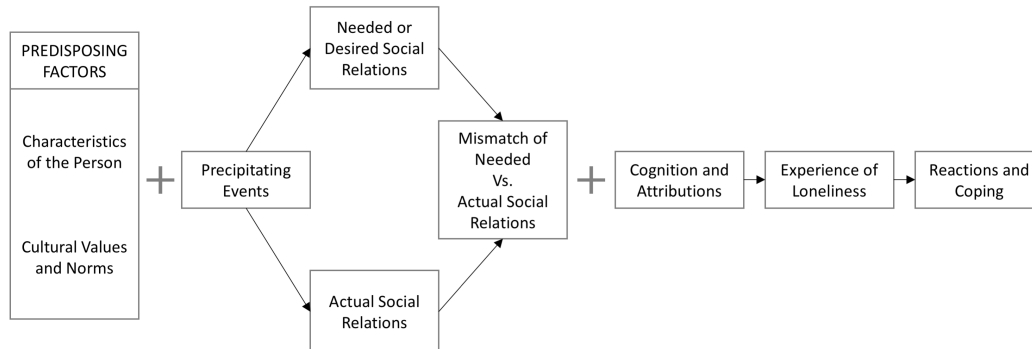
A synthesis of the historical ways in which loneliness has been defined reveals that it is generally associated with distress originating from the lack of, or perceived absence of, preferred levels of social contact. While Weiss (1973) highlights the need for human intimacy in his definition, Flanders (1976) and Sadler & Johnson (1980) point at perceived dissatisfaction with one's social relationships as being central to experiencing loneliness. Similarly, Lopata (1969) and Perlman & Paplau (1981) emphasise the importance of a change in existing circumstances causing loneliness. The feelings associated with loneliness can vary depending on various factors such as the permanency of the deficiency of desired relationships (George, 1984), or one's predisposition or susceptibility to loneliness owing to psychosocial or cultural factors (Hawkley and Cacioppo, 2009). The following section discusses several theories that inform current research on loneliness and its perceived causes.

### 2.2.1 An introduction to the theories of loneliness

Understanding different feelings associated with loneliness can aid our comprehension of its inherent complexities (Ekwall et al., 2005). Wenger et al. suggest that, “although not always made explicit in the literature, social isolation refers to the objective state of having minimal contact with other people; while loneliness refers to the subjective state of negative feelings associated with perceived social isolation, a lower level of contact than that desired or the absence of a specified desired companion” (1996 p. 333). According to Killeen (1998), social isolation is almost a ‘compromise concept’ between loneliness and ‘aloneness’ determined by an element of ‘choice’. Murphy summarises Killeen’s point by stating, “Social isolation with choice is aloneness, while social isolation without choice is loneliness” (2006 p. 23).

Loneliness can be temporary (transient) or more permanent (chronic) in nature (De Jong-Gierveld and Raadschelders, 1982). Common elements can be identified in different types of loneliness to prepare a ‘discrepancy model’ for understanding loneliness (Perlman and Peplau, 1998). Apart from focussing on the mismatch between actual social relationships versus needed or desired ones, Perlman and Peplau’s discrepancy model also distinguishes between ‘predisposing factors’ that make people susceptible to loneliness and ‘precipitating events’ that instigate loneliness (1998). For example, since women generally live longer than men, there is a higher chance of them outliving their male partners in older age, thereby making them more vulnerable to feeling lonely. Similarly, certain events in life such as being asked by one’s employer to work in a different geographical location to their partner’s, can create an environment conducive to experiencing loneliness.

## 2.2 Loneliness



**Figure 2: Discrepancy Model of Loneliness. Source: Perlman and Peplau (1998)**

Some loneliness theorists suggest that loneliness can occur when basic human social needs remain unmet (Weiss, 1973). Others take a more cognitive perspective, highlighting the difference between a person's desires or expectations for relationships in comparison to the reality of their social life (Peplau, 1982). The former approach is called the *social needs perspective* on loneliness and the latter is represented by the *cognitive discrepancy model* of loneliness (Perlman and Peplau, 1998). In order to fully understand what loneliness means and how it can be distinguished from social isolation or aloneness, it is useful to engage with the theories of loneliness. To some extent all loneliness theorists acknowledge that the causes of loneliness can be internal such as cognitive elements as well as external influences like psychosocial factors, as suggested by the cognitive discrepancy model (Perlman and Peplau, 1998). In the following section the theories of loneliness have been classified into three categories to simplify this discussion. They have been categorised based on whether they emphasise internal factors causing loneliness, external factors, or both.

### 2.2.2 Loneliness theories based on internal factors.

#### *Social skills deficit and personality traits.*

Hawkley and Cacioppo (2009) have theorised that loneliness can arise from social skill deficits and personality traits that weaken the formation and continuation

## 2.2 Loneliness

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of social relationships. The lack of social skills arising from personality-related behavioural qualities can lead to poor partner-attention skills, shyness, pessimism, and more self-focus, etc. These are symptomatic of loneliness but can also be confused with being depressed.

### *Rogers' phenomenological perspective*

Carl Rogers is the most noted proponent of a phenomenological perspective of loneliness. In his "self-theory" of personality, he argues that society restricts individuals to act in socially approved ways. This leads to an internal conflict between one's true inner self, and the self manifested to others resulting in an 'empty existence'. Other proponents of this view such as Moore (1976), and Eddy (1961) suggest that when individuals get in touch with their inner selves, they expect rejection from others. The belief that they are unlovable keeps them 'locked' in their loneliness (Rogers, 1973).

### *The existential approach*

Existentialists base their view on the 'fact' that humans are ultimately alone. They suggest that because nobody else can experience what goes on inside our minds, separateness is an essential condition for human existence (Moustakas, 1961, Moustakas, 1972). The existential approach is not so much about seeking the causal factors or root causes to loneliness. In fact, it does not even talk about what can increase or decrease loneliness, as existentialists take the view that it is a given condition of human life.

### *The Cognitive Approach*

Peplau et al. (1982) draw on attribution theory to highlight cognition as the mediating factor between deficits in sociability and the experience of loneliness. Attribution theory deals with how we attach meaning to behaviour of others as well as our own. Basing their ideas on attribution theory, Peplau et al. discuss how perceived causes of one's own loneliness can affect the intensity of experiencing loneliness and the perceived likelihood of it persisting over time.

### *Psychodynamic models*

Zilboorg (1938) traced the origins of loneliness to infancy. According to him the constant love and admiration that infants receive combined with the shock of being a small and vulnerable creature, dependent on others, makes them retain feelings of omnipotence, egocentrism, megalomania, and hostility when they grow older. Sullivan (1953) and Fromm-Reichmann (1959) corroborated Zilboorg's views in their studies. Sullivan suggested that there is a driving need for human intimacy that can be seen in preadolescent behaviour such as *needing a chum* or sharing intimate information with friends. Youngsters who lack social skills because of faulty interactions with their parents during childhood are likely to face difficulties in forming a close bond or 'chumship' with others. This inability to satisfy the need for human intimacy can become fully blown loneliness. Though early experiences may have been caused due to external factors, this view emphasises how factors within the individual (traits, internal psychological conflicts, etc.) may lead to loneliness.

### **2.2.3 Loneliness theories based on external factors**

#### *Evolutionary perspective*

This view suggests that it 'makes sense' for human beings to cooperate, form alliances, or behave altruistically in order to survive together in the evolutionary process. Hawkley and Cacioppo (2009) theorise that 'aversive' feelings associated with loneliness act as adaptive forces to motivate the repair or replacement of social connections. They highlight human offspring's 'utter' dependence on others for the longest period of time in comparison to other animals, as an example of the levels of collaboration required by our species.

#### *Social relationships*

Hawkley and Caccioppo (2009) suggest that deficiencies in specific provisions of social relationships contribute to particular types of feelings associated with loneliness. For example, a lack of engagement in a social network can instigate a



## 2.2 Loneliness

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feeling of social loneliness, and the absence of a reliable attachment figure such as spouse, can result in emotional loneliness.

### *Sociological explanations*

Bowman (1955) suggests that a decline in primary group relations combined with a collective increase in family mobility and social mobility act as the three main social forces that cause an increase in loneliness. Riesman et al. (1961) and Slater (1976) argue that the society fails to meet its members' needs. They suggested that in a bid to conform to social standards and their desires to be liked by everyone, people continuously monitor their interpersonal environment and determine how they should behave. This can result in them becoming cut-off from their inner-self and their behaviour which is being constantly shaped by their parents, teachers, and mass media can create an insatiable concern with peer-popularity. Their behaviour thus becomes 'other-directed' and they become a part of 'the lonely crowd'. Slater further went on to suggest that individualism has been promoted in society, which means that everyone should pursue his/her own destiny. This social outlook further contributes to the prevalence of loneliness in our society.

### *Situational Factors*

According to this view, situational factors influence the availability of social opportunities. For instance, geographical relocation can determine the possibility and level of social contact for someone thereby influencing their exposure to experiencing loneliness. Hawkey and Cacioppo (2009) however clarify that the quality of social relationships is a better predictor of loneliness than the quantity of contact one may have.

### 2.2.4 Loneliness theories based on a combination of internal and external factors

#### *Genetic predisposition*

Hawkley and Cacioppo (2009) suggest that nearly 48 per cent of the variability in loneliness levels can be explained by inherited tendencies to experience loneliness thereby hinting at a possible genetic predisposition to loneliness. They clarify that genes underlying loneliness cannot act alone and that their expression depends on environmental factors. For example, being divorced or widowed can increase the chances of such genes to express themselves in comparison to their recessive state in married couples.

#### *The interactionist view*

Weiss (1973) suggests two reasons for the existence of loneliness. Firstly, he suggested that loneliness is neither caused solely by personality factors, nor by situational factors but is a product of their combined (interactive) effect. Secondly, loneliness occurs when one's social interaction is deficient in supplying crucial social requirements such as provisions of social relationships, attachment, guidance, and a sense of worth.

#### *A privacy approach*

Derlega and Margulis (1982) talk about privacy and self-disclosure as key concepts in understanding loneliness. Like Weiss, they base their theory on the underlying assumption that social relationships help individuals in achieving their goals. The absence of an appropriate social partner who could assist in achieving these goals means that one's interpersonal relationships lack the privacy needed for honest communication. This lack of someone to share private information with can cause loneliness.

## 2.2 Loneliness

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### *General systems theory*

Flanders (1982) uses the systems theory to explain the occurrence of loneliness. Systems theory assumes that the behaviour of living organisms reflects the interconnected influence of various levels of operating simultaneously as a system. These intermeshed phenomena can range from functioning on a cellular level to working in coordination on an international scale. Flanders argues that loneliness is a feedback response to help the individual or society maintain a steady, optimal level of human contact.

### *Attachment theory*

John Bowlby's (1973) seminal work on attachment bonds can be considered one of the earliest advancements in theorising loneliness. Attachment theory explains how parent-child attachments and subsequent adolescent and adult attachments (with friends, mentors, sexual partners, etc.) are related to the feeling of loneliness. The removal of a reliable attachment figure from a person's life causes deficiencies in social relationships serving specific functions (e.g. attachment, social integration, nurturance, etc.). This absence can be triggered by migration, loss of partner, a breakup, etc. and it is posited to contribute to emotional loneliness.

This review of theories of loneliness suggests that there is no single factor, or a set combination of various factors that can be attributed to its occurrence. While some theorists have emphasised the importance of internal factors such as personality traits and cognitive models, others have listed the role of external influences and societal pressures as factors that can be associated with experiencing loneliness. It is also important to note that such internal and external factors related to loneliness, do not operate as mutually exclusive forces. One's innate predisposition to loneliness is almost inevitably *affected* by their social context. For example, even though some researchers have found a genetic basis to loneliness, it can only determine one's vulnerability to feeling lonely and scientists have clarified that the genes related to loneliness need a conducive environment to express themselves. Hence, internal or

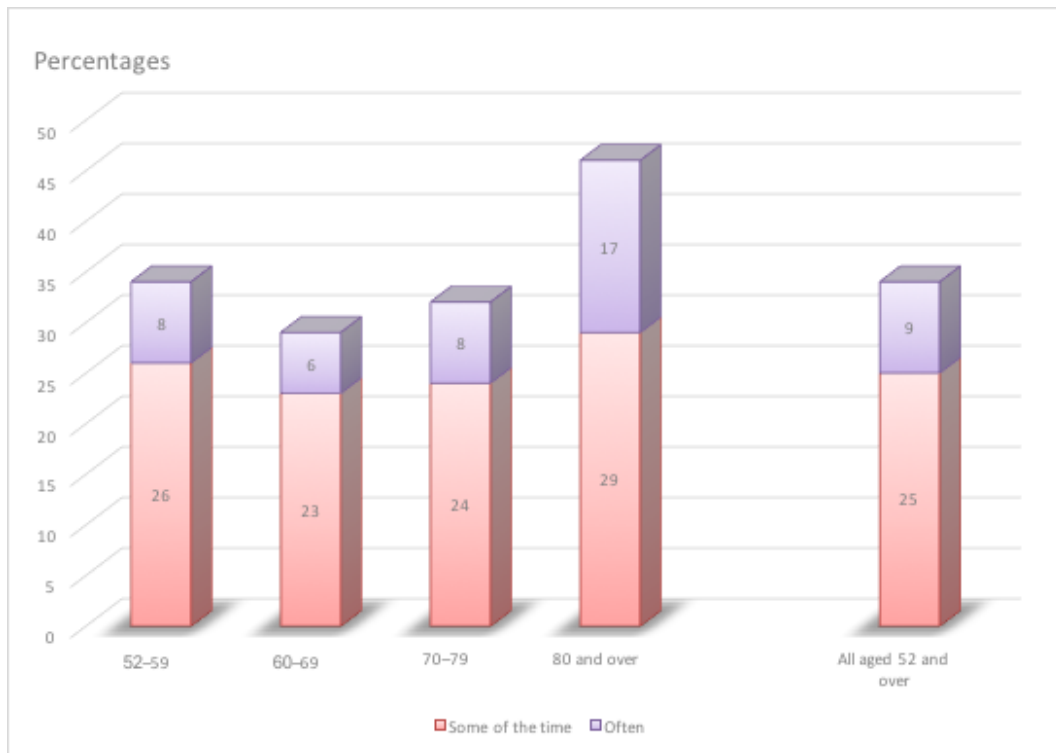
external factors must not be regarded as separate, but rather as being in some form of harmony. This means that both *social needs perspective* and *cognitive discrepancy model*, that aim to theorise the occurrence of loneliness, are not competing theories, but complementary ones.

It must also be noted that these theories of loneliness provide an overview of factors that can cause loneliness amongst various age groups. They do not specifically describe loneliness experienced by the older population. Because this research work is primarily concerned with the ageing population, through the following discussion this thesis begins to unravel how old age and loneliness are related. The chapter then summarises factors that ‘trigger’ loneliness in old age, how measurable it is and, what coping strategies have been deployed to tackle later life loneliness?

## 2.3 Later Life Loneliness

It has long been understood that loneliness is closely associated with ageing and researchers have discussed the occurrence of loneliness and social isolation among older adults as early as the 1950s. More recent studies have revealed the prevalence of loneliness among people over the age of 80 years (Kaasa, 1998). Demakakos et al. have also reported this age group’s ‘vulnerability’ to being lonely (2006) and both social isolation and loneliness have been reported as two problems associated with old age (Sheldon, 1948, Halmos, 1998, Dykstra et al., 2005, Dykstra, 2009). Wilkes opines that loneliness is in fact ‘the main problem’ associated with later years of life (1978). For instance, it has been reported that nearly half a million older Britons had no one to celebrate their Christmas with in 2009 (Daoust, 2010). Recent data from the English Longitudinal Study of Ageing (ELSA) shows that 25 per cent of respondents over the age of 52 reported feeling lonely sometimes and 9 per cent said that they felt lonely often. 46 per cent of such individuals who reported feeling lonely sometimes or often were aged 80 years and over (Beaumont, 2013).

## 2.3 Later Life Loneliness



**Figure 3: Frequency of feeling lonely by age group (2009 - 10), England. Source: English Longitudinal Study of Ageing, Wave 5, (2009 - 10)**

Loneliness is known to be detrimental to physical health as it is perceived as an indicator of increased blood pressure (Hawkey et al., 2006, Hawkey et al., 2010) and is known to increase susceptibility to other diseases and mental illness (Dean and Lin, 1977, Murphy, 2006, Cattani et al., 2003, Masi et al., 2011, Stuart-Hamilton, 2012). Tiwari suggests that “loneliness may be *pathognomic* of depression in old age” (2013 p. 320). In medical terms, pathognomic means characteristic of a particular disease – in this case depression. However, the relation between age and loneliness is not as straightforward as it appears. Kaasa warns against making stereotypical connections between old age and loneliness as that can contribute to an erroneously gloomy perception of all older people as being lonely and unhappy (1998).

The occurrence of loneliness among older adults has been found to vary in different surveys. This variation can be attributed to differences in cultures, countries, age-ranges and rural-urban differences, etc. (Kaasa, 1998, Jones et al., 1985). In a

## 2.3 Later Life Loneliness

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recent speech, UK Health secretary Jeremy Hunt urged the UK to seek inspiration and learn from Asian cultures where there was ‘more reverence and respect’ given to older people (Butler, 2013). However, Jack Neill-Hall, who represents *Campaign to End Loneliness*<sup>6</sup>, does not believe that attitudes towards older persons have changed drastically in the UK. He suggests that an increase in ageing population simply means that there are many more older people who are isolated than before (BBC News, 2014).

This surge in the ageing population is expected to apply socioeconomic pressures on countries such as the UK, currently home to more than 11.6 million people over the age of 65 years (Age UK, 2016). Increasing loneliness amongst this demographic is naturally then a serious concern amongst policy makers (Bingham, 2012, Marsh, 2014a). Early evidence of this pressure can already be seen on National Health Services (NHS) in the UK. For instance, apart from older patients who need medical attention due to age-related health conditions, it has also been reported that in a bid to cope with their loneliness, some older adults tend to visit their General Practitioners (GPs) more frequently for company rather than for medical advice. Castle Point Association of Voluntary Services Befriending Scheme (CAVS) refers to these older users as ‘frequent flyers’ (Campaign to End Loneliness website, 2013). O’Connor calls later life loneliness ‘a ticking time bomb’ (2014) and suggests that it has serious cost implications for the NHS. According to him doctors usually respond to patients who are initially manifesting loneliness-related depression by prescribing conventional anti-depressants such as *Prozac*. However, he feels that this is not a solution: “it’s akin to placing a sticking plaster on a bleeding skin wound” (O’Connor, 2014).

Murphy has called loneliness amongst older adults, a “complex concept” (Murphy, 2006 p. 22). One way of making this point clearer is to look at Cattani et al.’s

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<sup>6</sup> The Campaign to End Loneliness is a network of national, regional and local organisations and people working together through community action, good practice, research, and policy to ensure that loneliness is acted upon as a public health priority at national and local levels. It is governed by Age UK Oxfordshire, Independent Age, Manchester City Council, Royal Voluntary Service and Sense, and works alongside more than 2,500 campaign supporters.

## 2.3 Later Life Loneliness

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seminal work on ‘preventing social isolation and loneliness among older people’ (2005) where they systematically reviewed loneliness interventions targeting older adults. Some of the interventions they reviewed were conceived and implemented more than thirty years ago. This indicates that for the past three decades we have been grappling with similar, if not the same issues.

Also, though O’Connor’s use of a ‘time bomb’ metaphor to communicate the gravity of the situation might sound pessimistic, it is because healthcare has focussed on curing the symptoms (sticking plasters), more than targeting the root cause of the issue, that we haven’t been able to eradicate loneliness from the lives of older adults. Arguably, there is a need for a more optimistic view of the global ageing phenomena, and therefore, this thesis focusses on the opportunities, and not just the challenges presented by this ongoing demographic change (Dychtwald and Flower, 1989, Adams, 2011). This thesis is an effort to explore the prospects of thinking creatively and innovatively, in addressing this extremely complex and timely research problem.

In order to untangle some of these complexities and to understand what opportunities are presented by this unprecedented demographic shift, it is important to first investigate the relationship between ageing and loneliness. The following section presents a chronological account of common psychosocial theories of ageing that attempt to explain the relationship between older age and loneliness.

### 2.3.1 Chronological Progression of Psychosocial Theories of Ageing

Austad defines ageing or senescence as “the progressive deterioration of virtually every bodily function over time” (1997 p. 6). Bowen and Atwood on the other hand believe that this definition does not consider the fact that senescence, growth and development can occur simultaneously. Therefore they propose an alternate, broader definition of ageing as “any change in an organism over time” (2004 p. 266). Age is generally measured numerically and Ryu et al. argue that the majority of research on ageing uses ‘chronological age’ as a variable because it is easily measurable (2009). However this might not be the right approach to understanding ageing because such temporal association may have little or no significance in the ‘meaning’ of old-age (Gorman, 1999). Also, there is no biological reason behind

## 2.3 Later Life Loneliness

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demarcating any particular age to represent “passage to elder status” (Grundy, 2006 p. 1). Hence the changes that come with ageing are more important than the number that represents a person’s age because ageing is a ‘continuous’ and ‘highly complex process’ (Moschis, 1992, Mathur and Moschis, 2005). This creates all kinds of problems for researchers looking to theoretically *grasp* ageing such as: “Developing sound theory has special challenges in fields where unsound beliefs and assumptions abound, which is inevitably the case in the study of age” (Dannefer, 2011 p. 4).

Ageing can be studied from many perspectives. Moschis (1992) classifies them as bio-physical (sensory, intellectual depletion, etc.) or psychosocial (psychological and social perception). The thrust of this thesis is on the non-medical or non-pharmacological aspects of loneliness and therefore this chapter presents a progression of different psychosocial theories of ageing in time.

Psychosocial theories are grounded in psychological theories of ageing and Schroots traces the scientific history of the psychology of ageing to pioneering work by G.S. Hall (1922), Charlotte Buhler (1933), Carl G. Jung (1933), and Walter Miles (1933). However he clarifies that theoretical developments in *psychogerontology* basically started after World War II (Schroots, 1996a). He classifies the post-World War II theoretical developments in the area of ‘psychology of ageing’ into three broad groups or periods: the Classical period (‘40s-‘70s), the Modern period (‘70s-‘90s), and the New period (‘80s-‘90s) (Schroots, 1996b). Although, Schroots has classified psychological theories of ageing into three groups or periods (Table 2), he does not provide a rationale for this grouping, and briefly describes each theory (1996b).



## 2.3 Later Life Loneliness

Schematic Overview of Psychological Theories of Ageing	
Theory	Authors
<b>Classical Theories</b>	
Developmental Tasks / Activity Theory	Havighurst (1948)
Psychosocial Theory of Personality Development	Erikson (1950)
Counterpart Theory	Birren (1960)
Disengagement Theory/Activity Theory	Cumming & Henry (1961)
Personality Theory of Age and Ageing	Neugarten (1968)
Cognitive Theory of Personality and Ageing	Thomae (1970)
<b>Modern Theories</b>	
Life-span Development and Ageing	Baltes et al. (1980,1987,1992)
Reduced Processing Resources	Salthouse (1985,1988,1991)
Personality and Ageing	Erikson (1950); Levinson (1978); Costa & McCrae (1988,1992)
Behavioural Genetics and Ageing	Plomin & McClearn (1990); Pedersen (1996)
<b>New Theories</b>	
Gerotranscendence	Tornstam (1989,1992,1994)
Gerodynamics / Branching Theory	Schroots (1988,1995a, b)

**Table 2: Schematic Overview of Psychological Theories of Ageing. Source: Schroots (1996)**

According to Wandensten, “psychosocial theories of ageing attempt to explain human development and ageing in terms of individual changes in cognitive functions, behaviour, roles, relationships, coping ability and social changes. These theories do not describe how older people could be treated or what is important in care of older people. However, they are interesting because they describe what ageing implies and we should, therefore, be able to derive from them factors that are important in nursing” (2006 p. 348). This chapter discusses the following theories: activity theory, the disengagement theory of ageing, continuity theory, Erikson’s psychodynamic theory of human development and the theory of gerotranscendence. In her review of

## 2.3 Later Life Loneliness

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psychosocial theories of ageing, Wadensten has shortlisted these five theories as they capture the diversity of thought around ageing (2006).

### *The Disengagement Theory*

The disengagement theory was developed by Cumming and Henry in 1961. Their theoretical stance emerges from the assumption that from middle age onwards, people begin to turn inward – a sort of disengagement from their society (1961). They suggested that “ageing is inevitable, mutual withdrawal or disengagement, resulting in decreased interaction between the ageing person and others in the social system he belongs to” (Cumming and Henry, 1961 p. 227). This translates into older adults’ withdrawal from previous roles and activities, eventually leading up to a gradual retraction from society (Wadensten, 2006). The theory further suggests that society acknowledges this withdrawal and responds by preparing to function in their absence. At the heart of this theory is the ‘inevitable’ nature of these changes that come with age. It also argues that it is natural and acceptable for older adults to display this social disengagement and withdrawal (Boundless Website, 2014). Also, this theory suggests that an ageing person’s increased preoccupation with self, coupled with society’s tendency to reject ageing individuals, results in an irreversible, decreased interaction between the two. Due to a gradual decrease in the number, nature and diversity of an older person’s social contacts, disengagement becomes a circular process further limiting the opportunities for interaction (Wadensten, 2006).

However, according to this theory disengagement does not mean inevitable dissatisfaction or problems for the individual – it is rather associated with satisfaction and harmony, both for the individual, as well as the society. Hence, it suggests that successful ageing occurs when an ageing person abandons social roles and relationships and when the individual reduces his or her activities and involvement in society (Wadensten, 2006).

According to Schroots, although this theory claims to provide a general understanding of psychosocial aspects of ageing, it offers a skewed view of ‘the aged’, because a significant proportion of older people do not display a loss of interest in life and do not withdraw from society either (1996a). Due to its universal and

## 2.3 Later Life Loneliness

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unidirectional claims, disengagement theory has faced strong criticism (Bengston and Putney, 2009). Both 'activity theory' and 'continuity theory of ageing' which have been discussed below, evolved from a rebuttal of the disengagement theory.

### *Activity Theory*

Although activity theory grew largely in response to 'the disengagement theory' (Schroots, 1996a, Wadensten, 2006), its origin can be traced back to the publication of the first version of Havighurst's book – 'Developmental Tasks and Education' in 1948. This book introduced the concept of 'developmental tasks' in a lifespan perspective which include six developmental stages or age periods (Havighurst, 1948). "A developmental task arises at or about a certain period of the life of the individual, successful achievement of which leads to his happiness and success with later tasks, while failure leads to unhappiness in the individual, disapproval by the society, and difficulty with later tasks" (Schroots, 1996a pp. 743 - 744). According to this concept, each 'age period' or stage has different tasks with different biological (physical maturation), psychological (aspiration or values) and cultural (expectations of society) bases. Later in time, the core organising concept of age-related developmental tasks was named 'activity theory'.

Activity theory of ageing suggests that there are no differences between middle-aged and older people, apart from biological and health-related aspects. In activity theory, it is assumed that continuing the activity patterns and values characteristic of middle age is essential to having a rich and satisfying life (Wadensten, 2006). Therefore activity theory displays a 'functionalist perspective' (Schulz, 2006) and it assumes that "there is a positive relationship between a person's level of activity and life satisfaction, which in turn increases how positively a person views himself or herself (self-concept) and improves adjustment in later life" (Diggs, 2007 p. 79).

The application of activity theory looks to encourage or support older adults in remaining active beyond middle age by finding replacements for their 'lost roles' and social positions (Lemon et al., 1972, Diggs, 2007). Or as Schroots puts it, activity theory calls for the substitution of old roles by new ones in an older person's life to ensure a positive sense and a better quality of life (1996a). Although very popular in

## 2.3 Later Life Loneliness

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public healthcare, activity theory has been criticised for overlooking inequalities in health and socio-economic status, and ignoring other important factors such as personality traits and lifestyle characteristics (Diggs, 2007, Bengston and Putney, 2009). It is noteworthy that though its foundation was laid in 1948 in the 'developmental tasks' concept, Havighurst actually formulated the 'activity theory' in its present form in 1961 (Havighurst, 1961, Diggs, 2007).

### *Continuity Theory*

Continuity theory was initially proposed by Havens (1968) but it was developed by Atchley who built a theoretical framework based on Havens' concepts of continuity perspective (1980, 1989). This theory establishes a relationship between an individual's habits, preferences and other dispositions during the process of ageing with his or her personality (Wadensten, 2006). According to Atchley, older adults try to maintain a certain sense of continuity of their lifestyle by adapting strategies that are informed by and connected to their past experiences (Atchley, 1989).

Wadensten states that "The basic premise of the continuity theory is that, as middle-aged and elderly adults adapt to changes associated with the normal ageing process, they will attempt to rely on existing resources and comfortable coping strategies. In other words, as individuals strive to achieve their goals and cope with ageing, their past experiences, decisions and behaviours will form the foundation for their present behaviour. Thus, future decisions and behaviour remain the same" (Wadensten, 2006 p. 350). Hence continuity alludes to the idea that individuals do not really change as they age, instead they continue to become more of what they have always been (Agahi et al., 2006). In this way it "downplays the changes associated with ageing, and instead focuses on what doesn't change" (Harwood, 2007 p. 14).

This theory discusses the 'internal structure' and the 'external structure' of 'continuity of self' to explain how people adapt to their situations over time. The internal structure refers to intrinsic factors such as personality, ideas, and belief systems, etc. which are believed to remain constant throughout the life course such that the past sustains and supports one's new self. On the other hand, the external life structure of an individual such as relationships and social roles guide an individual's

## 2.3 Later Life Loneliness

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self-concept and lifestyle. Thus, according to this theory when the internal and external continuity are maintained, life satisfaction is high (Wadensten, 2006). Continuity theory states that successful ageing depends on an individual's capacity to 'continue' previous behaviour patterns or find new roles (Havens, 1968, Atchley, 1980, Atchley, 1989, Wadensten, 2006).

Continuity theory has been criticised for its definition of 'normal ageing' because it distinguishes normal ageing from 'pathological ageing'. In doing so, it neglects older adults with chronic illnesses. It is also believed to be male centric and hence invites criticism from feminist theorists as well (Quadagno, 1999).

### *Erikson's Psychodynamic Theory*

Like continuity theory, Erikson's psychodynamic theory also discusses the relationship between 'personality' and time. In the 1980s, husband and wife Erik Erikson and Joan Erikson revised E. Erikson's earlier theory that described human growth and maturation from birth to adulthood (1950), to include the process of ageing (1982). At the time, E. Erikson was himself 80 years old. He suggested that the task of old age was to balance the search for integrity and wholeness with a sense of hopelessness (Wadensten, 2006). According to this theory, human development courses through a total of eight stages. Each of these stages is associated with different identity crises and coping strategies. For each stage, there is an emphasis on ego development which is determined by physical development and biological maturation. An individual's experiences while navigating each of these stages shape their ability to successfully complete the next stage. Thus each stage's outcomes contribute to personal growth and it is hoped that having arrived at the final, i.e. the eighth stage, the individual would have 'attained a higher sense of maturity' (Wadensten, 2006).

Erikson described 'development' as an evolutionary process based on sequencing biological, psychological and social events. He also suggested that the maturation of bodily functions occurs in line with the expectations of an individual's sociocultural context (Wadensten, 2006). Erikson also theorised 'wisdom' that comes with old age as an acknowledgement and acceptance of competing life forces and of

## 2.3 Later Life Loneliness

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‘the reality of death’ (Agronin, 2011). It was suggested that this wisdom becomes the product of the dominant force of integrity in later life and as a practical force at this stage, it drives the motivation to be involved as caregivers, role models and guides for others across the generations (Agronin, 2013).

This definition of wisdom provides a glimpse into Erikson’s older life because Erikson himself had to struggle with a number of age-related physical ailments, and in his later life he also developed dementia (Agronin, 2013). In 1997, Joan Erikson published an extended version of ‘The Life Cycle Completed’, where she increased the total number of stages to nine. According to her, the ninth stage of old age symbolises extremely old people and it brings “new demands, *reevaluations* and daily difficulties” for older adults (Erikson and Erikson, 1997 p. 105). This extended version also contains a chapter on the theory of gerotranscendence, which was not originally proposed by her but was the latest theory on ageing at the time.

### *Theory of Gerotranscendence*

Lars Tornstam developed the theory of gerotranscendence in 1989. Tornstam suggests that ‘disengagement’ (Cumming and Henry, 1961) should not be perceived as a negative phenomenon, and that it is often a positive development towards what he referred to as ‘gerotranscendence’ i.e., “a shift in meta-perspective from a materialistic and rational view to a more cosmic and transcendent one, normally followed by an increase in life satisfaction” (Tornstam, 1989 p. 60). According to him the very process of living into old age involves a general potential towards gerotranscendence (Schroots, 1996a). Although ageing implies a process during which the degree of gerotranscendence increases, the process can be obstructed or accelerated by various aspects of the culture (Wadensten, 2006).

Tornstam based his theoretical concept on the basis of qualitative and quantitative studies (1992, 1994). In his theoretical framework, he discusses three levels of age-related ontological change: “(1) cosmic level — changes in the perception of time, space and objects, increase of affinity with past and coming generations, changes in the perception of life, disappearing fear of death, acceptance of the mystery dimension in life, and increase of cosmic communion with the spirit of

## 2.3 Later Life Loneliness

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the universe; (2) self-discovery of hidden (both good and bad) aspects of the self, decrease of self-centredness, self-transcendence from egoism to altruism, rediscovery of the child within, and ego-integrity; (3) social and individual relations — less interest in superficial relations, increasing need for solitude, more understanding of the difference between self and role, decreasing interest in material things, and increase of reflection” (Schroots, 1996a p. 746-747).

The theory of gerotranscendence harks key concepts from not only disengagement theory but also Erikson’s concept of ‘integrity’ (Erikson, 1950). While disengagement and psychodynamic theory refer to a sense of withdrawal, retraction, or elements in life that have passed, gerotranscendence is more outward facing and forward looking in its outlook, including the redefinition of reality. Though based on limited empirical evidence, it makes a valuable contribution to the further development of classical and modern psychosocial theories of ageing (Schroots, 1996a).

Psychosocial theories of ageing provide an interesting perspective on the relation between ageing and loneliness / social isolation. The idea that psychosocial theories acknowledge a sense of ‘disengagement’ from the society in older age (Cumming and Henry, 1961) can give rise to a need of ‘finding alternate roles’ (Havighurst, 1961, Lemon et al., 1972) in later life. Similarly, the desire to ‘maintain and continue’ (Havens, 1968) previous behavioural patterns in old age indicates a struggle on the part of older adults, to feel included. Also the ‘wisdom’ (Erikson and Erikson, 1982) to acknowledge death as a reality and a reduced interest in ‘superficial relationships’ (Tornstam, 1989) point to a certain sense of solitude that comes with age. Thus to some degree, all these theories point to a sense of divergence between the needs of an older person, and society in general.

According to Singh and Misra, “with advancing age, it is inevitable that people lose connection with their friendship networks and that they find it more difficult to initiate new friendships and to belong to new networks” (2009 p. 51). This thesis focuses on the suggested *inevitable withdrawal* of older adults from the society, and is specifically interested in the possibility of finding suitable replacements for the

## 2.3 Later Life Loneliness

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roles that older adults may have lost in society over time. As a first step towards this exploration, this thesis looks at specific causes that can instigate loneliness amongst older adults.

### 2.3.2 Triggers of Loneliness in later years of life

“Recent research has shown that emotional closeness in relationships increases with age. At the same time, however, the number of social relationships decreases, and social events triggering significant disruptions in social ties (e.g. death of a parent, children leaving home, relocation, death of a spouse) may increase” (Hughes et al., 2004 p. 626). Moreover, it is believed that changes in the way we work and live in the 21<sup>st</sup> century in western society are having a negative effect on our mental and emotional health in general (Barford, 2013). Griffin points out a potential link between our individualistic society and an upward trend in common mental health problems in the last 50 years. He suggests that according to research, unequal societies that leave behind more vulnerable people, tend to have a higher frequency of mental health problems (2010). Such shifting demographic patterns can potentially result in an even more pronounced change in the social environments of ageing persons among future cohorts of older adults (Hughes et al., 2004). Some of these changes might be more drastic than others but in various configurations, they may be associated with factors that can cause loneliness amongst older adults. The ‘key risk factors’ (Bernard and Perry, 2013) that can result in loneliness amongst older adults have been discussed below:

#### *Personal circumstances and characteristics*

It is believed that in the UK, nearly 60 percent of older adults over the age of 85 years now live alone (Office for National Statistics, 2014) and few do so by choice (Marshall, 2013). Apart from living alone that can increase one’s susceptibility to experiencing loneliness (Section 2.2), especially when it is not a matter of choice (Bernstein, 2013, Best, 2013), other personal circumstances such as marital status can also help determine vulnerability to loneliness. Research has shown that unmarried older adults are likely to be lonelier than married ones (Pinquart, 2003).



## 2.3 Later Life Loneliness

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Similarly, loneliness has been found to be associated with divorce where women are thought to be more affected than men due to factors such as women's financial dependence on men in many parts of the world (Woodward et al., 1981).

Loneliness affects not only solitary dwellers, but also people living as part of a community, such as in a care home (Murray, 2013). According to a recent report published by *The Campaign to End Loneliness*, "Moving to a care home involves a huge emotional upheaval. It is perhaps the biggest transition that any of us will face in our lives" (2014a p. 26). Such changes in someone's personal setting may expose them to the possibility of feeling lonely. One's financial state also determines exposure to loneliness. For example, being poor or on a low income are known risk factors to experiencing loneliness (Scharf et al., 2003, Age UK, 2012).

Being from an ethnic minority group is another personal trait that has been known to increase predisposition to loneliness (Scharf et al., 2002, Murphy and Shevlin, 2012). Research has also consistently found that ageing lesbians, gay men and bisexuals (LGBs) "are more apt to suffer from loneliness than their heterosexual counterparts" (Kuyper and Fokkema, 2010 p. 1171).

### *Transitions*

"Each day 6000 people become carers and the transition to caring, particularly to full-time caring, can plunge you into isolation... At the same time, when people's caring roles come to an end this can also bring feelings of loneliness" (Campaign to End Loneliness, 2014a p. 10). A context of 'shrunk personal space and diminished social interaction' that result from restrictions imposed by the caregiving role can cause a feeling of loneliness amongst caregivers (Vasileiou et al., 2017). Other drastic and tragic changes in personal circumstances such as bereavement and loss of a partner can also result in feelings of prolonged or chronic loneliness (Anderson and Gardner, 1997, Roxby, 2012). Another major factor that is seen as a potential trigger to loneliness is retirement. As Weiss suggests, retirees who do not have life partners can have special problems in coping with their change in circumstances. In the absence of someone with whom they can share their emotional lives, they are more prone to loneliness (Weiss, 2005).

## 2.3 Later Life Loneliness

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### *Health and disability*

Poor health can cause isolation (Willey, 2011) and lack of support during treatment for medical conditions such as cancer in old age means that isolation among such patients can be a vicious circle (Campaign to End Loneliness, 2014a). Some age-related health conditions can also decrease the mobility of older adults, thereby restricting their interaction with their friends and family, etc. This lack of interaction can make them prone to loneliness as well (Willey, 2011). Other health conditions such as hearing impairment are known to increase loneliness too (Age UK, 2011).

### *Geography*

One's geographical location determines a range of things such as people they come into contact with, accessibility to services and other infrastructure, etc. A recent report published by the Local Government Association, UK indicates that older adults living in isolated rural areas or deprived urban communities are prone to loneliness (2012). Living in a rural area can amplify difficulties associated with social participation, contributing to rural inhabitants' predisposition to experiencing loneliness (Burholt and Scharf, 2014). Although living in the countryside as an older person has several health benefits due to its peaceful and quiet atmosphere, etc., the unique characteristics of rural areas such as low population densities and large commuting distances can also pose challenges for older people (Age UK, 2014). These include high living costs, accommodation that is hard to heat and maintain, humble transport links and more limited opportunities for social interactions (Age UK, 2013b).

However, living in an urban area does not guarantee immunity from experiencing loneliness. Scharf and de Jong Gierveld's work demonstrates that older adults living in urban neighbourhoods that are socially deprived, can also experience loneliness (2008). Another important factor that can trigger loneliness amongst older people is the fear of crime in their area as it can 'trap' older adults in a way that they become prisoners in their own homes (Casciani, 2003). This is particularly relevant

## 2.3 Later Life Loneliness

because average crime rates are higher in urban areas in comparison to rural areas (Office for National Statistics, 2013).

<b>Personal Circumstances</b>
Living alone
Being divorced, never married
Living on low income
Living in residential care
<b>Transitions</b>
Bereavement
Becoming a carer or giving up caring
Retirement
<b>Personal Characteristics</b>
Age 75 plus
From an ethnic minority community
Being gay or lesbian
<b>Health and Disability</b>
Poor health
Immobility
Cognitive impairment
Sensory impairment
Dual sensory impairment
<b>Geography i.e. Living in an Area</b>
With high levels of material deprivation
In which crime is an issue

**Table 3: Key risk factors or triggers to loneliness. Source: Bernard and Perry (2013)**

It is important to look at these ‘triggers’ (Table 3) as potential risk factors and not as a system of classifying someone as being lonely. Also, there is a need to understand that while for some individuals one of these changes may trigger loneliness but for someone else, it might require a combination of a couple or more factors. This depends upon a range of other things such as their personality, past experiences, their circumstances, etc. However, certain life-course events such as retirement, reduced mobility, bereavement, etc. are more closely associated with the process of ageing and can increase one’s vulnerability to experiencing loneliness. As researchers interested in reducing loneliness, these triggers can be seen as

## 2.3 Later Life Loneliness

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opportunities for designing interventions to prevent loneliness by removing ‘barriers to participation’ for older adults (Burholt and Scharf, 2014). On a higher level, tackling loneliness calls for a change in policy in areas such as transport, housing, and healthcare (Scharf and de Jong Gierveld, 2008, Burholt and Scharf, 2014, Tsekleves et al., 2017). On the ground level, appraising the existing scenario and developing strategies to address any gaps in our knowledge can be the low hanging fruit. For example, using a service design approach, one can frame these triggers as *touchpoints* of access to their service aimed at combating loneliness (Shostack, 1982). Perhaps, providing information about local support at medical check-ups with General Practitioners (GPs), or when *surrendering* one’s driving license due to age-related health conditions, can help vulnerable older adults find out about services that they might benefit from using. A similar information dissemination approach can be installed at retirement events, to raise awareness about the potential psychosocial implications, and support systems available to deal with a change in lifestyle – such as loneliness.

This thesis suggests that digital technologies can play a vital role in making loneliness amongst older adults a prominent topic of discussion amongst public and policy makers alike. It also suggests that the barriers to participation for older adults can be lowered by moving away from convention when designing loneliness interventions. These insights have been discussed in more detail in Chapter 10. A big question remains however, as to why invest such time and resources into tackling later life loneliness? The following section will highlight the need and timeliness of this thesis by relating this research with ongoing demographic trends that highlight the plight of the ageing population.

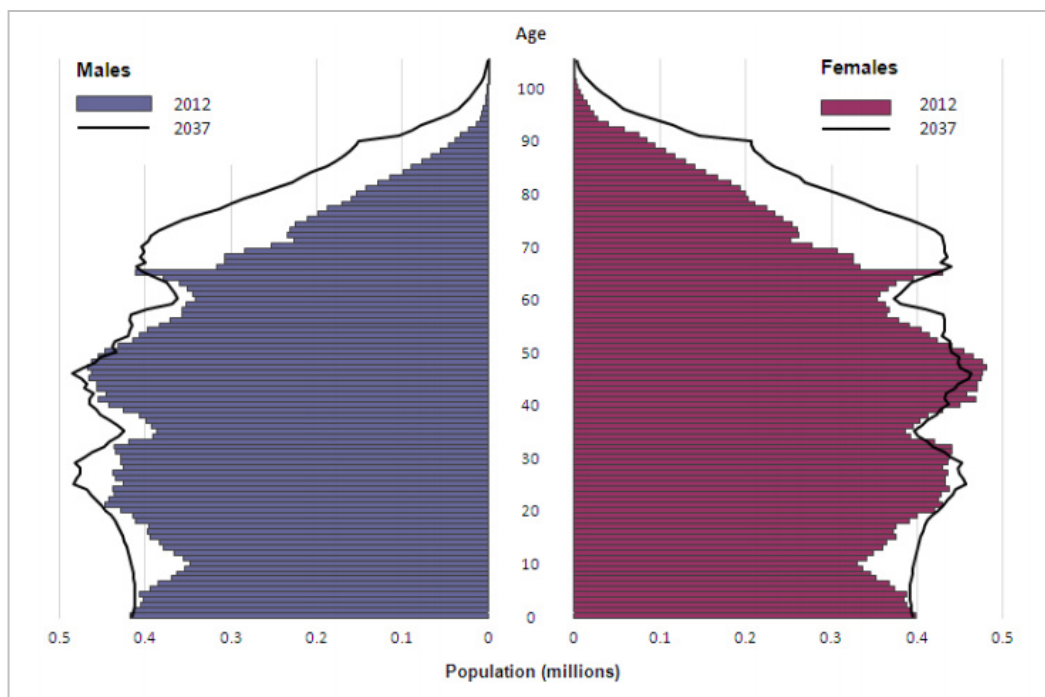
### 2.3.3 Baby Boom: feeling the ripple effect of the age wave

According to a UK government report, “Population ageing is an international phenomenon” (Rutherford, 2012 p. 6). By 2005 the world population aged 60 years or over had risen to 10 per cent as compared to a figure of 8 per cent in 1950. It is estimated to more than double in the next 40 years, reaching 22 per cent in 2050. This report also estimates that the number of people aged 60 years and over will nearly

## 2.3 Later Life Loneliness

triple in size globally, increasing from 894 million in 2010 to 2.43 billion in 2050 (Rutherford, 2012). “Population Ageing is commonly defined as the growth in the proportion of population that is above a particular age. The age chosen to demarcate the older population often is related to institutions within a society” (Martin, 2011 p. 33). In line with the global trend, the UK’s overall population is estimated to reach 73 million people by 2037 and according to an ONS (Office for National Statistics) report, the number of people aged 80 years and over are set to double (Arnett, 2013).

Recent figures published by the ONS also highlight current demographic trends that indicate that population in the UK is ageing (2012). ONS defines ageing as “both the increase in the average (median) age of the population as well as the increase in the number and proportion of older people in population” (2012 p. 2).



**Figure 4: Estimated and projected age structure of UK population, mid-2012 and mid-2037. Source: Office for National Statistics, UK (2012)**

Although this research work is based in the UK, it will have global implications, especially in countries that experienced high birth rates after the Second World War – the baby boom effect. People born in the two decades just after the Second World

## 2.3 Later Life Loneliness

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War are commonly referred to as “Baby Boomers”. The ‘baby boom’ is distinguished by a sudden increase in birth rates immediately after World War II and includes people born from mid-1946 to 1964 (Werner, 2011). According to UK’s Mental Health Foundation, the first batch of baby boomers are “now in, or reaching their sixties. They are moving into later life, a time often accompanied by a new range of challenges” such as reaching retirement at the time of a global economic slowdown (2013 p. 7).

According to the European Commission (EC) website, ageing is one of the biggest social and economic challenges for European societies and it will affect ‘all’ European Union (EU) countries and most policy areas (2014). It is also believed that by 2025 more than 20% of Europeans will be 65 years or over, with the number of over 80s rising rapidly in particular (Population Reference Bureau, 2006). Similarly in a recent report based on 2012 National Projections, it has been reported that between 2012 and 2050, the United States of America (USA) will experience a considerable surge in its older population (United States Census Bureau, 2011, Ortman et al., 2014). John Cacioppo, who co-authored the book ‘Loneliness: Human nature and the need for social connection’ (Cacioppo and Patrick, 2008) is a leading psychologist at the University of Chicago. He warns of an ongoing global ‘silver tsunami’ with baby boomers now reaching retirement age (Sample, 2014).

Countries like the USA, Japan, Finland, Germany, etc. have already begun to discuss the problem of loneliness and social isolation among their older adults (Nudd, 2014, Waterson, 2014, Routasalo and Pitkala, 2003, Kleinhubbert and Windmann, 2013). In light of these ongoing developments this research gains paramount importance as many of the challenges faced by the ageing population in these countries are likely to be similar – loneliness being just one of them. This is particularly important given that Baby Boomers are now reaching retirement age.

## 2.3 Later Life Loneliness

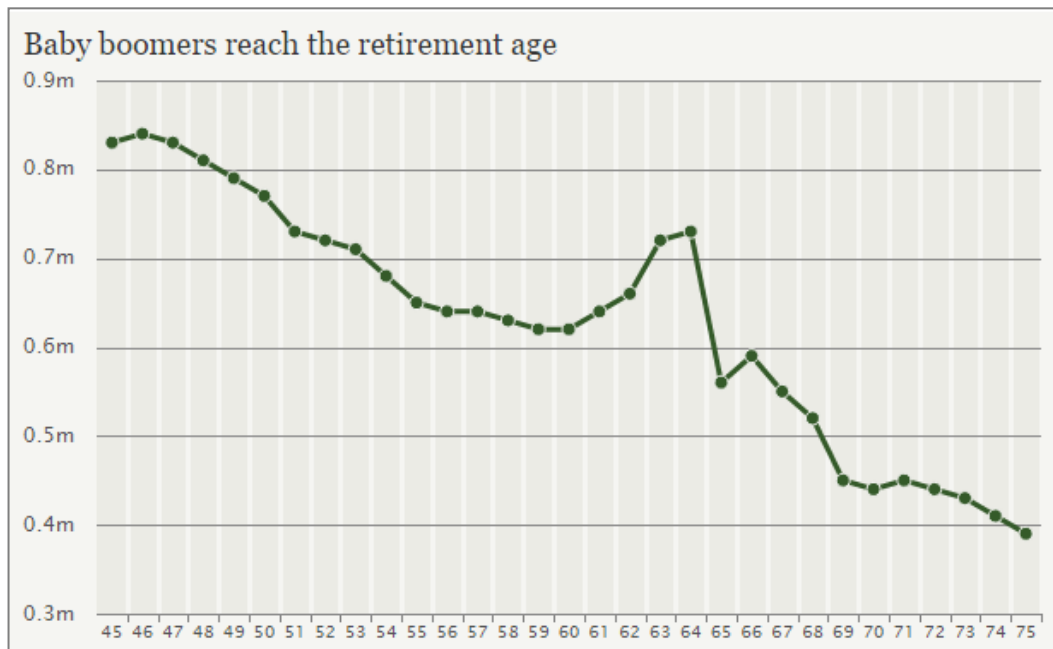


Figure 5: Population estimates for England and Wales according to 2011 Census. Source: Bingham (2012)

The first detailed analysis of returns from the 2011 census (Figure 5) showed that a record number of people turned 65, accounting for a 30 per cent increase over the previous year (Bingham, 2012). These phenomena are likely to exert unprecedented pressure on families, communities and governments as predicted by Dychtwald and Flower in their 'Age Wave' (1989) theory of the baby boomers. They predicted a massive population as well as a cultural shift caused by the converging demographic forces of the baby boom, increasing life expectancy and declining fertility rates thereby resulting in a record number of older adults living in the USA. This, they said, is inevitably going to exert pressure on resources and it is essential to start preparing for this in advance.

Apart from discussing the baby boomers in numbers, it is also important to briefly reflect on some distinctive characteristics of baby boomers in order to fully understand the context of this demographic trend. Baby boomers are unique in the sense that they have historically been at the forefront of social change not just experiencing, but initiating it as well (Huber and Skidmore, 2003). Arthur Marwick (1998) provides a glimpse into their *active life* while growing up in the 'Sixties'

## 2.3 Later Life Loneliness

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*counterculture* of Britain, France, Italy and the United States of America. Key points that demarcate and define the times of their youth have been described by him as follows:

- Youth culture and trendsetting by young people.
- Black civil rights.
- Mass protests and student activism.
- Beginnings of contemporary environmentalism.
- Criticisms of technocratic society.
- Triumph of popular music based on Afro-American models.
- Challenges to Enlightenment rationality.
- Serious appreciation of mass culture and blending of elite and popular culture.
- Feminism and gay liberation.
- Drug culture and ‘dropping out’.

It is a reasonable assumption that these experiences would have directly or indirectly impacted the lives of many people who grew up in the Sixties. Having experienced such unique formative experiences in comparison to previous generations, their approach to later life is also likely to be somewhat different as compared to earlier ‘batches’ of older adults. This is evident in their demands for greater choice, in rooting out discrimination and for embracing the human rights agenda, etc. (Wanless Review Team, 2005). This also means that as a society we have no historical precedent of this sort of demographic transition. Hence our conventional knowledge, capacities, and capabilities of managing this phenomena may mean that at present, we are not fully equipped to deal with the challenges that accompany this change (Burn-Callander, 2013). Therefore, as a society, we need to explore novel ways of understanding and navigating this imminent socioeconomic change. “What has been missing from the ageing debate so far (at least in the UK) is any serious interrogation of the values and attitudes that the baby boomers will bring to the table. The question of whether this generation will be willing to enrol in the progressive



transformation of our society, or whether it just wants to be left alone to enjoy its retirement, will fundamentally determine the collective outcomes of societal ageing. Yet for now, this is a question that we seem curiously ill-equipped to answer” (Huber and Skidmore, 2003 p. 12).

A focus on social inclusion and social engagement constitutes a key element of our current thinking on the promotion of quality of life in old age (Victor et al., 2005a p. 63). Therefore, it is very important for researchers and designers to understand loneliness and social isolation in detail in order to imagine possible solutions aimed at promoting social inclusion, participation, and engagement. Being able to measure the impact of efforts made towards reducing loneliness experienced by older adults is therefore a key aspect of working in this area. The following section presents a review of various ways in which loneliness is measured.

## 2.4 Measuring Loneliness

The first step towards understanding a problem is being able to identify it. Understanding issues such as loneliness and social isolation can be difficult because they are *constructs* and therefore one has to devise ways of successfully determining their extent. As Russel et al. point out, ‘a major hindrance’ in empirical research on loneliness “is that loneliness, unlike aggression, competition, and crowding, cannot be readily manipulated by researchers. Thus, the crucial task for investigators is not the development of an experimental paradigm to produce loneliness in differing degrees under controlled conditions but rather the development of instruments to detect variations in loneliness that occur in everyday life” (1980 p. 472). Though researchers have developed several strategies to overcome this challenge, there are many other aspects of loneliness that make it extremely challenging to recognise as well as to measure. For instance, the term ‘loneliness’ itself is believed to have negative social connotations (Crocker and Major, 1989) and researchers have also established loneliness as a key emotional factor that facilitates suicide attempts and parasuicide (Bancroft et al., 1976, Stravynski and Boyer, 2001). Therefore, loneliness’ association

## 2.4 Measuring Loneliness

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with depressive conditions only further contributes to the stigma attached to it, making it even more difficult to detect. This is because researchers mostly rely on self-reported methods to measure subjective feelings and this perceived social stigma can potentially prevent someone who associates with being lonely, from making such a *declaration*.

As discussed previously (Section 2.2.1), while loneliness is understood to be a subjective feeling, social isolation is deemed to be more objective in nature (Peplau, 1982, Andersson, 1998, Dykstra, 2009). The conceptual differences in both these occurrences results in two distinct approaches in measuring them. Social isolation is usually measured by quantitative objective measures of one's social network such as number of friends/family members, frequency of contact and marital status, etc. (Cornwell and Waite, 2009). On the other hand, the measurement of loneliness most often involves *subjective* evaluation of the objective social circumstances (Hughes et al., 2004). Measuring loneliness is important to be able to assess and evaluate the success or failure of an effort made to tackle loneliness. Without proper tools to measure loneliness, local authorities or other relevant service providers can not identify someone who might benefit from help to overcome the difficulties posed by loneliness (Bernard and Perry, 2013). There are two commonly used approaches to measuring loneliness: self-reported measures and the development of scales or aggregate measures (Wenger, 1983). Shiovitz-Evra and Ayalon refer to these as the direct and the indirect method respectively (2012).

### 2.4.1 The direct method

The direct method or self-reported measure relies on single self-labelling item (Figure 6) that asks directly whether a person has felt lonely or experienced loneliness in general or within a specific time frame, such as during the previous month or week (Marangoni and Ickes, 1989). "Cognitive theories of loneliness, based upon personal assumptions, such as the discrepancy between desired and available relationships, giving rise to maladaptive patterns of thinking which can generate feelings of loneliness, underpin the self-rating scales approach to measurement" (Victor et al., 2005a). According to Victor et al., this approach looks at loneliness as a

## 2.4 Measuring Loneliness

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‘unidimensional’ concept and presumes that the primary variation between individuals is in the intensity of the experience. They also opine that these direct measures are simple to use (2005a).

The direct approach has been used substantially in measuring loneliness – especially in epidemiological studies (Shiovitz-Ezra and Ayalon, 2012). However, subsequent research has revealed several shortcomings in using the direct approach. As suggested earlier within this chapter, prior research has revealed that there is a ‘social stigma’ (Crocker and Major, 1989) around lonely people. Because their perception in society may be of being weak, passive and less attractive, they achieve less social acceptance as compared to someone who is categorised as being *not lonely* (Lau and Gruen, 1992, Rotenberg, 1998). Therefore there is a lack of willingness of respondents to associate themselves with loneliness (Victor et al., 2005b). Hence direct questions only generate a publicly acceptable (socially desirable) response (Victor et al., 2005a).

This is an important factor that can contribute to skewing research data in a way that underestimates the actual number of people experiencing loneliness. Research demonstrates that a large number of respondents who are classified as being lonely on the direct scale are reported as not being lonely on the indirect scale (Shiovitz-Ezra and Ayalon, 2012) which has been described in the following section. Also, Marangoni and Ickes have suggested that single-item measures have ‘reliability’ problems and that sometimes respondents may be ‘unaware’ of loneliness. Hence they may not be able to consciously recognise or verbalise their feeling of loneliness as such (1989). Though the direct method has been found to adapt better to the oldest age group, it does not highlight information on the amount, nature, value or meaning of loneliness. It also lacks in providing any useful insight into the causes and consequences of loneliness (Fees et al., 1999).

## 2.4 Measuring Loneliness

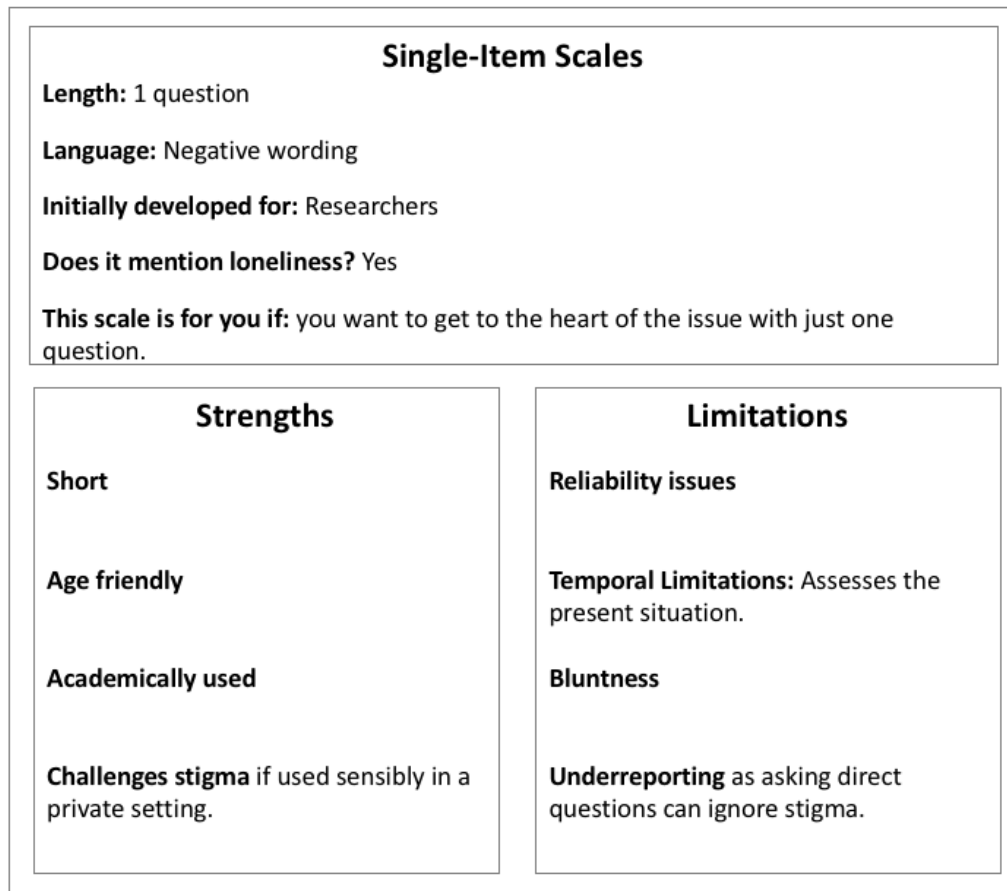


Figure 6: Key features of single-item scales. Source: Adapted from Campaign to End Loneliness (2014)

### 2.4.2 The indirect method

The indirect methods for measuring loneliness on the other hand, utilise multiple-item scales that do not explicitly use the word 'loneliness' (Shiovitz-Ezra and Ayalon, 2012). Two of the most popular and widely used measures of loneliness are included in this category namely, the Revised University of California, Los Angeles Loneliness Scale or R-UCLA Loneliness Scale (Russel et al., 1980) and the De Jong Gierveld Loneliness Scale (de Jong-Gierveld and Kamphuls, 1985).

The R-UCLA is a '20-item Likert Scale' (Victor et al., 2005a) and is one of the most well-known and widely used scales of measuring loneliness that has been used extensively in the United States (Steptoe et al., 2004, Hawkey et al., 2006, Hawkey et

## 2.4 Measuring Loneliness

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al., 2010, Cacioppo et al., 2010, VanderWeele et al., 2011). It is also a self-reported one-dimensional approach where respondents are asked to rate how often they experience certain feelings that implicitly capture loneliness or social isolation (for example, '*How often do you feel left out?*'). Respondents record their responses on a 4-point scale (Likert-type) ranging from 1 (*never*) to 4 (*often*) to be analysed by researchers later (Victor et al., 2005a). The R-UCLA was proven to have good psychometric properties and several shortened versions of this scale are used in social surveys, with the shortest one comprising only three items (Hughes et al., 2004).

The De Jong Gierveld scale (Figure 7) was developed for use with older people (Victor et al., 2005a) and it meets the criteria for the Rasch measurement model which is a psychometric model widely used for analysing survey responses (Rasch, 1993). It has both positive and negative dimensions and is based on the de Jong Gierveld proposition (1998) that "loneliness can be perceived as a multidimensional phenomenon comprising three distinct dimensions; a deprivation component that relates to the loss of an intimate attachment; a temporal perspective, raising the question of the extent to which the state of being lonely might be prone to change; and a range of emotional aspects of loneliness, such as sadness, guilt, frustration and desperation" (Victor et al., 2005a p. 64-65). This scale comprises 11 self-reported items on a two-dimensional scale (Shiovitz-Ezra and Ayalon, 2012) and is widely used in Europe (Tijhuis et al., 1999, Van Baarsen et al., 2001, Dykstra and de Jong Gierveld, 2004). 6 of the 11 items of this scale, such as "*I often feel rejected*," indicate *emotional loneliness* while the remaining 5 (for example, "*I can call on my friends whenever I need them*") help in identifying *social isolation* (Weiss, 1973). A shortened version of this scale comprising 6-items was found to be reliable and valid for research (de Jong Gierveld and Van Tilburg, 2006).

## 2.4 Measuring Loneliness

De Jong Gierveld Loneliness Scale	
<b>Length:</b> 6 questions	
<b>Language:</b> Mixes positive and negative wording	
<b>Initially developed for:</b> Researchers	
<b>Does it mention loneliness?</b> No	
<b>This scale is for you if:</b> you want an academically rigorous tool that distinguishes between different causes of loneliness.	
Strengths	Limitations
Different types of loneliness	Length
Designed for older people	Tricky questions on a tricky subject
Extensively used and tested	
Avoids automatic answers	

Figure 7: Key features of De Jong Gierveld scale. Source: Adapted from Campaign to End Loneliness (2014)

Because of its potential negative impact on both physical and mental wellbeing, it is important to evaluate whether the way loneliness is measured affects the results obtained and how different methods classify individuals as either being lonely or not lonely. To this end, Shiovitz-Ezra and Ayalon evaluated different direct and indirect measures of loneliness and concluded that, “different measures of loneliness provide a somewhat different picture of both the prevalence of loneliness and the characteristics of the people who suffer from it” (2012 p. 586). This reflects a need to develop a more reliable and consistent method of measuring loneliness that can be reconfigured according to research foci such as loneliness experienced by older adults, cultural differences, etc.

In addition to direct and indirect questions administered in the form of surveys and measured through scales, other approaches such as qualitative methods can also be used to collect information on loneliness. While scales are a good way of assigning numerical values to abstract constructs, these qualitative approaches can allow for a more in-depth exploration of the causes of loneliness by asking *how* and *why* questions (Campaign to End Loneliness, 2014b). Such methods are useful in demonstrating impact by stitching together a narrative of how an intervention made a difference to loneliness.

## 2.5 Discussion

According to an online article on *The Economist Newspaper* website, “Most people understand about the ageing of society in the abstract. But few have grasped either the size of the tsunami or the extent of its consequences” (2010). This chapter discusses the socioeconomic challenges that are likely to accompany the ‘silver tsunami of loneliness’, and overall, this thesis represents an attempt to manage this *seismic* shift. To extend the geological metaphor further, this chapter traces the epicentre of the tectonic (demographic) shift in the 1960s, raises an alarm about the approaching (silver) tsunami, highlights areas that might be affected by it, and points at different routes that can be used to minimise the damage it is likely to cause.

At the start, this chapter painted a holistic picture of the landscape of loneliness by reviewing a rich palette of theories that aim to explain its occurrence. This revealed that loneliness can emerge from within an individual, his or her interaction with their environment, or a blend of both. This chapter also clarified that although loneliness is a negative feeling, some degree of loneliness is vital for a society’s overall functioning as it provides the necessary independence to its members (Ferreira-Alves et al., 2014). It is important however, for loneliness to be moderated as chronic loneliness can have deleterious effects on one’s general health and wellbeing especially in older adults.

## 2.5 Discussion

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This chapter also traced the association of older age with loneliness and reviewed psychosocial theories of ageing to glean out potential factors that can trigger loneliness in the later years of life. For instance, in some cases, loneliness might be triggered by a change in circumstances or personal characteristics such as bereavement, emigration, lack of infrastructure, etc., while in others it could be instigated by something as simple as an emotional memory (Mackler, 2009). This chapter also discussed how the act of providing care for someone else can trigger loneliness amongst informal carers (Long et al., 2017), but it is important to highlight that loneliness experienced by formal or informal carers is not a part of this thesis' scope. Although, the varied causes of loneliness are believed to add further complexity to investigating this multifaceted research problem, these triggers can offer vital sites for deploying interventions aimed at mitigating loneliness.

The timeliness of this work was demonstrated in this chapter via a discussion on demographic trends that highlight the unprecedented nature of the population ageing phenomenon. By pointing out that the current *set* of retiring populations is unique in the sense that they have had very different formative experiences having grown up in the post-war 1960's counterculture, this chapter also highlighted that our conventional strategies of meeting their needs and demands might not be suitable. This chapter also discussed various approaches adopted and adapted by researchers to measure loneliness. It highlighted that because loneliness is a subjective feeling and a state of mind, it is difficult to measure.

This review of literature covering various aspects of later life loneliness, highlighted several problems associated with it – ranging from the difficulty in identifying later life loneliness, to establishing causal factors, or even finding suitable ways of measuring it. This thesis aims to move the discussion around later life loneliness beyond the problem areas, into the *solution space*. In line with Dychtwald's philosophy summarised by Adams as, "It's not news that the population is aging, but it's generally seen as a grim problem and a costly burden. Dychtwald, himself a boomer at 61, views it as a huge opportunity. The later years are becoming a time for reinvention, experimentation and consumption" (2011), this research aims to concentrate on the opportunities presented by this phenomenon. It is important to



## 2.5 Discussion

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highlight at this stage that this thesis does not, by any measure, allude to the idea that ‘the elderly’, ‘older adults’ or ‘baby boomers’, etc. can be treated as a uniform set. On the contrary, this is a sincere effort to challenge such notions. In fact this research acknowledges the diversity within this very broad group and emphasises that one of the key problems in alleviating social isolation and loneliness among older adults has been the tendency of many services to treat older people as a homogenous group (Cattan et al., 2003). Similarly, there is no single reason or causal factor for loneliness and it can affect people from different age groups, cultural backgrounds, nationalities, etc. By the same token, there can be no ‘silver bullet’ solution to this problem and it is through further research and experimentation that we can begin to explore the various possibilities.

This thesis positions itself as a contribution to the knowledge around developing interventions or possible solutions aimed at mitigating loneliness experienced by older adults. While this chapter represents how loneliness has been framed, and understood as a research problem, an extended exploration of how we have attempted to address loneliness experienced by older adults can help intervention designers identify key areas of opportunity. The following chapter presents a mapping of the research space regarding existing strategies for tackling later life loneliness.

# Chapter 3. Mapping the Research Space

*"I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail"*

- (Maslow, 1966)



### 3.1 Overview

Having looked at the perceived causes, triggers and socioeconomic impact of later life loneliness in the previous chapter, it is also important to understand how we, as a society, are currently coping with this problem. This chapter serves as an extension to the review of literature and examines recent endeavours to mitigate loneliness experienced by older adults. This will help to identify gaps in research and highlight areas of opportunity that warrant further exploration. This chapter opens by discussing the need to study loneliness interventions and the coding method that was developed and utilised to conduct a preliminary review of existing loneliness interventions for older adults. Later in the chapter, it is demonstrated how these interventions were analysed and a discussion of the preliminary findings that suggest that there is a lack of radical-digital loneliness interventions, are presented. The chapter concludes by positioning this gap as being worthy of further research and by arguing for a need to experiment more in this area in order to fully understand the meaning, and possible implications of radical-digital loneliness interventions. A framework called Social Innovation for Active Ageing (SIFAA), described within, is proposed to aid the development of such radical-digital interventions.

### 3.2 Loneliness Interventions: Review and coding

The interest in loneliness interventions emanates from the notion that “loneliness is not an immutable trait but rather can be exacerbated or ameliorated by social interactions” (Masi et al., 2011). The idea behind loneliness interventions is to ensure a balance between the actual and the desired levels of social contact. Thus loneliness interventions have been designed to either prevent loneliness, provide support to those who suffer from it, or as remedial services (Windle et al., 2011). Masi et al. highlight the economic rationale for our *investment* in loneliness interventions.

### 3.2 Loneliness Interventions: Review and coding

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They suggest that loneliness interventions are an effective way of reducing the high costs of managing problems associated with loneliness (2011).

As a society, our strategies to tackle loneliness can be psychosocial or pharmacological. For instance, it can be argued that because the indicators of loneliness are very similar to those of depression (Stuart-Hamilton, 2012, O'Connor, 2014), the treatment prescribed for both of them can be similar too. Cacioppo et al. (2006) describe depression as an outcome of loneliness, whereas Burholt and Scharf (2014) argue that because loneliness is a subjective feeling, depressive symptoms interfere with one's judgement of their desired level of social contact. This means that depression can have a moderating effect on loneliness. Owing to their close association, symptoms of loneliness as well as depression are either treated pharmacologically using antidepressants or other medication, or by relying on non-medical methods such as through network interventions aimed at enhancing social contact. This research focussed on such non-pharmacological approaches i.e. interventions that have been developed to regulate loneliness.

As humans our 'social network' (social support network, informal support system), i.e. our family, friends, relatives, neighbours, co-workers, etc. often provide the necessary help and support to us, whenever we require it (Andersson, 1998, Long et al., 2017). Such help and support can assume different forms such as financial help, psychosocial support, or emotional care. When it comes to psychosocial support, in some circumstances, people may require formal or professional care from physicians, teachers, clergy, etc. or in some 'western cultures', similar help and support might even be provided by bartenders or beauticians (Eddy et al., 1970). Apart from working with their *clients* in a variety of therapeutic manners, professionals can also act as facilitators looking to enrich and enhance contact between individuals affected by loneliness and their social networks by developing necessary interventions (Andersson, 1998).

Auslander and Litwin highlight the lack of a common conception as to what constitutes a network intervention. They define it as a "planned activity by a professional that aims to influence (i.e., to strengthen, modify, or redirect) the functioning of an existing informal network or to bring about the creation of a social

## 3.2 Loneliness Interventions: Review and coding

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network where one did not previously exist due to absence or inaccessibility” (1987 p. 310). Although Auslander and Litwin’s definition deals with the more important issue of nurturing social connections, it places ‘the professional’ at the heart of such genesis. Therefore, this definition emphasises the all-important role of an ‘expert’, the designer of the intervention.

Drawing inspiration from Eddy et al.’s inclusion of beauticians and bartenders into the gamut of professionals in providing psychosocial support, it can be argued that a more open-ended view of defining ‘a professional’ should be taken. For instance, one might become an expert (or a professional) in the area through the practise of caring for someone informally, or by trialling an idea out and gaining expertise as they go along. For example, Stuart Arnott, the founder of a loneliness intervention called *Mindings* suggests that he had developed the service to meet his personal need of keeping in touch with his family via the Internet, but over time he made a profession out of it as there were many others who could benefit from his creation (2015). Thus, the ‘need’ to address a problem can encourage creative thinking, and consequently innovation.

### 3.2.1 Innovation and design

This section presents a discussion of why is it important to think innovatively about mitigating loneliness experienced by older adults, and how design thinking can aid the process of such social innovation? By highlighting scenarios that require innovation, this section argues that the present demographic and socioeconomic environment calls for thinking creatively about managing the global ageing phenomena. It also discusses how innovative loneliness interventions can not only be designed by experts, but also by non-professional designers.

Crossan and Apaydin’s definition of innovation focusses on thinking creatively, both in terms of the process (methodology), and the outcome (designing loneliness interventions). They suggest that innovation represents the “production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is

### 3.2 Loneliness Interventions: Review and coding

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both a process and an outcome” (2010). Sandbach suggests that innovation involves “matching what’s possible, with what’s needed, to create *economic* value” (2015). Although this definition might appear to exclude the more social forms of innovation, it successfully communicates the notion that innovation is a response to a current need or ‘a real challenge’ (Skillicorn, 2016). Framing, exploring and addressing such socioeconomic needs requires novelty in thought and action alike, while at the same time ensuring that some form of value or meaning – either economic, or social, or both, is created in the process for all the stakeholders. The need to innovate can therefore manifest in three different ways briefly discussed below:

- Necessity: When all other means of addressing a given challenge fail, innovation becomes a requirement. Another way of understanding this could be by revisiting the adage, ‘Necessity is the mother of invention’. According to some anthropologists, invention is the first step in the process of innovation (Godin, 2008), and that it is the diffusion of an invention that drives innovation. Therefore, just like invention, innovation can also claim lineage from necessity.
- Lack of resources: The lack of resources can render someone ill-equipped to deal with challenging situations. In the face of such an adversity, the need to innovate is at its peak. A shortage of means can activate the creative faculties of our intellect and make us see, and use things differently. This forced shift in perspective can often lead to innovative solutions to a given problem.
- Accessing opportunities: Another possible reason for innovating emanates from the idea that the world is full of opportunities. While we are aware of some of them and constantly work towards accessing them, some of these opportunities are latent and for us to be able to access them, we need to think creatively and innovatively.

This thesis argues that we are currently facing ‘a real challenge’ represented by the global ageing phenomenon (0), and our traditional ways of thinking and doing

### 3.2 Loneliness Interventions: Review and coding

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things are likely to be insufficient in handling it. Therefore, we *need* to innovate if we are to successfully equip ourselves as a society in handling this extraordinary demographic and socioeconomic change. This thesis deals with a very specific problem that global ageing is likely to thrust upon us, i.e. loneliness experienced by older adults. Any attempt that successfully addresses this problem in full or in part, will free up valuable resources that can be deployed in managing other age-related problems. These solutions can be an outcome of both expertise, or just general experience.

In his book ‘When everybody designs’, Manzini suggests that there are two poles of design, “*Diffuse design* and *expert design*, where *diffuse design* is put into play by ‘nonexperts’, with their natural designing capacity, while *design experts* are people trained to operate professionally as designers, and who put themselves forward as design professionals” (Manzini, 2015 p. 37). He argues that social innovation can initiate at the expert level or at community level and that an expert designer’s role can be in supporting, rather than creating or planning community initiatives. Similarly, Brown argues that ‘design thinking’ is not limited to designers, and that people can harness their innate creative capacities to solve complex problems (2009).

“Design thinking is a human-centered approach to innovation that draws from the designer’s toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success” (Brown, 2018). Put simply, design thinking is a problem-solving endeavour, “a process—applicable to all walks of life—of creating new and innovative ideas” by harnessing empathy, and embracing experimentation (Turnali, 2015). Although the number of stages involved in design thinking can vary (Dam and Yu, 2017), it essentially deploys the core human cognitive-behavioural processes of *deciding*, *acting*, and *learning* to solve a problem (Aragon and Garcia, 2017). Drawing on pragmatism, design knowledge is geared towards action, and is normative and synthetic in nature (Romme, 2003). Design thinkers “do not completely objectively identify what the process will create but rather paint a picture of where the answer might lie” (2006 p. 5). Therefore, design thinking may not always yield solutions to given problems, but rather point out at a broader ‘solution space’ (van Langen, 2002). Similarly, design also allows for an



### 3.2 Loneliness Interventions: Review and coding

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exploration, and appraisal of the *existing* solution space or research space, such that gaps in design knowledge that require further research, can be identified.

Therefore, this thesis maps how experts as well as non-professionals design innovative solutions in response to the real-world challenge of loneliness experienced by older adults. It uses design thinking to critique, act upon, and evaluate loneliness interventions developed for an ageing population.

During this study, a preliminary review of interventions aimed at tackling loneliness experienced by older adults was carried out to identify a gap for further design research (Section 3.2.2). In this preliminary review of interventions, all forms of loneliness interventions developed for older adults, irrespective of whether they were designed by a professional with prior formal experience of working in the area or not, were considered. For an early exploration of loneliness interventions aimed at older adults, it was decided to critically analyse them using a design lens, wherein a pattern-analysis approach was used to categorise loneliness interventions into distinct categories (Section 3.2.2). This examination was conducted with a view to understand popular psychosocial approaches to tackling later life loneliness and to identify a gap in research worth further exploration, and at the same time recognise any design patterns amongst interventions that appear to be more innovative.

#### 3.2.2 Identifying the gap for further design research

In their review, Windle et al. point out, “Just as the range of wellbeing services is extensive, so too is the available literature examining how well they work” (2011 p. 2). The review of services (loneliness interventions) carried out for this thesis, was not aimed at understanding how successful they are in alleviating or moderating loneliness. Instead, the efforts were directed at gathering an early understanding of different types of loneliness interventions and to map the similarities and differences in our current attempts to solving the problem.

The purpose of this initial study was to inform an appraisal of loneliness interventions, rather than systematically identifying and classifying them. A ‘quick and dirty’ ethnographic approach (Hughes et al., 1994, Randall et al., 2007) was used

### 3.2 Loneliness Interventions: Review and coding

to identify, and examine a host of services or interventions in the subject area found on the Internet. While some interventions were found by using keywords such as 'loneliness', 'ideas', 'elderly', etc. on *Google*, others were found via the website of a national charity organisation called *Campaign To End Loneliness*. After reviewing these interventions, their key characteristics were logged onto a template. The template was specially designed using a pattern language approach (Alexander et al., 1977). Subsequently coding categories were developed and these interventions were used to refine the codes. Windle et al.'s comprehensive review of interventions to prevent loneliness and social isolation inspired coding categories based on the scope (one to one, group services, or wider community engagement), and the objective (preventative, remedial, or supportive) of the interventions (2011). Other coding categories looked to classify interventions based on their utilisation of digital technologies (digital or physical), or the level of their innovativeness (incremental or radical). The coding categories developed for this review as summarised in Table 4, have been discussed below:

Criteria	Coding Categories		
Scope of the intervention	<i>One to one</i>	<i>Group services</i>	<i>Wider community engagement</i>
Objective of the intervention	<i>Preventative</i>	<i>Supportive</i>	<i>Remedial</i>
Level of innovation	<i>Incremental</i>		<i>Radical</i>
Utilisation of digital technology	<i>Physical</i>		<i>Digital</i>

**Table 4: Classification criteria and corresponding coding categories developed for the preliminary review of loneliness interventions**

#### *Scope of the intervention*

Within codes based on the scope of the intervention, the one to one category included interventions based on befriending services, mentoring and gatekeeping. Befriending can be defined as "an intervention that introduces the client to one or more individuals, whose main aim is to provide the client with additional social support through the development of an affirming, emotion-focused relationship over

### 3.2 Loneliness Interventions: Review and coding

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time” (Mead et al., 2010). Mentoring on the other hand concentrates on achieving agreed individual goals. A social relationship if achieved is incidental (Windle et al., 2011). Finally, Wayfinders or Community Navigators are usually volunteers who help ‘hard-to-reach’ people and provide them with emotional, practical and social support. They act as an interface between the community and public services to enable signposting to relevant interventions (Windle et al., 2011). On the other hand, interventions such as day centre-type services (Lunch Clubs, Arts and Crafts sessions, etc.) and social group schemes that aim to help people widen their social circles were classed as group services (Age UK, 2011). Also, programmes aimed at supporting individuals to increase their participation in existing activities (e.g. sport, use of libraries and museums) as well as to use and join outreach programmes and volunteer schemes, were classed as wider community engagement (Windle et al., 2011).

#### *Objective of the intervention*

A second set of codes was based on the objective of the interventions. They were classed as either being *preventative*, *supportive* or *remedial* based on their individual emphases on whether they prevented someone from being lonely, looked to reduce their loneliness or just provided support to the ones who felt lonely without reducing the effect of loneliness as such (Windle et al., 2011).

#### *Level of innovation*

Carpenter’s work on ‘incremental versus disruptive’ innovations informed the third category for coding (2009) alongside Manzini’s take on ‘incremental versus radical’ innovation. While talking about ‘technological innovation’, Manzini suggests that *incremental innovations* are those that reflect our existing ways of ‘thinking and doing’. Similarly those that fall outside our existing ways of ‘thinking and doing’ symbolise *radical innovation* (2014). Carpenter on the other hand suggests that incremental innovation relies on using existing technology and focussing on existing customers, whereas radical innovation involves managing new markets and cutting-

## 3.2 Loneliness Interventions: Review and coding

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edge technology. Inspired by these distinctions, interventions were coded as either being incremental or radical in their approach.

### *Utilisation of digital technology*

Interventions were coded as either being *digital* or *physical* based on older adults' level of engagement with internet-based technologies within the intervention.

The following section will discuss how these interventions were gathered, coded, and analysed.

### 3.2.3 Coding

In order to arrive at mutually exclusive categories and to assist coding, category-defining questions were developed. These have been discussed below:

#### *One to one, Community or Group Based*

Question: Does this intervention involve one-to-one interaction of personnel with the older adult?

If the answer to this question was yes, then it was considered to be either one to one or community based. If the answer however, was no, then it was considered to be either group based or community based. Two subsequent questions determined the individual coding category.

If the answer to the first question was yes, then a second question was posed as: *Does the intervention engage the wider community in any way?* If the answer to this question was yes as well, then it was labelled a community based intervention, whereas if the answer to this question was no, then it was called a one to one intervention.

If the answer to the first question was no, then the second question was posed to this subset too as: *Does the intervention engage the wider community in any way?* If the answer to this question was yes, then it was categorised as a community based intervention, otherwise it was classed as a group based intervention.

### 3.2 Loneliness Interventions: Review and coding

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#### *Preventative, Supportive or Remedial*

Question: Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?

If the answer to this question was no, then it was called a preventative service. However, if the answer to this question was yes, it was either considered a supportive or remedial strategy. A secondary question was used to differentiate between the two as: *Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?* If the answer to this question was yes, then it was considered to be a remedial one and if the answer was no then it was labelled a supportive strategy.

#### *Incremental versus Radical*

Question: Does the intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning', etc.

If the answer to the question was yes, then the intervention was categorised as representing radical innovation, otherwise it was believed to represent incremental (or business as usual) innovation.

For an intervention to be called radical, emphasis was laid on unconventional or 'out of the box' thinking. For example, if an intervention made use of latest technology to achieve standard tasks such as befriending, then it was classed as representing incremental innovation as the task could have been achieved without using that particular set of technology as well. On the other hand, if a befriending service used previously unimagined ways of identifying lonely people, it was classed as a radical innovation as it demonstrated 'out of the box' thinking.

#### *Digital versus Physical*

Question: Does the idea require older adults' direct engagement with the Internet or Internet-based technology?

### 3.2 Loneliness Interventions: Review and coding

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If the answer to the question was yes, then the intervention was called digital, otherwise it was classed as a physical intervention.

It is important to note here that the 'direct engagement with the internet' was crucial for an intervention to be classed as digital. For example, if an intervention required older participants to use their smartphone to make a phone-call, the intervention would be classed as being a physical one. This is because they did not use their phone to access the Internet. Thus, even though they interacted with an information communication technology (ICT), because they did not 'directly engage with the internet', the intervention was classed as being a physical one.

The interventions found using the quick and dirty 'online ethnography' (Berg and Lune, 2004) initially were used to develop and refine coding. Once the codes were established, interventions enlisted on the *Campaign to End Loneliness* website's examples section (2014) were reviewed and logged onto the template. Coding was then completed for all of the 24 interventions discussed on the website.

### 3.2 Loneliness Interventions: Review and coding

	Name of the Intervention	Incremental	Radical	Digital	Physical	Preventative	Supportive	Remedial	One to one	Group based	Community based
ONLINE ETHNOGRAPHY	Silverline	1	0	0	1	0	0	1	1	0	0
	PARO	0	1	0	1	0	1	0	1	0	0
	Building Bridges	1	0	1	0	0	0	1	0	1	0
	Good Gym	0	1	0	1	1	0	0	0	0	1
	Mindings	1	0	1	0	1	0	0	1	0	0
	Seniornet	1	0	1	0	1	0	0	0	1	0
	Speaking Exchange	0	1	1	0	1	0	0	1	0	0
CAMPAIGN TO END LONELINESS WEBSITE	Devon Community	1	0	0	1	0	0	1	1	0	0
	Upstream	1	0	0	1	0	0	1	0	1	0
	Psychosocial	1	0	0	1	0	1	0	0	1	0
	Nubian Life	1	0	0	1	0	1	0	0	1	0
	CWP	0	1	0	1	1	0	0	0	0	1
	SPOC	1	0	0	1	0	0	1	0	0	1
	CAVS	1	0	0	1	0	0	1	1	0	0
	Homeshare	0	1	0	1	0	0	1	1	0	0
	Older Person Partnership	1	0	1	0	0	1	0	1	0	0
	Circle	1	0	0	1	1	0	0	0	0	1
	VoP	1	0	0	1	1	0	0	0	0	1
	Springboard	1	0	0	1	0	1	0	0	0	1
	Healthy Ardwick	1	0	0	1	0	1	0	0	0	1
	HASP	1	0	0	1	0	1	0	0	0	1
	Craft Café	1	0	0	1	0	0	1	0	1	0
	Brendoncare	1	0	0	1	1	0	0	1	0	0
	Social Care Direct	1	0	0	1	0	1	0	1	0	0
	Bristol Link	1	0	0	1	1	0	0	0	0	1
	Well Aware Website	1	0	1	0	0	1	0	1	0	0
	Dorset Wayfinders	1	0	0	1	0	1	0	0	0	1
	Phone a friend	0	1	0	1	0	0	1	1	0	0
	Winter Plan	1	0	0	1	0	1	0	1	0	0
	GP Social	1	0	0	1	0	0	1	1	0	0
	NE Lincolnshire Older	0	1	0	1	0	0	1	0	0	1
TOTAL		24	7	6	25	9	11	11	14	6	11
PERCENTAGE		77.42%	22.58%	19.35%	80.65%	29.03%	35.48%	35.48%	45.16%	19.35%	35.48%

Table 5: Review of loneliness interventions. '0' and '1' denote a negative and positive response respectively.

These interventions were then coded as can be seen Table 5. Individual visualisations were created for each intervention to facilitate analysis. Each intervention was visualised as a dot on a grid. Seeking inspiration from the traffic light colours, the dots were coloured Red, Orange and Green based on whether they were Preventative, Remedial or Supportive respectively. Each colour-coded dot had a letter – O, G or C based on it being classified as One to one, Group based or Community based respectively. Individual dots were then mapped onto a grid. The location of the dot in the grid (Figure 8) was determined by the intervention being coded as digital or physical and incremental and radical. The coding process has been demonstrated below using the example of an intervention called *Good Gym*.

### 3.2 Loneliness Interventions: Review and coding

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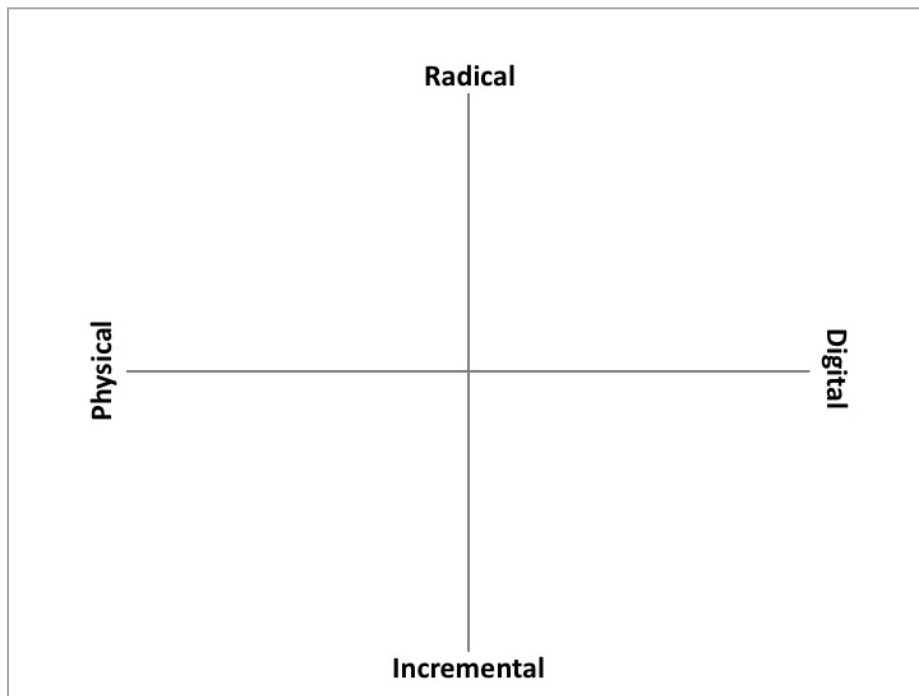


Figure 8: Grid to map loneliness interventions.

#### 3.2.4 Example Case Study: Good Gym

The idea behind Good Gym is simple – get fit by doing good! Good Gym is a platform that connects participants with physical tasks that benefit their community and keep them fit. It is a not-for-profit organisation founded in 2009 by Ivo Gormley, who discovered that combining his weekly run with a visit to an isolated and housebound family friend was just the motivation he needed to keep him exercising; it helped that his older friend was a former boxer who could offer health and fitness related tips (Barkham, 2012)

Good Gym encourages people to exercise by providing motivation in the form of social care. It matches busy workers with older ‘coaches’, who can get help with day-to-day chores such as fetching daily paper, fixing a light bulb or getting groceries. It also offers group runs where runners work together on community tasks such as distributing flyers, cleaning community parks and clubs, etc. One of the most unique things about the Good Gym is that it targets both keen runners/helpers as well as older adults who experience loneliness via a platform that ‘engages multiple



### 3.2 Loneliness Interventions: Review and coding

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meanings' (Sengers and Gaver, 2006). The organisation's founder, Ivo Gormley, explains "Good Gym makes people feel good about who they are, it makes it easy to do good, and helps older people who wouldn't otherwise see anyone" (Marsh, 2014b). Good Gym sends notifications to runners via emails, text messages, etc. to notify them when a particular task needs to be completed.

After reviewing literature available on Good Gym, it was logged using the pattern analysis template (see Appendix). Coding questions were then used to categorise and visualise the intervention as can be seen below. Table 6 shows how coding questions were used to categorise Good Gym as a community-based, preventative, radical, and physical intervention<sup>7</sup>. Figure 9 shows the resultant characteristic visualisation that was created for Good Gym.

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<sup>7</sup> Text in **red** colour (Yes / No responses) denotes the answers to each coding question, and text in yellow background represent the coding categories assigned to the intervention depending on the scope, objective, level of innovation, and utilisation of digital technology.

### 3.2 Loneliness Interventions: Review and coding

1	Does this intervention involve one to one interaction of personnel with the older adult?			
	Yes		No	
	One to one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One to one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.?			
	Yes		No	
	Radical		Digital	
4	Does the idea require old adult's direct engagement with the Internet, or Internet-based technology?			
	Yes		No	
	Digital		Physical	

Table 6: Answering coding questions for Good Gym

## 3.2 Loneliness Interventions: Review and coding

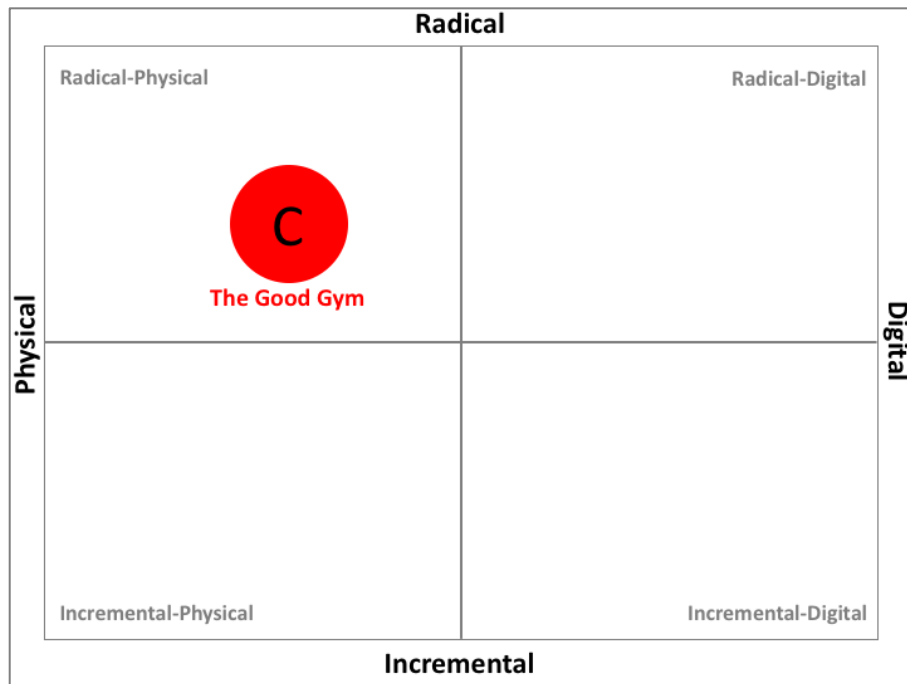


Figure 9: Visualising Good Gym. The letter 'C' denotes that it is a community wide intervention. The red coloured dot shows that Good Gym is a preventative intervention.

### 3.2.5 Further examples

Section 3.2.4 has already discussed 'Good Gym' as an example from the radical-physical category. A quick discussion of examples from other quadrants will help elucidate the similarities and differences between their approaches.

*Dorset Wayfinders* has been classed as an incremental-physical intervention. It is a community-based service that provides signposting and support to older people by offering information to promote their healthy and independent living. Similarly, the *Well Aware* website also provides related information but on an online platform. Hence it is categorised as an incremental-digital intervention. Finally, *Speaking Exchange* is a service that connects older people living in a care-home in the USA to young students in Brazil using *Skype*. It aims to improve these Brazilian Students' English-speaking skills while addressing loneliness among the older participants at the same time. Because of its unique approach to addressing loneliness using digital technologies, it is a good example of a radical-digital intervention.

### 3.2 Loneliness Interventions: Review and coding

Using this method, all 31 interventions were logged onto the template, coded using the questions and then they were visualised individually to arrive at a characteristic visualisation for each intervention. Once all the interventions were logged individually, they were transferred onto a single grid as shown below (Figure 10):

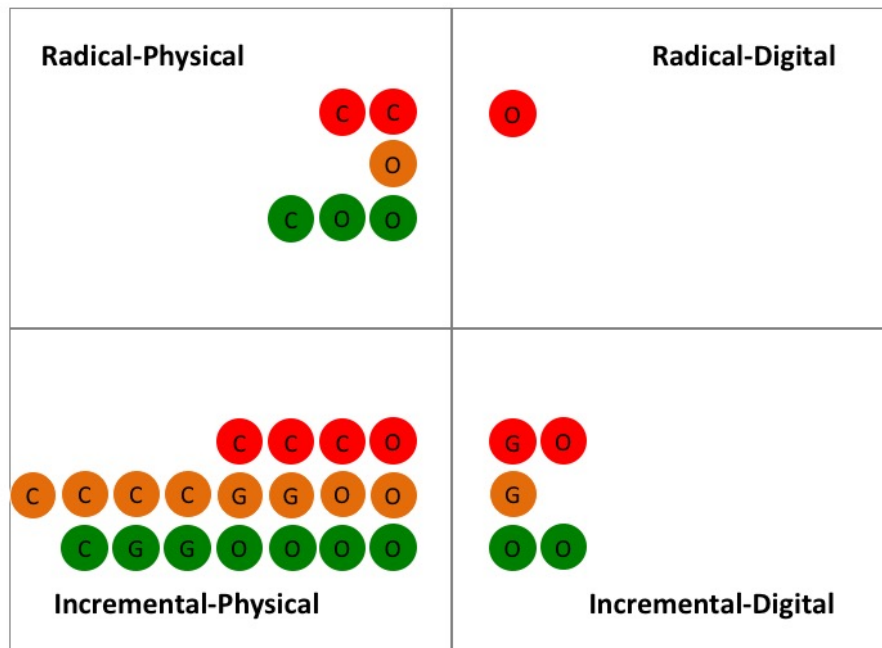


Figure 10: Mapping all loneliness interventions onto a single grid.

#### 3.2.6 Preliminary Results and Discussion

A visual scan of the overall map suggests that there is a clear discrepancy between incremental and radical as well as digital versus physical interventions. The results indicate that majority of the interventions fall under the incremental-physical quadrant with just one of them classed as representing the radical-digital type.

It can be seen that nearly 77% of all these interventions reviewed represent an incremental approach to addressing the problem. The majority of the interventions were categorised as remedial or supportive, and just 19% of the studied interventions were found to be digital in nature. Also, nearly 45% of the services were one-to-one,

### 3.2 Loneliness Interventions: Review and coding

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and group services only accounted for 6% of the total. Additionally, only 3% of the interventions were both radical as well as digital, represented by a single one-to-one, preventative service.

Upon a closer examination of the interventions reviewed, it was also found that most of the interventions classed as 'radical', provided their older clients something more than *someone to speak with* or the *information* they may require. With the exception of PARO, a robotic seal that brings the known benefits of animal therapy to elderly care (Sabanovic et al., 2013), all the other radical interventions that were reviewed appeared to treat the older adults as *providers* rather than as *recipients* (of help, support, services, etc.) alone. For example, the older adults have a crucial role to play in the Good Gym intervention (see section 3.2.4.). They *provide* the necessary motivation for keen runners to stay committed to running. Similarly, in 'Speaking Exchange', their role is not of a service *user* alone but it is one that entails offering support to help non-native English speakers brush up their English-speaking skills. 'Homeshare' is another great example where by giving someone a house to live-in, older people contribute to others' wellbeing while being cared for simultaneously (Butler, 2012).

Thus, it is not just 'someone to speak with' that these radical interventions have to offer to older people. What these interventions actually provide the older adults is an opportunity to have a new role to play in society, one where they can act as solutions to someone else's problems. Therefore, by building loneliness interventions where the older person's role is not restricted to being a *user* of that service, but one where they can offer support or help to someone else, we can begin to create radical interventions and use digital technologies to operate them. This notion of keeping older adults active by facilitating their participation in mutually beneficial relationships is reminiscent of *Active Ageing* and *Social Innovation* respectively.

## 3.3 Social Innovation for Active Ageing

This section explores the relationship between activity theory of ageing (ATA) and active ageing, and suggests that active ageing provides a good platform to develop loneliness interventions for older adults. It highlights active ageing's limitations, and proposes combining active ageing with social innovation to help overcome active ageing's contextual limitations. It argues that the resultant propositional framework called Social Innovation for Active Ageing (SIFAA), can help in developing radical-digital loneliness interventions.

### 3.3.1 Extending Active Ageing

The World Health Organisation (2002) describes active ageing as, “the process of optimising opportunities for health, participation and security, in order to improve the quality of life as people get older”. Kalache suggests that health, participation, and security, along with lifelong learning, represent the four ‘pillars’ of active ageing (2012). Cipolla et al. regard the focus on these key aspects of ageing a positive way of looking at the ‘ageing process’ (2016).

Although ‘active ageing’ lacks a precise universally accepted definition (Walker, 2006), its roots can be traced back to activity theory of ageing (Walker and Maltby, 2012). Activity theory of ageing (ATA) suggests that, there are no differences between middle-aged and old people, with the exception of biological and health-related aspects (Section 2.3.1). Although, biological and health-related aspects of ageing are significant, ATA focusses on the psychosocial elements of ageing. This thesis takes the view that unlike other theories, ATA goes beyond discussing the causal factors of loneliness and provides a blueprint to successful ageing. In activity theory, successful ageing is achieved “by denying the onset of old age and by replacing those relationships, activities and roles of middle age that are lost with new ones in order to maintain activities and life satisfaction” (Walker, 2006 p. 83).

Therefore, activity theory assumes a positive relationship between a person's level of activity and life satisfaction, and increases a person's ‘self-concept’ or how

### 3.3 Social Innovation for Active Ageing

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positively one perceives himself or herself and enhances adjustment in later life (Diggs, 2007). As discussed in Section 2.3.1, the application of activity theory looks to encourage or support older adults in remaining active beyond middle age by finding suitable replacements or substitutions for these lost roles and social positions (Diggs, 2007, Schroots, 1996a). Adams et al. have demonstrated that social, leisure and productive activities have significant associations and predictive relationships with aspects of wellbeing in older adults (2011). According to them, “Although differences in definition and measurement make it difficult to draw inferences about this body of evidence, methodologically rigorous studies generally find positive associations between activity and wellbeing” (2011 p. 704). Rowe and Kahn have also emphasised the role of ‘social engagement’ in their definition of successful ageing. They define social engagement as either ‘remaining involved in activities that are meaningful and purposeful’ or ‘maintaining close relationships’ (1997), emphasising “productive and social aspects of activity for successful ageing” (Adams et al., 2011 p. 684).

Although the use of activity theory within public healthcare is widespread, it has been brought into question for neglecting personality traits and lifestyle characteristics, as well as for overlooking inequalities in health and socio-economic status on a general level (Diggs, 2007, Bengston and Putney, 2009). Also, while the application of ATA looks to substitute older adults’ lost roles by new ones (Diggs, 2007, Schroots, 1996a), McClelland argues that ATA’s *atheoretical*<sup>8</sup> attempt to predicting healthy ageing is centred around the ‘isolated individual’. According to him, “Although the activity theorist may not see the individual as literally isolated, but rather integrated into a social context, the specific nature of that social context is never spelled out” (1982 p. 724). Because ATA is fundamentally fixated on the individual as a unit of analysis, its desired ‘social’ applicability is naturally then, restricted. This thesis argues that in order to look for new roles for older adults, ATA needs to reach far and wide and look beyond individuals and their immediate social contexts. The following section positions social innovation as a notional candidate

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<sup>8</sup> McClelland suggests that ATA attempts to solve the technological problem of predicting successful adjustment to ageing as opposed to other contributions in the area that represent a ‘richer theoretical vein’ than ATA.

### 3.3 Social Innovation for Active Ageing

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that can extend ATA's reach and bring a fresh perspective into the mix to promote radically different loneliness interventions.

#### 3.3.2 Fostering social innovation

'New ideas' that help in meeting 'social goals' represent social innovation (Mulgan et al., 2007). Manzini defines social innovation as 'a process of change emerging from the creative recombination of existing assets (from social capital to historical heritage, from traditional craftsmanship to accessible advanced technology), the aim of which is to achieve socially recognised goals in a new way' (2014 p. 57). While discussing social innovation's strengths, Manzini also invokes its ability to look at problems as solutions, to someone else's problems (Social Innovation Generation, 2012). This idea is central to the proposition herein because it can provide a much-needed fresh perspective to ATA if we want to create radical interventions by finding new roles for older adults in order to ensure healthy ageing.

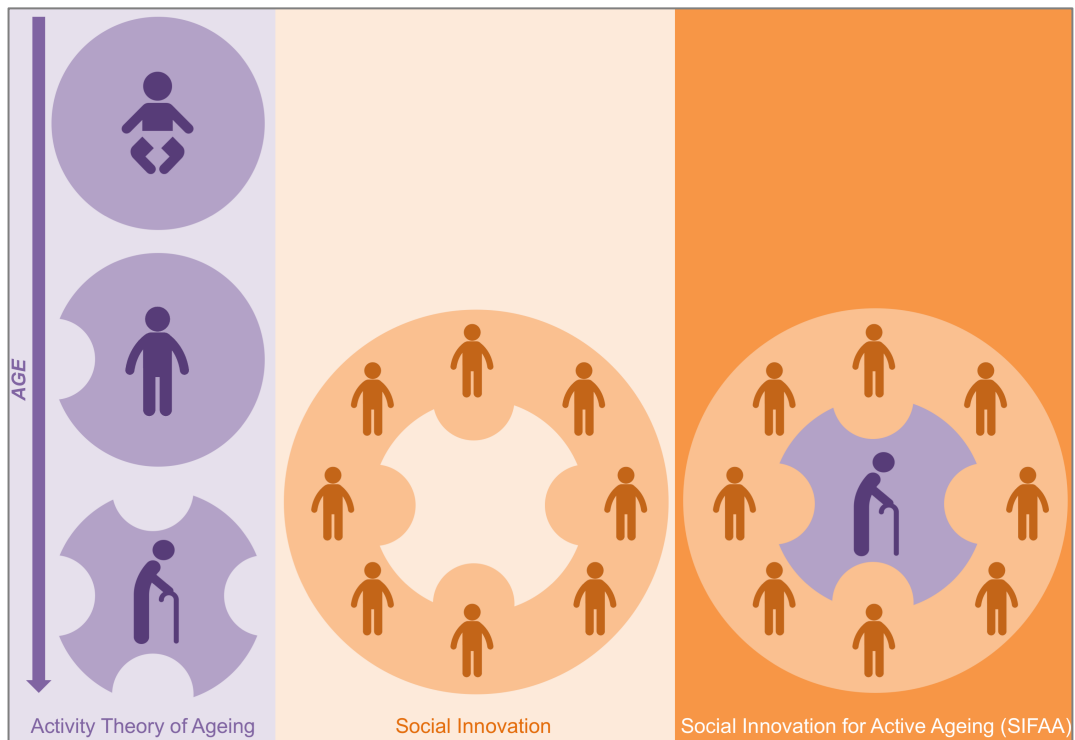
This thesis proposes the use of social innovation to help ATA broaden its scope in order to overcome its contextual limitations. It argues that social restraints of ATA can be eased by bringing social innovation into the equation, because by its very nature, social innovation focuses on fostering communal environments that are conducive to bottom-up innovation (Manzini, 2014). This shift in focus from *an individual* to *the society* can potentially encourage and involve previously unengaged participants in innovative and unimagined ways and provide ATA with a means to explore wider contexts. This consequently might increase the likelihood of finding richer, more inclusive roles, support new kinds of social mobility and provoke new grounds for older adults to actively participate in society.

Social innovation's inherent ability to 'creatively recombine' different problems such that they address each other, allows for two things that can help in developing ATA-based radical interventions for loneliness; 1. This brings in new stakeholders (previously unimagined) into the equation, thereby increasing the likelihood of finding new roles for older adults, and 2. It changes older people's position from being users or recipients of a service to being providers as well. This change in older adults' status also directly addresses ATA's call for finding suitable replacements for their



### 3.3 Social Innovation for Active Ageing

'lost' roles and is radically different from existing loneliness interventions where the older *users* are usually the recipients of various forms of help. Thus a hybridisation of activity theory and social innovation can allow for experimentation aimed at exploring the opportunities, rather than the problems, presented by this 'age wave' (Dychtwald and Flower, 1989, Adams, 2011).



**Figure 11: Replacing 'lost roles' of older adults through social innovation**

The first column in Figure 11 represents the progressive depletion of roles of an individual with increasing age, as suggested by ATA. The second column depicts the 'communal environment' fostered by social innovation where the focus is on the society and not the individual. The third column in Figure 11 suggests that the lost roles of older adults can be *suitably replaced* by focussing on the community and by enabling 'social' innovation. This approach has been named Social Innovation For Active Ageing (SIFAA), and it looks at older adults as a part of the community and concentrates on how they can offer help or support to someone in the community who

### 3.3 Social Innovation for Active Ageing

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might benefit from their skills, knowledge, and any other capabilities they may have acquired over time.

Therefore, this thesis recognises that the ‘activity theory of ageing’ provides a good foundation for developing effective strategies for tackling loneliness amongst older adults. It also proposes that combining it with ‘social innovation’ can perhaps ease its fixation on the individual as the ‘unit of analysis’. The resultant hybrid theoretical framework is called ‘Social Innovation For Active Ageing’ (SIFAA) and this research is an attempt to ascertain whether SIFAA can allow for a significant movement away from the dominant incremental approach to developing loneliness-interventions. Famous anthropologist Ralph Linton has highlighted how an individual’s ‘role’ in the society ultimately defines his / her ‘status’ (Linton, 1936). This research suggests that SIFAA can act as an enabler that looks at the ageing population as an asset or a resource, a position they’ve traditionally held in the society until recent times, of bearers of knowledge, experience and wisdom, rather than looking at them as a financial and social liability that needs to be managed. As Manzini points out:

*“...in view of the widespread problem of a growing elderly population, the question could be: ‘How can we take care of all these elderly people?’ In mature industrial societies and in the more globalized parts of emerging ones, i.e., in modernised societies, the mainstream answer is: ‘Create more dedicated professional social services.’ However, the radically innovative one is: ‘Consider the elderly not only as a problem but also as possible agents for its solution; support their capability and their will to be actively involved, and optimise use of their social networks’ (2015 p. 13).*

This thesis does not view Manzini’s comment as pitting convention against innovation, but instead encourages the inclusion of radically innovative loneliness interventions within the overall ‘solution space’. *Mainstream* ideas such as improvements to existing services, and interventions exhibiting incremental innovation can have richer legacies behind them, indicating their success in mitigating

### 3.4 Understanding the Radical-Digital

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loneliness experienced by older adults. This thesis argues that it is only through experimentation with SIFAA that we would be able to understand its strengths and limitations. Therefore, it was planned that trialling out radical-digital interventions founded on a SIFAA approach would be a first step towards exploring the potential impact of the proposed hybrid framework (Chapter 1).

SIFAA looks to mitigate loneliness and social isolation by involving older adults in symbiotic relationships with others who might benefit from this association, and as a propositional framework, it is one of the main original contributions of this thesis. This section serves as an insight into the theoretical underpinning of SIFAA, and suggests that SIFAA could potentially be used in developing more radical-digital loneliness interventions.

## 3.4 Understanding the Radical-Digital

The previous section argued for a shift of focus from exploring various forms of incremental-physical interventions to the ones that are radical-digital in their approach and proposed SIFAA as a potential way to develop more innovative loneliness interventions. In order to fully explain what this thesis means by radical-digital interventions and how they can be envisaged, the following sections will conceptually deconstruct and reconstruct the meanings of ‘radical’ as well as ‘digital’, and clarify these crucial concepts as proposed in this thesis.

### 3.4.1 Radical vs. Incremental Innovation

Traditionally, being ‘radical’ has been associated with “having a certain view of the possibilities inherent in history – radicalism meant breaking away from the hold of the past” (Giddens, 1994 p. 1). Political radicalism is often closely associated with reform through agitation and revolution (Meisel, 2014). However, in its non-political avatar too, radicalism is rooted in cutting loose from convention. Tellis et al. suggest that radical innovation drives growth in firms and economies by ‘destroying’ old

### 3.4 Understanding the Radical-Digital

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markets while creating new ones (2009). Radical ideas are now being encouraged in healthcare too with UK's Health Secretary, Jeremy Hunt, calling for families to think 'radically' about taking care of their older relatives (Martin, 2015).

Within a design context, Manzini suggests that incremental innovations represent our existing ways of 'thinking and doing', and on the contrary, innovations that fall outside our current ways of 'thinking and doing' represent radical innovation (2014 p. 14). Also, Norman and Verganti define *incremental* innovation as "improvements within a given frame of solutions" or "doing better what we already do" and *radical* innovation as "a change of frame" or "doing what we did not do before" (2012 p. 5). This is akin to Dryzek's 'reformist' versus 'radical' departures in environmental discourses (2005). Reformist methods are similar to incremental approaches as they seek solutions within familiar modes of rational management, while radical departures argue for a comparatively significant movement away from existing modes of living and being.

Leifer et al. suggest that it is possible for organisations to attain "radical innovation maturity", i.e. systematically implementing organisational processes for initiating, supporting and encouraging radical innovation activities. Although the shift from a predominantly incremental outlook to a more radical one is never easy, the inability of an organisation to think creatively and foster radical maturity, can mean relying too heavily on extraordinary efforts from individuals and serendipity for success (2000 p. 193). This does not mean however, that radical innovation is an easy way out. Leifer et al. emphasise that, "Because radical innovation projects are faced with high uncertainty on multiple dimensions, the sophisticated management tools that work so well in the incremental innovation environment are not adequate" (2000 p. 55). It is because of this ambiguity in predicting the future that radical innovation is considered to be disruptive and has been compared to 'chaos' by Leifer et al. (2000). Higher levels of uncertainty accompany the pursuit of new ideas and Bessant et al. attribute such increased ambiguity in radical innovation to its exploratory nature and tenuous links to established knowledge (2014). Radical innovation offsets these higher risks and elevated levels of uncertainty with greater rewards (Prescott and Polak, 2010). Thus, radical innovation inevitably results in the exploration of

### 3.4 Understanding the Radical-Digital

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previously uncharted territories and demands a change in tools and techniques for navigating these unfamiliar realms successfully, requiring new ways of thinking as well as doing things.

Another charge directed at radical ideas comes from Carpenter who asserts that organisations and individuals interested in innovation have a tendency to get fixated on radical innovations, thereby forgetting the value of incremental steps (2009). Nevertheless, it is important to note that though many radical ideas have come about without any prior rigorous research based on end-users, radical innovation does not undermine the importance of human centred design (HCD). HCD brings together researchers and designers, who attempt to cooperate with and learn from potential users of the products and services being developed. “Their goal is to develop products or services that match users’ practices, needs and preference” (Steen, 2011 p. 45). Norman and Verganti cite the example of Facebook and Twitter to suggest that HCD is invaluable in refining a radical innovation and enhancing its appeal once it has been developed. They argue that these social networking giants came about “simply because their inventors thought they were interesting things to try” (2012 p. 3) but HCD helped them in improving their offering and enhancing their product’s appeal as can be traced from how they have changed since their introduction.

Norman and Verganti use the analogy of ‘hill-climbing’ to highlight that radical innovation may come about due to a change in meaning or technology (Figure 12). They suggest that a given product or service offering might start off at a certain point (A) and HCD can progressively enhance its quality thereby elevating it to its ‘peak’ (B) in terms of quality in this part of the design space. This is an example of incremental innovation. In their words, “To move to a different hill, one with a higher potential, requires radical innovation, and this comes about through either technology or meaning change, leading to point ‘C’ on a larger hill” (2012 p. 3). An example of moving to a different hill through ‘technology change’ can be demonstrated by the emergence of digital cameras in a world dominated by film. The ability to review, edit, and share pictures far more easily in comparison to film-based cameras established digital cameras as a radical innovation exemplar. Similarly, *Apple’s* introduction of gesture-based smartphones demonstrates ‘meaning change’ as it radically altered the mobile

### 3.4 Understanding the Radical-Digital

phone market. *Apple* capitalised on existing technologies such as multi-touch systems and gestural control to offer a new meaning to how users perceived, interacted with, and utilised their mobile phones (Norman and Verganti, 2012).

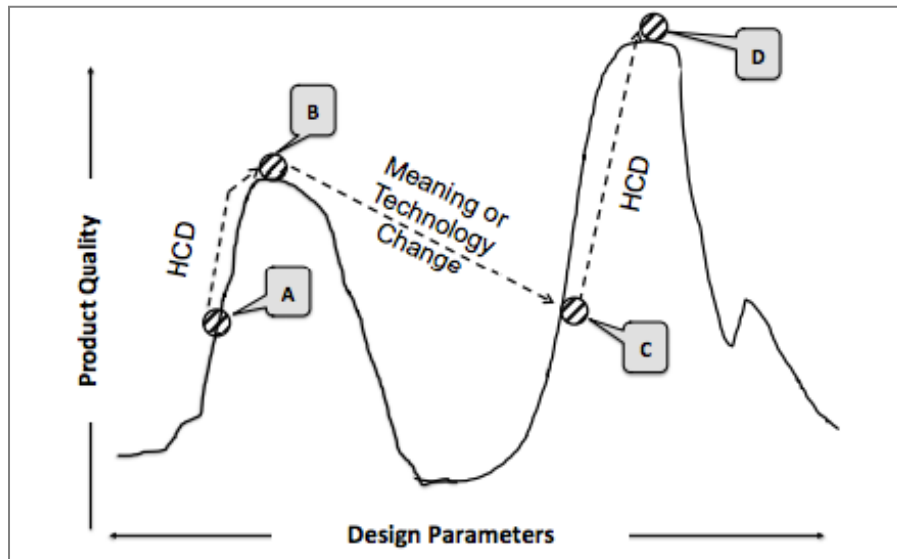


Figure 12: Hill-climbing paradigm applied to incremental and radical innovation. Source: Norman and Verganti (2012)

In case of loneliness interventions, incremental innovation would mean designing better befriending services or meeting groups etc., or improving the experience of using these services. In order to radically transform the way in which we address later life loneliness though, we need to find ways of altering the meaning of interventions, or changing the technology on which they are based. One possible way of introducing a change in meaning can come about through reimagining the roles that the service users (lonely older adults) and service suppliers (intervention providers) play. For instance, older ‘coaches’ who participate in Good Gym do not quite fit the criteria of an average service *user*. Their role has instead been thought of as that of a provider – of motivation, encouragement, guidance, and time. This changes the entire *meaning* of the intervention wherein the intervention is not designed specifically to help reduce loneliness amongst older participants, but it happens to

### 3.4 Understanding the Radical-Digital

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have that effect while it strives to achieve something else; in this case motivating keen runners to stay fit.

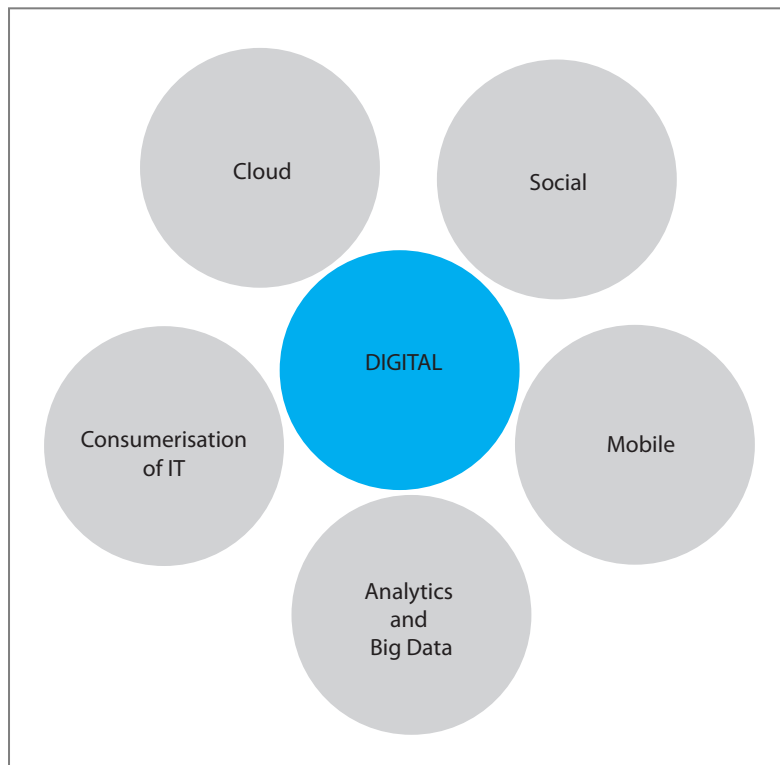
In addition to meaning change, Norman and Verganti suggest that 'technology change' (Figure 12) can also bring about radical innovation, and the following section discusses how a change in technology can impact loneliness interventions designed for older adults. The discussion begins by exploring the meaning of 'digital', a word that is increasingly being used to describe what some might call Information and Communication Technology (ICT) or Internet-based technology.

#### 3.4.2 Digital

The growth of digital technology since the 1980s has been remarkable (Thomas, 2011), and it has now become a "defining characteristic of modern life" (Turner, 2013 p. 8). Baxter-Reynolds has attempted to categorise various elements of digital technology that explain how they can be used to improve businesses and organisations by 'going digital' (2014). According to him this can be done by focussing on five key areas, namely how going digital can help businesses capitalise on social networking phenomena (Social), the growth of mobile phone users (Mobile), research (Analytics and Big Data), the gradually increasing affordability of IT (Consumerisation of IT), and the ability to access information anywhere, anytime (The Cloud). These have been briefly discussed as follows:

### 3.4 Understanding the Radical-Digital

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**Figure 13: The Five Aspects of 'Digital'. Source: Baxter-Reynolds (2014)**

#### *Social*

Digital technology should not be seen in isolation from the society that it operates within. For instance, it should look at the *meaning* of a digital social networking platform such as *Facebook*, not just as a technological development, but as an artefact that plays a role (or multiple roles) within society. It should consider what effect it has had on society in terms of transforming phenomena, relationships, ideas, etc. (Underwood, 2009). It should consider 'why' people use social networking and how they influence existing social structures and networks.

#### *Mobile*

According to a recent report published by The World Bank (2016), nearly 70 per cent of the bottom-fifths of population in developing countries now owns a mobile phone. Digital technology should utilise this vast presence of mobile infrastructure as



### 3.4 Understanding the Radical-Digital

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a resource to enhance communication for, and deliver services to its users. It should also support *mobility* in the social sense, wherein it can act as a bridge between various social groups such as nationalities, ethnicities, socio-economic classes, etc. In addition, digital technology should support physical mobility by allowing users to complete tasks remotely for which they would otherwise have to be physically present. For example, for someone experiencing difficulties in mobility, such as an older person, the ability to pay a gas or electricity bill remotely rather than having to travel to the nearest physical location can be a useful.

#### *Analytics and Big Data*

The use of Big Data refers to the collection and statistical analysis of information in large ‘clumps’ in order to understand behaviour. However, understanding behaviour and determining the motive behind a given behaviour are two very different ideas and the analysis of Big Data can sometimes fall short of answering the crucial ‘why’ question (Marcus and Davis, 2014). Thus, digital technology should be able to capture information (data) and simultaneously help us in interpreting and analysing it such that we can make informed design choices in terms of policy, urban planning, service delivery, etc. For example, the installation of ‘smart-meters’ in homes allows both users as well as energy companies to monitor the overall data and make informed choices around usage and pricing.

#### *Consumerisation of IT*

As IT companies get better at developing new technologies, and making them more affordable, they can move from being specialist technologies to being consumer products. For example, prior to *BlackBerry* making it easier to access work email on smartphones, it was a relatively difficult process. Once this was made possible, other companies also developed this functionality and made it affordable. This has revolutionised how office-work is now done, and perceived. Additionally, consumerisation of IT can drive innovation amongst consumers – who are also employees. For example, the use of *Whatsapp* groups by employees to communicate

### 3.4 Understanding the Radical-Digital

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with each other, as opposed to relying on 'official' channels of communication can enhance collaboration. Therefore, through this process of consumerisation of IT, digital technology should be able to include diverse stakeholders into the fold so that there is a sharing of rich ideas and multiple perspectives that can collectively drive the design choices that we make today in order to shape our future.

#### *The Cloud*

In simple terms, 'the Cloud' or 'Cloud computing' refers to the infrastructure that supports the sharing of services and resources over the Internet, where data and information can be provided to networked computing devices on-demand (Hassan, 2011). Mell and Grance from the National Institute of Standards and Technology (NIST) define cloud computing as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction" (2011 p. 2). Various companies now rely on cloud computing to outsource computing power or buying cloud-based functionality such as storage space for data and information. Although not necessary for being 'digital', it is an important technology trend to keep up with because an increasing number of tools and services are now becoming available on the Cloud that can define how information will be accessed in the future.

Mark McDonald, the managing director of Accenture Strategy, defines 'digital' as "an adjective describing an increasing information intensity and connectedness of physical resources. Resources like facilities, processes, people, teams become digital through the application of technologies that extract information and connect resources and its information to other resources" (2013). By casting all five aspects of digital technologies (Baxter-Reynolds, 2014) within McDonald's quest for seeing digital as something that describes amplified connectedness and information intensity (2013), the *Internet* can be seen as the core kernel from which the idea of 'digital' begins to emerge. This research focusses on the Internet-based services as symbolising digital interventions.

### 3.4 Understanding the Radical-Digital

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Potts et al. argue that in spite of the on-going rapid transition of digital technologies' role from being a luxury item to becoming a part of many day-to-day items that we interact with (the cash machines, public signage, the television, etc.) a large proportion of older people seem to be outside of this digital revolution (2015) with nearly 70% of over-65s reporting that they have never used the Internet (Independent Age, 2010). Also, online communication tools such as email and social networking platforms (Facebook, Snapchat, Instagram, etc.) have transformed personal communication amongst younger adults. Technology is also transforming government service provision and the technologically erudite now enjoy faster, easier access to public services via digital infrastructure.

However, huge investments in digital infrastructure have not necessarily yielded great digital dividend in terms of increasing productivity, alleviating inequality, enhancing democracy, and growing prosperity for all (Bates, 2016). Research into the uptake of technology among older adults indicates that age-related changes in vision, hearing and motor issues can directly influence the ability to interact with computers (Van De Watering, 2005). However even though, to older adults, the Internet might be little more than "a word of vague meaning" (O'Reilly, 2008), generally speaking, digital technologies have certain qualities that can help older adults overcome day-to-day challenges of communication, and mobility, both crucial to maintaining social contact, and consequently to mitigating loneliness. The following sections provide a quick overview of a few qualities of digital technologies that make them suitable to mitigating later life loneliness.

#### *Ubiquity of digital technologies*

Kraft and Yardley state that "the digital environment (e.g. Internet, mobile phones, smart phones) that is now an integral part of our daily lives is becoming an increasingly important means of sustaining the health of people worldwide, whether by providing access to a wealth of information, by linking geographically dispersed communities of peers and professionals, or by supporting self-management of health and illness" (2009). In a world where the number of devices connected to the Internet is greater than the number of people on earth (Frey, 2012), this ubiquity of digital

### 3.4 Understanding the Radical-Digital

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technologies has the potential to augment the outreach of care services developed for older people.

#### *Coping with mobility issues*

One of the main challenges posed by older age is its impact on mobility. Lack of mobility has also been identified as a precursor to loneliness among older adults (Milligan and Passey, 2011, Age UK, 2013a) as it can limit older people's contact with their friends and family (Section 2.3.2). Recent research indicates that the use of digital technologies such as *Skype*, email and digital gaming (Age UK, 2013a, Loos, 2014, Tseklevs et al., 2015) can help older adults stay active, and keep in touch with their family and friends. Although this doesn't entirely replace the benefits of embodied communication, it is potentially beneficial as a coping method for those that suffer from lack of mobility due to age-related problems. Apart from facilitating contact with friends and family, the Internet also helps older adults in overcoming other mobility related issues such as shopping. O'Reilly suggests that because the Internet allows for transactions to be carried out from home, which is a relatively safe environment, the majority of shopping can be done through a few clicks rather than having to travel to the market (2008).

#### *Providing alternate infrastructure*

In England, 18% of the population lives in rural areas and, proportionately, there are more people aged 65 years and over in rural areas than in urban areas (Connors et al., 2013). Recent socio-economic developments in the UK have severely impacted rural areas due to the closure of shops, post offices, bus routes, etc. (Commission for Rural Communities, 2012). The removal of these 'social opportunities', has impacted the quality of life of older people in such areas as they have become further isolated. However, it can be argued that the lack of a hard infrastructure can potentially be negated by the use of a soft infrastructure, providing an opportunity for digital services to step in. For example, farmers in rural India overcome the challenge of a scarcity of roads and transport facilities by using their mobile phones to settle their deals. This phenomena was considered to be one of the key factors for the rapid

growth of mobile technology in India (The Centre for Knowledge Societies, 2006). Although a different context, it still highlights the potential of using digital technologies in overcoming infrastructural challenges. Moreover, digital technologies can be easily (and cheaply) modified, altered or customised in comparison to physical structures. For instance, the cost of replacing a defective or broken mobile phone can be significantly cheaper than the cost of repairing a faulty bridge that connects a village to the main road.

Therefore, the ubiquity of digital technologies, their ability to overcome mobility issues, and their usage as an alternate infrastructure make digital technologies an extremely potent option to explore when designing loneliness interventions for older adults. Han and Braun have highlighted the ‘critical’ role that digital technologies and digital literacy play in active ageing by facilitating participation and social connectivity through enhanced communication (Han and Braun, 2010).

## 3.5 Discussion

This chapter includes a preliminary review of loneliness interventions designed by experts as well as non-experts. This early analysis (Section 3.2) suggested that there is a lack of radical-digital loneliness interventions developed for older adults. While radical-digital interventions may not, in the end, prove to be *the* solution to the problem, the idea that they are underrepresented, as can be seen in the preliminary analysis suggests that we do not know much about their potential strengths as well as possible weaknesses. One possible approach to exploring what part radical-digital loneliness interventions can play in mitigating loneliness amongst older adults is to critically examine interventions that are both radical, as well as digital in nature.

Studying existing loneliness interventions in order to identify what separates the radical from the incremental, and then finding ways of enabling the *digitisation* of radical-physical interventions could be one possible route to creating more radical-digital interventions that can be examined. Here meeting the aims and objectives of radical interventions that are physical in nature by using digital technologies

### 3.5 Discussion

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involving older adults would be the route to take. However, a mere lack of the use of digital technologies in developing loneliness interventions cannot be the sole justification for ‘investing’ in this area. Therefore, this chapter has highlighted the qualities that digital technologies possess such as their ubiquity, their ability to lessen mobility issues, and their role as alternate infrastructure to roads, etc., which can help in coping with challenges posed by old age. These aspects become especially relevant as reduced mobility is positively correlated to experiencing loneliness (Section 2.3.2), and easy-to-use, pervasive communication technologies can allow older adults to keep in touch with their family, friends, etc. thereby addressing loneliness.

Ultimately, it could be possible that the reason why the other types such as incremental-physical, incremental-digital or radical-physical outnumber radical-digital interventions is that radical-digital interventions are not as effective as the other types. But, such an inference would be more persuasive if supported by analytical evidence of how well radical-digital interventions work. Considering that only one radical-digital intervention was found during the preliminary review, i.e. CNA Speaking Exchange, it would be useful to consider and examine other such interventions.

It is also noteworthy, that the coding categories developed for the preliminary analysis (Section 3.2.2) were mutually exclusive. While having distinct categories immensely helped in categorising interventions, the discussion on clarifying concepts such as digital versus physical and incremental versus radical (Section 3.4) demonstrates that these boundaries are not impervious. In reality, it is very hard to classify something as being either digital or physical in the pure sense. For example, every digital loneliness intervention has physical elements that comprise people and their actions. Similarly, once a new way of thinking and doing things has been operationalised, its novelty or newness is not everlasting. Thus all ‘radical’ ideas follow a trajectory towards becoming incremental (in time) as once they occur, they immediately begin to represent our *existing* ways of doing things.

Nevertheless, the notion that there is an underrepresentation of radical-digital loneliness interventions suggested that:

1. We need to learn from the experiences of expert as well as non-expert intervention designers;
2. further research is required to understand how easy / difficult it is to set a radical-digital loneliness intervention into motion; and
3. because loneliness interventions are neither purely digital nor purely radical, the grid (Figure 8) must be reconceptualised to make it more representative of how various interventions are related to each other.

By identifying patterns in how existing loneliness interventions operate, this thesis identified that a hybridisation of Social Innovation and Activity Theory of Ageing can provide a good platform to develop radical-digital loneliness interventions. These two theoretical concepts were deemed to be complementary, and the hybrid propositional framework was called Social Innovation For Active Ageing (SIFAA). However, in order to better understand society's response to later-life loneliness, a more detailed, comprehensive and systematic approach to identifying, and categorising loneliness interventions is needed in comparison to the 'quick and dirty' ethnographic approach utilised in this chapter. This systematic approach can also allow for a comparison of loneliness interventions based on SIFAA with others, offering an insight into SIFAA's potential strengths and limitations in developing loneliness interventions for older adults. Also, further experimentation into operationalising SIFAA can be useful in identifying practical ways of implementing this novel theoretical framework. Such experimentation would also reveal the role that professional and non-professional designers can play in conceiving, deploying, and scaling innovative loneliness interventions.

Therefore, further research into radical-digital interventions was carried out by using SIFAA to design and implement a radical-digital loneliness intervention for older adults. To test the possible strengths and potential weaknesses of SIFAA, and radical-digital interventions, specific research questions were drafted (see section 1.2.1) and a multi-method research approach was developed. This has been discussed in more detail in the following chapter.

# Chapter 4. Methodology

*"No research without action and no action without research".*

- Kurt Lewin





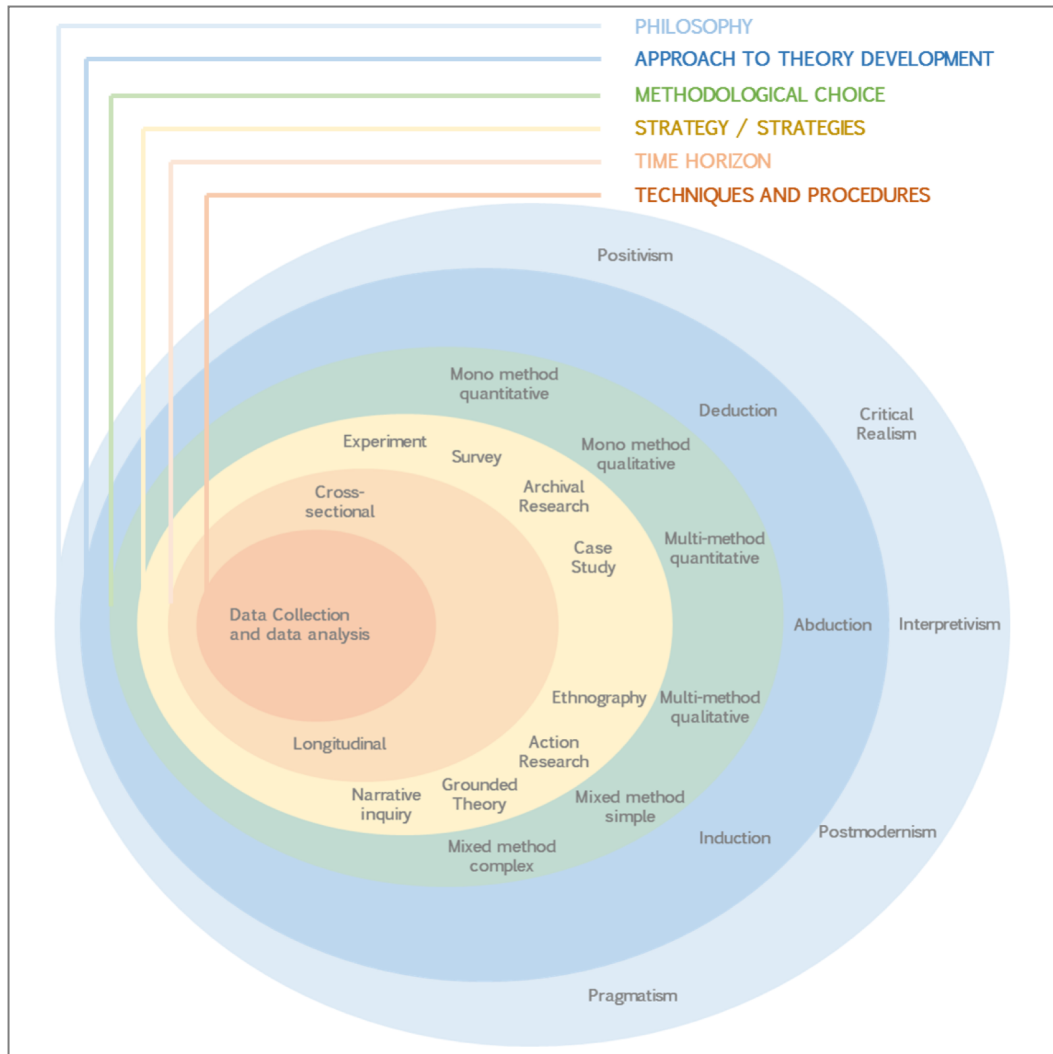
## 4.1 Overview

This chapter discusses the methodological orientation of this thesis. It emplaces this research work within a gamut of established research philosophies, and specifies how a multi-methods approach comprising a systematic literature review (SLR), expert interviews and an action research based trial were used during this study. The discussion herein clarifies how a combination of action anthropology and action research guided the methodology used in this study, and helped in meeting the research aims and objectives specified in Section 1.2.1. The following segments present an overview of the axiological, epistemological and methodological stance adopted in this research and highlight the contribution of each individual investigation, i.e. the SLR, the expert interviews, and the action research based trial to the overall research questions.

The discussion on the methodology adopted for this study begins by acknowledging the beliefs and assumptions on which this research was founded in order to highlight how they might have influenced the study. Burell and Morgan have suggested that researchers make ‘assumptions’ consciously or unconsciously at every stage of their investigation (1979). “These include assumptions about human knowledge (epistemological assumptions), about the realities you encounter in your research (ontological assumptions) and the extent and ways your own values influence your research process (axiological assumptions)” (Saunders et al., 2016 p. 124). Since this research is not founded on ‘the scientific method’, this thesis argues that the researcher can not exclude himself/herself from the research context that he/she investigates. This thesis *assumes* that maintaining complete objectivity in societal research of this kind, in pursuit of ‘knowledge’, is impractical and that it also signifies some level of indifference towards research *subjects*. Sol Tax argues that action anthropologists ‘eschew’ pure science because they do not believe in preforming experiments upon people for an end not related to their own welfare. “People are not rats and ought not to be treated like them” (1975 p. 515). Therefore this research is an attempt to be as ‘subjectively-objective’ (Mehta, 2015) as possible

## 4.1 Overview

so as to acknowledge that the *actions* taken during the study, intended or otherwise, have inevitably shaped the outcome of this research.



**Figure 14: The Research Process 'Onion' by Saunders et al. (2016)**

The first couple of sections of this chapter present the philosophical position and the overall research approach adopted during this study. The middle part clarifies key aspects of action anthropology and action research that were instrumental in devising an effective research strategy, followed by a summary of techniques and procedures used to analyse and interpret the data collected during this study. The final segment discusses how these research methods address the research questions specified in

Section 1.2.1. The research process 'onion' described by Saunders et al. (2016) has been used to structure the discussion in this chapter. Working inwards from the external layers of the onion (Figure 14), this chapter discusses the main aspects of the methodological choices made during the research. The onion represents six levels of methodological groups a researcher works within starting from the broader perspective of the guiding research philosophy to the narrow and specific tools and techniques of collecting and analysing research data.

## 4.2 Research Philosophy

This thesis takes a pragmatic stance and highlights this research's assumption on knowledge as being something that is acquired in time and space through a continuous churn of thought and action. The Merriam-Webster dictionary defines knowledge as, 'information, understanding, or skill that you get from *experience* or *education*'. This implies that the source or stimuli for knowledge can be both internal (experience) as well as external (education). Therefore, knowledge is characteristically related to both thought and action. One might argue that some knowledge is *hardwired* into our brains and that certain skills come 'naturally' to all living beings. Yet, in order to be able to use that knowledge or those skills effectively, we have to action them. The *act* of putting that knowledge into practice, determines our understanding of the possibilities a particular skill has to offer. According to Lukacs, action itself influences observation and perception, and therefore shapes our understanding of a given situation. This means that the researcher, action, and understanding are all interconnected, and it is through reflective practice that we can begin to make sense of this complex, unified whole (2003).

Pragmatism, which emphasises developing context-specific knowledge through practical experience rather than theorising, is a popular notion amongst researchers interested in problem solving endeavours. "The central idea is that the meaning of a concept consists of its practical implications" (Robson and McCartan, 2016 p. 28). According to pragmatists, there can be many different ways of interpreting the world

and undertaking research. Pragmatism highlights the possibility of multiple realities and suggests that no single point of view can determine the entire truth, if one is ever to be found. This does not mean that pragmatists always use multiple methods. Instead they advocate using a method or methods that enable credible, well-founded, reliable and relevant information to be collected that expands knowledge through research (Kelemen and Rumens, 2008). Since this study was focussed on attempting to understand and change our contemporary ways of dealing with later life loneliness, it was guided by a pragmatic philosophy.

## 4.3 Theory Development

Pragmatism is deeply connected to abductive reasoning. While deductive reasoning is primarily concerned with moving from theory to data (a top-down approach) and inductive reasoning advocates the opposite (bottom-up approach), an abductive approach moves back and forth between the two (Suddaby, 2006). Abductive reasoning is known to form and evaluate hypotheses aimed at making sense of puzzling facts (Thagard and Shelley, 1997) and complex design contexts that do not represent incremental innovation (Dunne and Dougherty, 2015). Denrell et al. (2004) equate simple and predictable problems to a T-maze, where problem solvers choose one of two arms to explore, in pursuit of a reward with some probability. Complex problems, on the other hand, “are like navigating in a labyrinth, because feedback is available only after actors perform a sequence of actions that take them to another decision context, not to the outcome. Actors use mental models of the problem to navigate in the labyrinth, making predictions along the way and adjusting their models based on conditions en route” (Dunne and Dougherty, 2015 p. 132). This creation of a mental model requires the problem-solver to rely on abductive reasoning, “specifically, in the identification of themes, codes, and categories” (Lipscomb, 2012 p. 244) into which he/she can sort his/her actions and their outcomes.

## 4.4 Methodological Choice

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As highlighted previously (Section 4.2), this research was not aimed at scientifically proving or disproving a postulation or at uncovering the truth, but it is an attempt to identify *patterns* in our current thinking around developing loneliness interventions for older adults (Section 1.2.1) in order to be able to change the status quo. Hence abductive reasoning was chosen as a suitable approach to theory development owing to its natural alignment with the study's pragmatic viewpoint and its usefulness in identifying patterns.

While the outer two layers of the research onion (Figure 14) describe the intellectual aspects guiding a research, the next three layers, i.e. methodological choice, strategy/strategies, and time horizon can be conceived as being more focussed on the process of research design. A research design is 'the general plan' that a researcher drafts in order to answer his/her research questions (Saunders et al., 2016). The next three sections of this thesis highlight the overall research design followed during this study.

## 4.4 Methodological Choice

One of the first methodological choices the researcher must make is whether his/her research design would be qualitative, quantitative, mono-method, mixed-method (simple or complex), or multi-method (qualitative or quantitative), etc. in nature (see Figure 14). Due to the focus of this research on developing context-specific knowledge, a qualitative approach was considered appropriate. Because qualitative researchers need to make sense of socially constructed meanings and subjective views, qualitative research is closely associated with interpretivism (Denzin and Lincoln, 2011). However according to Saunders et al. (2016), qualitative research can also be used within realist as well as pragmatist philosophies and due to a rise in interdisciplinary studies, various permutations and combinations of qualitative and quantitative data collection and analysis techniques have also begun to emerge.

## 4.4 Methodological Choice

This study used a predominantly qualitative multi-method approach. A brief indication of the respective methods chosen for each (subsidiary) research question has been given below (Table 7). Targeted methods to answer the wide, exploratory nature of research questions<sup>9</sup> allowed for a more holistic approach to exploring the research problem. These methods are explained in more detail in the following sections (Section 4.5 and Section 4.7).

Research Questions	Research Methods
What are the current approaches to addressing later life loneliness?	Systematic Literature Review (SLR)
What are the strengths and limitations of using SIFAA in developing interventions aimed at reducing loneliness amongst older adults?	Action Research Based Trial
How do SIFAA-based interventions compare to other existing loneliness interventions?	SLR Action Research Based Trial Expert Interviews
What is the role of design in developing such interventions?	Literature Review Action Research Based Trial

Table 7: The choice of research methods to answer specific research questions

At this stage it may be interesting to note that a systematic literature review (SLR), which is a popular research method used in quantitative research (Dixon-Woods et al., 2006) has been adapted for this multi-method qualitative study. The SLR carried out for this study was interested in identifying patterns in how loneliness interventions have been designed within the last decade. To get a more contemporary view of the interventions the SLR was extended to include interventions found on *Twitter* as well as from academic sources. This adaptation has been explored in detail later (Section 4.7.1 and Section 5.2).

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<sup>9</sup> Saunders et al. suggest that, “research questions that are exploratory are likely to begin with ‘What’ or ‘How’ (2016 p. 174).

### 4.5 Research Strategy

According to Saunders et al. (2016), having made a methodological choice, a researcher has to finalise an overarching strategy that serves as a 'methodological link' between the research philosophy and subsequent choice of methods to collect and analyse data (Denzin and Lincoln, 2011). Since this research was equally aimed at contributing to the current theory as well as the practice of mitigating loneliness, an action research methodology was considered most suitable.

Action research "is the application of fact finding to practical problem solving with the view to improving the quality of action within it...the focus is on a specific problem in a defined context" (Burns, 1990 p. 253). Kagan et al. refer to it as an "orientation to enquiry" and they argue that in its simplest form, action research aims to combine the understanding, or development of theory, with action and change (2007 p. 32). For an action researcher, engagement with a particular phenomenon or object situated within a particular context produces knowledge, which can alter the nature of subsequent action(s). This reflexive principle of action research challenges conventional research approaches that highlight the importance of a fully structured plan of investigation prior to commencing a systematic inquiry. "Action, in other words, can lead to a plan, which in turn stimulates further action, and the generation of theory and practical knowledge can result iteratively" (Washington et al., 2009 p. 143).

This investigation followed the five stages of action research proposed by Susman and Evered (1978) as can be seen in Figure 15. In this approach, a problem is identified and further information or data is collected at the start for a detailed *diagnosis* of the problem. Imagining multiple possible solutions to the problem and then *planning* to implement the one deemed most suitable follows the first step. After *taking action* or setting up an intervention, it is *evaluated* such that findings from the action can be *specified* and fed back into the cycle. This cyclical process can be continued by the action researcher based on whether he/she deems the problem to have been addressed, or knowledge to have been attained, to a satisfactory level within the resources allocated to the project.





**Figure 15: Susman and Evered's five stages of action research (1978)**

In order to implement the action research strategy highlighted above, a plan was drafted wherein research activities were assigned to each phase of the cycle. Each of these activities that corresponded to specific stages in Susman and Evered's Action Research Cycle (1978), yielded insights that fed into the next stage of the research cycle as shown in Table 8. Also, not only did action research guide the overall research strategy for this study, represented by a single loop of the action research cycle (Table 8), shorter, iterative loops of the action research cycle (Susman and Evered, 1978) helped in developing, and refining a SIFAA-based loneliness intervention (Section 4.7.3 and Section 5.4).

## 4.5 Research Strategy

Action Research Stage	Research Activities	Outcome
<i>Diagnosis</i>	Reviewing existing literature to identify a research gap (preliminary review of literature).	Detecting a lack of radical-digital loneliness interventions.
<i>Action Planning</i>	Building a strategy to address the diagnosed gap in research.	Developing SIFAA.
<i>Action Taking</i>	Implementing the planned strategy.	Conducting a systematic literature review (SLR) of loneliness interventions.  Interviewing experts in the area.  Prototyping a SIFAA-based radical-digital intervention.
<i>Evaluation</i>	Observing the action taken and comparing the intervention to other services.	Identifying patterns in loneliness intervention design.  Gaining a nuanced understanding of factors that can facilitate or hinder the development of radical-digital loneliness interventions.  Making iterative adjustments to the intervention using smaller cycles of the action research model.
<i>Specifying Learning</i>	Reflecting on the entire process.	Synthesising insights useful for designing loneliness interventions.

**Table 8: Implementing the five stages of action research**

As can be inferred from Table 8 above, this investigation was based on a deep engagement with primary as well as secondary data, i.e. desk research as well as fieldwork. Guided by beliefs and values grounded in action anthropology, fieldwork for this investigation was conceived as a "clinical or experimental method of study" (Tax, 1975 p. 515). This *clinical* nature of fieldwork in action anthropology is best described by Bennett's summary of Tax's views on fieldwork. "It is a study, or research, and at the same time it is aimed at real-life problems of the population in

question. Here lies the essence of action anthropology: it is something the academic anthropologist does as research, but it is simultaneously something he does for humanity” (1996 pp. 36-37). Therefore, an action research methodology, underpinned by action anthropology was chosen for this study.

The discussion below highlights how each of the research activities discussed in Table 8 helped in addressing the research questions presented earlier (Section 1.2.1).

### **4.5.1 What are the current approaches to addressing later life loneliness?**

As identified through the initial review of literature (Section 2.3.1), this research is focused on non-pharmacological loneliness interventions. In order to better understand the existing research or ‘solution space’, a systematic literature review (SLR) was carried out in order to identify a comprehensive list of interventions in the area.

### **4.5.2 What are the strengths and limitations of using SIFAA in developing interventions aimed at reducing loneliness amongst older adults?**

In order to pilot-test the propositions of SIFAA, trial based on action research was set up over a period of 45 weeks. The researcher worked with an existing charity organisation that runs a loneliness intervention for older adults and used ideas based on SIFAA to transform the intervention into a radical-digital one over several iterations. By putting a trial based on this propositional framework (SIFAA) into practice, the researcher was able to explore the potential and actual drawbacks of the framework.

### **4.5.3 How do SIFAA-based interventions compare to other existing loneliness interventions?**

A systematic approach to examining literature was seen to be helpful in recognising existing loneliness interventions that exhibited traits of SIFAA, allowing for their comparison with other types of interventions. Additionally, the action research approach used to develop and evaluate the SIFAA-based trial helped in

recognising its strengths and limitations (Section 5.4). Interviews were also conducted with professionals working in the area to gauge their perceptions around how different types of loneliness interventions compare to each other.

### 4.5.4 What is the role of design in developing such interventions?

Insights from the action research based trial as well as the expert interviews helped in reflecting upon the role of design, and that of the designer in developing loneliness interventions for older adults. Using an iterative prototyping approach, which is fundamental to design processes, generated practical insights about replicating the trial developed during this study. Reflecting upon the intervention design process, also helped in framing the potential role that designers (and design) can play in scaling SIFAA-based loneliness intervention.

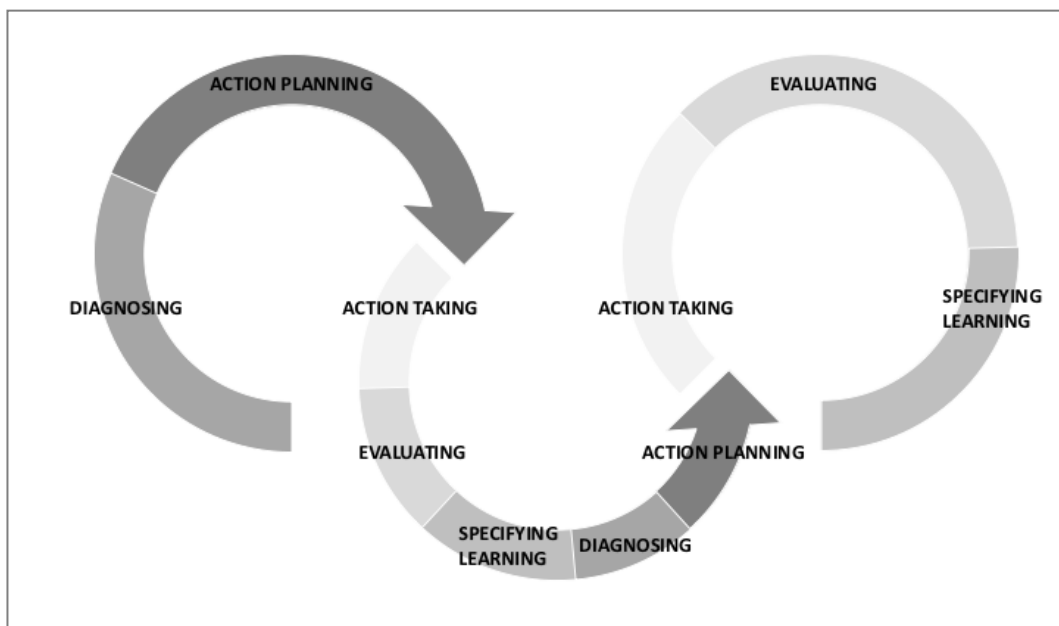


Figure 16: Overall (action) research strategy for the study: Adapted from (Clune, 2009)

The study began by reviewing existing literature in the area in order to identify a research gap worthy of further exploration. This involved examining theories and research models that attempt to explain the nature of ageing and loneliness and their

perceived association. Reviewing existing literature on how ageing and loneliness might be related and how, as a society, we attempt to address the issue, helped in the identification of a research gap in the form of underrepresentation of radical-digital interventions in mitigating later life loneliness. This early *diagnosis* has been covered in more detail in 0 and Chapter 1 of this thesis.

As can be seen in Figure 16 and Table 8, the initial block of this research work involved diagnosing the problem, i.e. identifying a research gap, followed by formulating a strategy to address the problem – the *action planning* stage. It was in this second stage, that the propositional theoretical framework i.e., SIFAA, aimed at developing radical-digital loneliness interventions for older adults was developed. In the same action planning stage, the specific research questions were finalised and a research design to experiment with SIFAA using an action research methodology was developed. The second part of the study, represented by the middle circle in Figure 16, primarily saw the action research based trial go through iterative action research cycles, alongside interviews with experts in the area and a comprehensive systematic literature review of loneliness interventions developed for older adults. This data collection and fieldwork phase of the research continued until the early part of the final cycle. The remainder of the third phase of this study, represented by ‘evaluating’ and ‘specifying learning’ phases of the third and final circle in Figure 16, was utilised in analysing the data generated during the research and in writing up the thesis for presenting the overall findings from this investigation, i.e. *specifying learning*. The details of how various research methods were utilised during this study have been discussed in the following sections.

## 4.6 Time Horizon

This study incorporated elements of both longitudinal, as well as cross-sectional time horizons. In a research design, time horizons identify how a research is carried out in terms of duration or periodicity (Oliveira, 2013). When all measures in a study are taken either at the same point in time or during a brief period, it is considered to

## 4.6 Time Horizon

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be cross-sectional in nature (Oliveira, 2013). In a cross sectional study, a researcher measures relationships or analyses data from different ‘readings’, from different sources at approximately the same time (Robson and McCartan, 2016). Similarly, if data are collected at several points in time, it is representative of a longitudinal study. In intervention research, longitudinal studies are considered an effective way of establishing causality because measurement occurs before and after the intervention (Cohen et al., 2013). From an epistemological point of view, this chapter has previously highlighted the context-specific nature of the insights generated during this study in Section 4.4. This thesis argues that since contexts evolve in time (DeWitt and Scheiner, 2004), all *pragmatic* knowledge can be considered as being cross-sectional in nature. This is because unlike many *laws* of scientific knowledge that have managed to remain ‘true’ for decades, knowledge produced through action research or action anthropology may not have such a long life-span. Since the society, the culture, the technology, i.e. ‘the context’ can go through noticeable changes over relatively smaller durations of time, knowledge produced using a pragmatic approach may only represent a snapshot of a particular phenomenon at a particular stage of evolution.

Although this study was initially perceived to be longitudinal, it was later found to be cross-sectional in nature. For example, even though the analysis of loneliness interventions found in the SLR represented various data points spread over a decade, the patterns in intervention design identified during the SLR, only characterised a snapshot of the *contemporary* research on loneliness interventions, i.e. the time field was not taken into account. Additionally, the action research based trial lasted 45 weeks in total and ethnographic observations were conducted throughout the study indicating a longitudinal approach. However, because the insights gleaned from the trial were context-specific and did not aim to establish causality, they were cross-sectional in terms of an overall time horizon. The expert interviews were purely cross-sectional in nature as no follow-up interactions were conducted with the interviewees.

## 4.7 Techniques and Procedures

The ‘practical, ethical and theoretical’ (Churton and Brown, 2009) issues such as resources, research capabilities, confidentiality of participants, etc. related to this research were considered in order to choose appropriate research methods for this study. Established research tools and techniques such as triangulation were used for the study so that the research findings were theoretically valid. In order to ensure the replicability and reliability of research findings, the research process, tools, and techniques were carefully documented to enable ‘reflexivity’ (Finlay, 2002). Issues such as validity and reliability of this investigation have been explored in more detail in the section titled Ensuring Legitimacy (Section 4.8), and this section presents the three research methods used in this thesis.

### 4.7.1 Systematic Literature Review

As discussed previously (Section 4.5), a systematic literature review (SLR) was carried out to map loneliness interventions developed for older adults in order to compare and contrast them with each other, and with the action research based trial developed during this study. This allowed the study to extend both its early *diagnosis* of the problem space, as well as the evaluation of its proposition (SIFAA) compared with other interventions in the area. Using a systematic approach to examining literature minimised the chance of ‘cherry-picking’ evidence (Booth et al., 2012) to support any preconceived ideas.

In their highly comprehensive, systematic review of loneliness interventions, Cattán et al. (2005) examined quantitative outcome studies published between 1970 and 2002. The systematic literature review carried out for the current research is instead, qualitative in nature. Using a qualitative approach to analysing loneliness interventions allowed for the exploration of similarities and differences in the strategies adopted by various interventions to address loneliness. Also, because this research was not aimed at reporting numerical results, a quantitative approach was not appropriate for addressing exploratory research questions.

## 4.7 Techniques and Procedures

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### *Search Strategy*

The search identified any intervention studies that were published in English language, within peer-reviewed journals between January 2005 and December 2014. Studies not published in English were excluded keeping in mind the limitation cited by Cattán et al. (2005) in their review<sup>10</sup>. To be included in the study, the articles had to meet the following conditions<sup>11</sup>:

1. The study related in full or in part to older people.
2. The intervention was intended to prevent or alleviate social isolation and / or loneliness in full or in part.
3. The study described health-promoting interventions that enabled older people to increase control over and to improve their health.
4. The full research article / publication was available to read online using Lancaster University's institutional access.

Seeking inspiration from Cattán et al.'s selection of databases (2005), electronic searches were conducted on Medline<sup>12</sup>, PsychInfo<sup>13</sup>, CINAHL<sup>14</sup> and EMBASE<sup>15</sup>. In addition to academic databases, interventions found in grey literature in the form of websites, blogs, marketing material, etc. were also included in the overall review. This study also included interventions that the author came across while attending meetings and conferences during the study, and those found on *Twitter*.

Cattán et al.'s search strategy (2005) was adapted in order to obtain maximum number of publications suitable for examination for the purpose of this study. To include all forms of interventions, the type of study (review, evaluation, overview,

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<sup>10</sup> Cattán et al. highlight that inaccessibility of literature in languages other than English (to native English speakers) is an important limitation for comparative studies that are international in scope. In their review they found that majority of the publications identified in other languages "were neither intervention nor loneliness studies but rather examinations of related matters such as social support" (2005 p. 58).

<sup>11</sup> Adapted from Cattán et al. (2005).

<sup>12</sup> <https://www.ncbi.nlm.nih.gov/pubmed>

<sup>13</sup> <http://www.apa.org/pubs/databases/psycinfo/>

<sup>14</sup> <https://www.ebscohost.com/nursing/products/cinahl-databases/cinahl-complete>

<sup>15</sup> <http://store.elsevier.com/embase#search>



## 4.7 Techniques and Procedures

etc.) was not predetermined as was the case in Cattán et al.'s search strategy. A summary of the core and peripheral search terms has been provided in Table 9 below. Note that '\$' sign indicates any suffix or none.

Population / Target Group	Problem Area	Prevention / Promotion Topic	Intervention / Method
<i>Core Search Terms</i>			
Older\$ Elder\$ Senior\$ Geriatric\$ Aged	Social isolation Isolation Loneliness Social	Social support Loss	Promot\$ Prevent\$ Support Self-help
<i>Peripheral Search Terms</i>			
Older aged Carer Older person Caregiver Aging Ageing Old age	Mental health Suicide Psychosocial Depression	Access Ageism Housing Transport Mobil\$ Behaviour\$ Behavior\$ Fear Environment\$ Activ\$ Housebound Motivation Bereavement Physical disability	Educat\$ Policy Community development Community programme Strateg\$ Empower\$ Skill Screening Social activity Advice Community Inform\$ Welfare Benefits Rehabilit\$ Neighbourhood Neighborhood

Table 9: Keywords and search terms adapted from Cattán et al. (2005)

The searches were conducted in two steps. First all the core terms were investigated followed by searching all the peripheral terms. Although this resulted in some duplication of research articles, in terms of managing the process, it helped avoid any confusion while dealing with multiple sets of numerous search terms.

## 4.7 Techniques and Procedures

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### *Shortlisting interventions*

The search terms yielded a total of 8298 articles out of which 7807 articles were excluded based on their titles. If the title clearly indicated that they did not meet the inclusion criteria set out on page 129, then the article was discarded. For example, a paper titled “Psychosocial issues confronting young women with breast cancer” was found during the search, but was rejected as the title did not indicate any association with older adults or loneliness interventions. For any studies where the title did not clearly indicate whether they met the inclusion criteria or not, reading the abstracts helped in screening the papers resulting in a total of 491 research articles. After eliminating duplication, 452 papers remained. Upon detailed examination of these papers, 57 papers were included in the study as the rest did not meet one or more of the conditions for inclusion (see Page 129). 3 out of the 57 papers that were examined in this study were themselves systematic literature reviews of loneliness interventions. After consulting the source papers mentioned within each of these 3 SLRs a total of 8 articles were found that met the screening criteria. These 8 studies were included in this review. Also, one of the articles mentioned 2 interventions that met the inclusion criteria therefore a total of 63 interventions were included in the study. Figure 17 depicts the process of shortlisting interventions from research articles for examination using the *systematic* route.

## 4.7 Techniques and Procedures



Figure 17: The process for shortlisting eligible interventions

### *Including Grey Literature*

Although methodologically rigorous, a traditional SLR approach can potentially exclude interventions developed by practitioners who may not have “the same

## 4.7 Techniques and Procedures

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incentives as academics to publish in peer-reviewed journals” (Mahood et al., 2014 p. 222). Therefore, a further 133 loneliness interventions found in non-academic publication sites, i.e. in grey literature, were also included in this review, taking the total number of interventions examined to 196.

Since searching for grey literature is ‘challenging’ (Mahood et al., 2014), it can also be difficult to articulate the exact process of identifying studies included in such a review. This can raise doubts about the replicability of the process which is detrimental to the credibility of research based on literature reviews. To minimise this ambiguity in identifying loneliness interventions found outside the systematic review strategy, a three-pronged approach to reviewing grey literature was implemented. First, 33 case studies found on *Campaign To End Loneliness (CTEL)* website’s *Learning Network* webpage (2016) were examined and included in the study<sup>16</sup>. A second set of grey loneliness interventions were identified from a review of social media. An investigation of 1000 *tweets* found on CTCL website’s *Twitter handle* yielded 147 shortlisted tweets potentially mentioning loneliness interventions, and were examined further<sup>17</sup>. Upon removing duplication and applying the same screening criteria as the SLR (Section 4.7.1) to the interventions found within these tweets, 61 loneliness interventions were included in the study. A third and final set of loneliness interventions came from other sources such as reports, online articles, referrals, attending conferences, etc. that were all part of the overall research endeavour. This set of loneliness interventions also included the ones that were examined previously during the *diagnosis* (Susman and Evered, 1978) phase of the overall research (Chapter 1). A total of 39 such interventions from ‘other’ sources were included in the review. A full list of interventions along with their sources can be found in Table 22 (see Appendix).

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<sup>16</sup> All 33 case-studies as of 5 October 2016 on the webpage were included in the study.

<sup>17</sup> A Twitter handle is the personal identification name for a Twitter account and begins with an ‘@’ symbol. The latest 1000 *tweets* (including *retweets*) as of 25 October 2016, from the *Twitter handle @endlonelinessuk* were examined

## 4.7 Techniques and Procedures

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### *Investigating*

The preliminary review of literature carried out earlier (Chapter 1), alluded to a significant gap in research in the form of underrepresentation of radical innovation, and underutilisation of digital technologies in developing loneliness interventions. A more comprehensive, and systematic approach to examining loneliness interventions was carried out for a more in-depth exploration of this gap. Therefore, the data collection strategy was refined for this investigation. While the coding approach adopted previously (see Section 3.2.2) classified the interventions into mutually exclusive categories such as physical versus digital, and incremental versus radical, the coding strategy was revised for this phase of the study to accommodate for the more *fluid* nature of these phenomena discussed in Section 3.5. All interventions were logged on a specially designed template that recorded the authorship of the articles, year of publication, journal source, the country of study, and the name of intervention(s) discussed within the article. Each individual intervention sourced through these articles was then carefully coded using the strategy developed previously (see Section 3.2.2) to determine whether the interventions contained within them were preventative, remedial or supportive. Using the previous approach, interventions were also categorised as being one-to-one, group based or community based.

Langrish et al.'s (1972) four-level classification of innovation was used to develop coding categories that separated radical interventions from the ones that tend to operate within our 'existing ways of thinking and doing' (Norman and Verganti, 2012). These have been discussed below:

1. Improvement: Langrish et al. argue that when 'the standard book'<sup>18</sup> of a product or service undergoing innovation is either completely unaltered or is only slightly different to its original form, it represents an improvement.

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<sup>18</sup> Langrish et al. (1972) use the changes made to a 'standard book' or 'a text book of the sort' that would be required to deliver a university lecture course about a 'technology' being examined, as a metaphor to demonstrate various levels of innovation.

## 4.7 Techniques and Procedures

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2. Incremental Innovation: When the innovation requires changes to an entire chapter or additions of a few paragraphs to the book, it is an incremental innovation.
3. Major Innovation: If an innovation renders several chapters of the standard book out of date or causes the addition of a new chapter or chapters to it, then it represents major innovation.
4. Radical Innovation: Innovations that lead to a brand new technology may mean that 'the standard book' has to be completely reconceptualised. Such profound changes represent 'radical breakthrough innovation' (Langrish et al., 1972).

Chakraborty and Khadilkar, who have sought inspiration from this four-level classification of innovation, have suggested using the 'working principle' (2003) of a product as one of the criteria for assessing product novelty among other 'technical' measures. They suggest comparing the working principle of a product being examined with the minimum standard in order gauge the originality of the product being scrutinised (Chakrabarti and Khadilkar, 2003). This approach inspired the coding strategy developed to examine loneliness interventions for this review.

In order to ascertain whether an intervention represented an improvement, an incremental innovation, a major advance or a radical departure, in comparison to the most basic form of a loneliness intervention, each intervention was critically analysed to glean out its working principle. Each working principle was constructed as a statement that represented the underlying approach of the intervention and was compared to a *standard working principle* akin to Langrish et al.'s metaphorical standard book. Based on the preliminary review of interventions, the following statement was considered to represent the most basic underlying approach or in other words, the standard working principle (SWP) for developing loneliness interventions:

**SWP: "If someone is feeling lonely, get someone to talk to them."**

## 4.7 Techniques and Procedures

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This standard approach is best demonstrated by some befriending services wherein if an individual or their family seek help from a social service highlighting that the given person experiences loneliness, they are introduced to another person, usually a volunteer, who is responsible to converse with them and it is hoped that through these conversations, a friendship may emerge and that the individual seeking help finds some assistance in dealing with their loneliness.

Coding questions were developed to compare each individual working principle with the standard working principle (SWP) to determine whether the interventions being reviewed represented an improvement, incremental innovation, major innovation or radical innovation as follows:

### Question 1:

*What is the working principle of this intervention?*

All responses to this question were framed in terms of “*If someone feels lonely, then...*” or “*If a person feels lonely, then...*” in order to have consistency in responses. This helped in comparing the working principles.

### Question 2:

*Does this working principle demonstrate a noticeable change or difference in comparison to the Standard Working Principle?*

If the answer to the question was yes, the intervention represented either incremental, major, or radical innovation. If the answer to this question was no, then it represented an improvement.

### Question 2.1:

*Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, looking at older adults as providers rather than recipients of help and support, creatively combining the problem of loneliness with another problem such that they address each other, addressing loneliness as a by-product of some other activity, etc.?*

If the answer to this question was yes, the intervention was classed as being an example of radical innovation. If the answer to the question was no, it was considered to be either a major innovation or an incremental one.

### Question 2.1.1:

## 4.7 Techniques and Procedures

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*Does this working principle represent more than a few (1 or 2) key differences in comparison to the standard working principle?*

If the answer to this question was yes, the intervention was considered to represent major innovation, and if the answer was no, it was classed as an example of incremental innovation.

### **Classification example**

To explain this in more detail let us consider the example of an intervention called *Eldershine*. This service brings together older adults who might experience loneliness or other psychosocial problems, to participate in mindfulness and meditation activities. The underlying core idea or working principle upon which *Eldershine* has been created relies on bringing together a group of people, and getting them to become 'at peace' with their experience of loneliness, or solitude. This is different to the SWP, which looks to provide help and support to lonely older adults via external sources such as befrienders. However, because its core approach of bringing people together around an activity is not 'radically' different from introducing them to potential befrienders, or mentors who can guide them, *Eldershine* is classed as a major innovation. Table 10 shows how coding questions were used to examine *Eldershine*.



## 4.7 Techniques and Procedures

Standard Working Principle (SWP)		“If someone is feeling lonely, get someone to interact with them”.		
Intervention Name		Eldershine		
1. What is the working principle of this Intervention?		If someone’s lonely, get them to focus on their inner self by practicing mindfulness and meditation.		
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?				
Yes		No		
Incremental, Major or Radical		Improvement		
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, looking at lonely older adults as providers rather than recipients of help and support, creatively combining the problem of loneliness with another problem such that they address each other, addressing loneliness as a by-product of some other activity, etc.?				
Yes	No			
Radical	Incremental or Major			
	2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?			
	Yes	No		
	Major	Incremental		

Table 10: Using the coding questions to determine the level of innovation for Eldershine.

Similarly in order to determine the extent to which each intervention used digital technologies, Baxter-Reynolds' (2014) 'Five Aspects of Digital' framework (Section 3.4.2) was adapted to draft six coding questions. Based on 'yes or no' responses to the coding questions, each intervention was given a score out of 6 wherein a total score of 6 (yes responses) indicated a high utilisation of digital technologies and a score of 0 suggested minimum reliance on digital elements. These coding questions have been provided below:

### Question 1:

*Does this intervention enrich / enhance the older adults' social network in any way (digitally)?*

### Question 2:

## 4.7 Techniques and Procedures

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*Does this intervention utilise mobile technology in any way?*

Question 3:

*Does this intervention capture and / or utilise analysis of Big Data?*

Question 4:

*Does this intervention rely on consumerised IT (PCs, laptops, tablets, affordable handsets, etc.)?*

Question 5:

*Does this intervention rely on 'The Cloud'?*

Question 6:

*Does this intervention have an online presence/access (websites, YouTube videos, etc. found through a simple Google search. Google Scholar citations to be ignored)?*

### *The four classification levels*

Using this coding approach, each intervention was categorised on four different levels and individual visualisations were created for them. Based on their objective (Section 3.2.2), interventions were classed as being either preventative, supportive, or remedial in nature represented by the colours red, orange, and green respectively in the visualisations (Section 3.2.3).

Interventions were also categorised based on their scope (Section 3.2.2), as either being one-to-one denoted by the letter O, Group-based represented by letter G, and Community-based symbolised by letter C in the visualisations (Section 3.2.3).

The *digitalness* i.e. utilisation of digital technologies of an intervention was denoted by radial arcs where a full coloured circle (red, orange, or green) represented a 6 out of 6 score on the digital questions presented above. A fully grey circle on the other hand, represented a 0 out of 6 score on the digital questions.

All the responses were then mapped on a scale of innovation ranging from improvements to radical innovation based on the coding questions discussed earlier within this section to highlight their level of innovation (e.g. Table 10).

In order to illustrate this, let us consider the example of *Eldershine* again. Based on the coding questions developed previously (Chapter 1) *Eldershine* was categorised



## 4.7 Techniques and Procedures

### 4.7.2 Expert Interviews

In order to augment the information gathered around loneliness interventions through the SLR with qualitative insights, expert interviews with individuals who are experienced in working with older adults, were also conducted. All interview participants had come across the issue of loneliness amongst older adults during their work. Semi-structured interviews were carried out with 9 such experts. Table 11 lists the professional backgrounds / areas of expertise of the interviewees.

Interviewee N	Professional background / Area of expertise
Martin	Coordinator for a community befriending service that provides a range of services including home visits, coffee mornings, dance classes, etc. for older adults to tackle loneliness and social isolation.
Aayush	Founder and CEO of a company that develops and sells products designed to help older adults carry out videocalls using their television sets.
Seema	Research Director for a project that connects volunteers to schoolchildren across the globe digitally in a mentoring position to help the schoolchildren learn new things.
Parry	Founder and CEO of a company that provides IT services, troubleshooting, help and support to older adults interested in learning how to use computers and access the Internet.
Gillian	PhD student who runs a letter writing project that pairs older adults who experience loneliness, with students from the University as pen pals.
Kirsty	Learning and research manager for a nationwide operation that looks to create a common platform for all stakeholders working in the area of reducing loneliness.
Esther	A retired academic and a published author with several years of experience in researching dementia care.
Dr. Khanum	A psychologist working with the National Health Services (NHS) with experience in working with older adults.
Gloria	A lecturer in human computer interaction with experience in developing software that facilitates wellbeing of older adults living in care environments.

Table 11: A snapshot of expert interview participants

## 4.7 Techniques and Procedures

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These experts were recruited by sending out email requests to academics, psychologists, and other practitioners working in the field of healthcare, ageing, loneliness, etc. These areas of expertise were chosen based on the examination of literature (0). A range of techniques were utilised to recruit experts for the interviews. For instance, some experts were approached during networking opportunities at conferences, whilst others were approached through internet searches and telephone calls to community centres. Some experts were also approached via the researcher's personal network, and one interview participant referred another expert in the area from their own network. Each semi-structured interview lasted between 30 to 40 mins and contained questions about loneliness experienced by older adults, the challenges in mitigating or managing loneliness, the role that digital technologies can play in the area, etc. This semi-structured approach to conducting interviews allowed for asking questions that enabled comparison of responses across all participants, while providing the flexibility to probe in more detail certain key aspects relevant to each stakeholder (Hair et al., 2008). Some interviews were conducted face to face, while others were conducted either on the phone or using videocalling software such as *Skype* or *Facetime*.

Each conversation started by asking the interviewees to explain how their work related to ageing and loneliness, and the discussion followed on to probe their roles, and responsibilities, before investigating their motivations behind working within this area. This was then followed by asking them open-ended questions to understand their opinions on what causes loneliness in older adults, and how it can be resolved. They were also asked to highlight the key challenges, as well as opportunities for innovation that they had come across during their work. The interview also included questions around the role of digital technologies in developing loneliness interventions, and different ways of evaluating the impact of loneliness interventions in general.

### *Analysing the interviews*

Each interview was recorded and transcribed verbatim in order to help with the analysis using traditional qualitative data analysis 'coding' (Miles et al., 2013). Upon

## 4.7 Techniques and Procedures

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completing the transcription, each text document was carefully examined and first-level codes were assigned to various relevant topics discussed during the semi-structured interviews. Once this 'broad brush coding' (Siccama and Penna, 2008) was complete, a second set of narrower, more specific categories of codes were developed and applied to the relevant sections of all transcripts. This methodical approach saw the *subsumption* of various first-level codes into the second level ones, and therefore helped in identifying any patterns in the opinions of different experts. A close examination of these emerging patterns led to the development of key themes. In order to ensure that the emerging themes were relevant to the aims and objectives of the overall research, all themes were logged onto a specially designed template as can be seen in Table 12. The following table demonstrates the logging of a theme called 'resistance' emerging from the expert interviews, alongside quotes from the participants. The names and key aspects of all emerging themes can be found in Table 16 and the discussion that follows.

## 4.7 Techniques and Procedures

<b>Aim</b>	Why aren't there more radical-digital interventions?
<b>Theme Name</b>	<b>RESISTANCE</b>
<b>Example interview quotes and source</b>	<p><i>"I don't think anyone would ever tell you that that's not been a problem with something they've done with technology in healthcare. And so it feels like a very contradictory route to get to helping the isolation. Just because it is huge amounts of paperwork, which is fine, we've got that. Then it is also winning hearts and minds, we can do that, that's fine. But then everyone is just so up against it. That even if I say I am about to make a 50% efficiency saving to your time. So you're about to get a huge amount of time. All you have to do is invest 5% of your next week's worth of time to make it happen, no one's got the plasticity to do that."</i></p> <p style="text-align: right;"><b>(Aayush, entrepreneur)</b></p>
	<p><i>"Well this is a bit of generalisation from me but this is my opinion only but a lot of it is run by older people and committees and they're used to have everything as the way they are and not fluid to change, some of them don't understand that the world is not in 1980s or 1990s anymore that actually you have to open up your building and yeah change is upon you even before you know it. When you start noticing change, it is already too late isn't it?"</i></p> <p style="text-align: right;"><b>(Martin, service provider)</b></p>
<b>What does this theme mean?</b>	Resistance signifies the hesitation in moving away from convention in terms of adopting new ideas or new technology.
<b>Why is this relevant for this research?</b>	There seems to be strong opposition to ideas that call for a change in the way we do things. For example, many of the organisations that support older people are themselves run by older people who've been in that job for quite some time. Over time they become used to or comfortable in conventional ways of doing things and hence anything that is likely to throw them into the deep end is met with resistance from them. This prevents new ideas from being explored. Similarly, in private-public partnership, a tendency to propagate the status quo is found because decision makers are used to doing things a certain way. This hinders collaboration and prevents new stakeholders from engaging with the loneliness context because trying to convince people is considered a waste of time and <i>time is money</i> . Radical innovation thrives on new ideas / new stakeholders being brought into the mix so such problems will only prevent that from happening. There is also a huge amount of resistance from older adults' part in terms of adopting or trying out new technology because it is very different from the way they've always done things.

Table 12: An example of the template used to log themes emerging from the semi-structured interviews.

## 4.7 Techniques and Procedures

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In this way, experts' opinions were synthesised and analysed by identifying the most frequently recurring ideas across the interviews. A total of 10 such themes were identified and have been summarised in Section 5.3 alongside the observations that led to their development. Because the intention behind choosing expert interviews was not to build a new theory or framework, but to get a nuanced view of loneliness intervention development and deployment, a descriptive approach was used to analyse interview data. A descriptive approach to analysing qualitative data is interpretive, where core themes and patterns 'emerge' from the data, rather than conforming to pre-existing categories (Elliott and Timulak, 2005). The findings from the interviews have been discussed in detail in the next chapter (Chapter 1).

### 4.7.3 Exploring SIFAA-based interventions and selection of the trial

The term action research itself is a portmanteau of thinking and doing. While the SLR attempted to capture a snapshot of the action we have taken as a society to mitigate later life loneliness, the expert interviews tried to capture the thinking that informs this action. The action research based trial however, aimed to combine both our aptitude of thinking as well as doing.

In order to empirically test the theoretical notion of SIFAA, various radical-digital loneliness intervention concepts were developed. Both brand new interventions as well as strategies to radicalise and digitalise existing ones were explored as possible routes to take. All ideas were then recorded on a specially designed template (Table 13) to ensure that they contained crucial elements of both social innovation as well as active ageing in order to shortlist SIFAA-based concepts. The template was developed keeping in mind Manzini's take on creatively recombining two problems (represented by Problems 1 and 2 in Table 13) in a symbiotic way such that they address each other.



## 4.7 Techniques and Procedures

Idea Name		
Problem 1		
Problem 2		
Can they be 'creatively recombined' to address each other?	Yes (How?)	No (Why?)
What is the role of the older adult?	Receiving help	Offering help (How?)
		Social Innovation
		Active Ageing

Table 13: The template to shortlist SIFAA based ideas

A total of 4 ideas that combined two problems such that they addressed each other were considered. These ranged from allowing older adults to share a ride with someone who was travelling near older adults' intended destination, to constructing server farms<sup>19</sup> in rural area, such that the excess heat generated by the farms can be used to heat up older adults' homes especially during winters, in a bid to enhance their comfort-levels. The template (Table 13) allowed to screen out ideas that did not meet SIFAA criteria. For example, although developing server farms in rural areas symbiotically combines two problems, it does not promote active ageing and was therefore discarded. Another idea that looked to pair older adults with librarians, historians, and other stakeholders interested in archiving, and utilising memories and historical knowledge was considered, but not implemented in the interest of overall timescales, and resources allocated for the trial during the planning stage.

After reviewing all the concepts, an idea that looked to transform an existing incremental-physical loneliness intervention into a radical-digital one was shortlisted to be implemented (Table 14). This idea was chosen keeping in mind the time

<sup>19</sup> A server farm is a collection of computer servers – usually maintained by an organisation to supply server functionality far beyond the capability of a single machine. They often require large amounts of power to run and to keep cool.

## 4.7 Techniques and Procedures

constraints, and the ability to track the transformation of an existing intervention. The chosen idea looked to connect older adults in the UK with students in India via *videocalling*, giving the latter an opportunity to improve their English speaking skills by conversing with native speakers of the language. Through this arrangement, the research looked to probe whether older adults could themselves benefit from providing help, support and guidance to the Indian students who were keen on improving their communication skills.

Idea Name	Online Education	
Problem 1	Loneliness amongst older adults in the UK	
Problem 2	Lack of educational resources/infrastructure in developing countries.	
Can they be 'creatively recombined' to address each other?	Yes (How?)	No (Why?)
	Older adults can become English teachers for the young students as this would give the students a chance to practice their English speaking skills with native speakers of the language.	
What is the role of the older adult?	Receiving help	Offering help (How?)
	The role of older adults is of teachers, i.e. <i>providers</i> of education.	
		Social Innovation
		Active Ageing

Table 14: Logging the shortlisted idea

Having covered the *diagnosis* and *action planning* in the preceding segments of this thesis (Chapter 1), the following sections discuss how the implementation part of the intervention was carried out.

## 4.7 Techniques and Procedures

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### *The action research based trial*

This study was based in the Manchester area, UK. The action research based trial was carried out with an existing community engagement charity organisation that coordinates weekly lunch sessions in a local pub for anyone who feels socially isolated or lonely. The pub-staff, university students and charity organisers, who all volunteer on the day, serve lunch and beverages to the 'clients'. Nearly 20 clients attend these sessions every week and spend approximately 3 hours of the afternoon in the pub *catching-up* over food. With it being a local community engagement initiative, some clients happened to be neighbours, friends or acquaintances and their discussions involved a variety of topics ranging from the local news to their experiences of common medical conditions, etc. at the time of the trial. For example, 4 of the attendees had gone through knee replacement surgeries at the local hospital within the last year and they often discussed their experiences of having undergone this medical procedure.

At the time of this study, the weekly lunch sessions had been running for nearly 2 years and all the clients but two were over the age of 60 years with the oldest one being 97 years old. The youngest client had mobility, dexterity and speech difficulties, and being wheelchair bound and living alone, he attended these sessions as he was prone to experiencing loneliness, and feeling socially isolated. Nearly 70 per cent of the clients were female.

This intervention (the weekly lunch sessions) provided an ideal opportunity for SIFAA-based experimentation in its *raw*, incremental-physical form. Due to the sensitive nature of the project, the researcher chose an ethnographic approach where he used the participant observation technique, by working as a volunteer at the weekly lunch sessions. This allowed for effective rapport establishment with the clients and also ensured that the research aims and objectives could be explained to the participants in detail in a comfortable environment. At the same time, 6 University-level students based in India who were interested in practicing their English speaking skills were recruited. There were 4 male and 2 female students who participated in the study. The students were not enrolled in a specific English-

## 4.7 Techniques and Procedures

speaking programme but were recruited through a research lead in India. The Indian research lead is an Assistant Professor at the participating students' university, and recruited the students by talking to them about the idea. Students who expressed an interest in improving their English-speaking skills through the trial were approached and included in the study upon providing informed consent (See Appendix).

As good practice to safeguard older adults as well as students, contact details were withheld from both parties, and all communication between them was channelled through the organisers. Also, one-to-one communication between an older adult and a student was not allowed. Ethnographic fieldwork was carried out during the lunch sessions over a period of 45 weeks. In order to succinctly capture and present the actions and insights from this experimentation, Susman and Evered's (1978) model of action research was adapted as can be seen below (Figure 19).

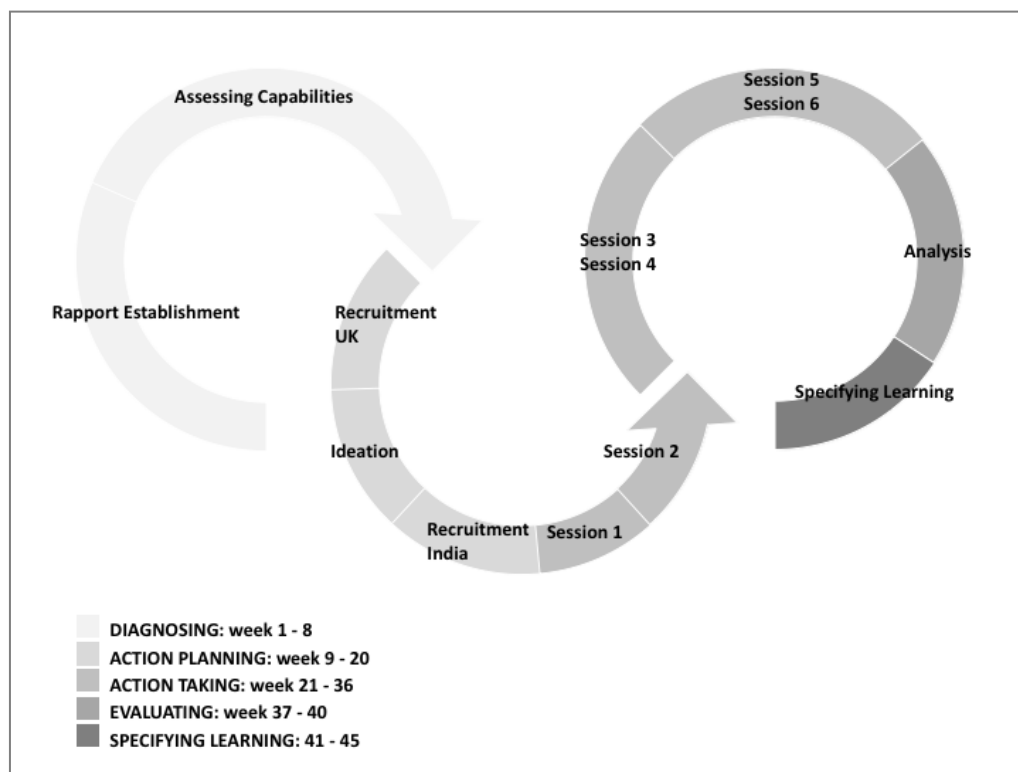


Figure 19: Implementing the prototype

## 4.7 Techniques and Procedures

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This chapter only details the early methodological part of the action research cycle i.e., *diagnosing*, *action planning*, and *action taking*. *Evaluating* and *specifying learning* will be discussed in the following chapter (Chapter 1).

### **Diagnosing (week 1 to 8)**

This time was utilised for acclimatisation to the research environment (the intervention) through volunteering at the weekly lunch sessions. This involved serving food and drinks and having informal conversations with the clients. Being 'situated' in the context (Suchman, 1987) allowed for ethnographic observations of how the intervention operated and also provided an invaluable opportunity to establish rapport with the clients. This time was also utilised in understanding how the attendees perceived digital technologies in line with their varied capabilities. For example, through participant observations, it was found out that one of the clients had been a computer teacher before his retirement but he was not very confident with using smartphones.

### **Action Planning (week 9 to 20)**

Discussions were had with individuals who expressed a desire or willingness to be involved in the research activity. Through ethnographic observations, it was noticed that a certain part of the pub was not utilised during these lunch sessions and it seemed to be reasonably quiet to have conversations. In the ideation session on how to run the intervention, that *corner* of the pub was considered to be a suitable place to install the intervention. The pub had a public wireless Internet connection (Wi-Fi) that was helpful in connecting to the Internet. Interested participants were showed how to use iPads to make videocalls (Figure 20). A group of adult students (University level), who were willing to participate in the study were also recruited in India.



Figure 20: The action research based trial setting showing older adults learning how to use iPads.

### Action Taking (week 21 to 36)

This stage formed the core of the *action* research approach. The SIFAA-based intervention was prototyped over 16 weeks and a total of 6 videocalling sessions were carried out during the trial (Figure 19). A mutually convenient time for both parties (older adults in the UK and students in India) was set up and *Skype* was used to connect participants in the two geographical locations. These videocalling sessions were observed ethnographically and findings from each session were used to inform design choices for the session to follow. A constant iterative loop of reflection and action allowed for fine-tuning the prototype intervention over several attempts to reach a satisfactory level. A summary of the ethnographic insights and how they informed the design decisions has been discussed in the next chapter (Chapter 1).

## 4.8 Ensuring Credibility

In order to ensure that the findings from this research were ‘credible’ (Peräkylä, 2004), the ‘validity’ and ‘reliability’ of the approach were considered. Silverman

highlights, that these are the two core concerns “in any discussion of the credibility of scientific research” (Silverman, 2006 p. 281). Although most qualitative researchers acknowledge and agree with these two ‘principles’ of reliability in research, they use them ‘infrequently’, potentially due to these principles’ close alignment to positivist paradigms (Neuman, 2002). This research takes the stance that any investigator’s primary goal should be to reduce the gap between real-world data and its representation (Bapir, 2010), and that establishing and demonstrating the validity of the claims that action researchers make, involves critically examining their own practice or action, against any evidence that is available, and including external resources throughout the validation process (McNiff et al., 2003).

Action research’s validity as a research methodology has been widely questioned and criticised (Frideres, 1992, Baskerville and Wood-Harper, 1996), with ‘uncontrollability’, ‘contingency’ and ‘subjectivity’ suggested as ‘threats’ to its credibility (Kock, 2004). While *uncontrollability* signifies an action researcher’s lack of control in attempting to insert positive interventions within the research context, the *contingency* threat refers to the perceived ‘broad’ but ‘shallow’ (as opposed to ‘narrow and deep’) nature of the vast amounts of data that action research produces. The *subjectivity* threat cautions against the possible introduction of personal bias in research due to the action researcher’s deep involvement with the research context (Kock, 2004). “The potential of bias is even higher when the situation is emotionally charged, or conflict is involved” (Clune, 2009 p. 91). Kock suggests that multiple iterations of the action research cycle, specific planning around the units of analysis, and encouraging objective examination can counter these threats to action research (2004). The three threats to action research highlighted by Kock (2004) were carefully considered to ensure that the findings emerging from this research were valid, reliable, and credible.

Considering the tenet of abductive reasoning that proposes oscillating between inductive and deductive reasoning (Suddaby, 2006), elements of positivism have been included in this predominantly qualitative research, especially with regards to evaluating the validity and reliability of this research. For example, Section 5.2.2 discusses the statistical correlation between level of innovation and the usage of

digital technologies while analysing interventions identified during the SLR. Such quantitative modes of analysis generally associated with positivism, were helpful in interpreting possible correlations between digital technologies and radical innovation in the context of loneliness intervention design.

### 4.8.1 Validity, Reliability and Generalisability

Action researchers can differentiate between internal as well as external validity in order to highlight the credibility of their research (Popplewell and Hayman, 2012). Through internal validity, a researcher can demonstrate the validity of their research to themselves and their research team, whereas external validity involves demonstrating it to others outside the research project, such as their own organisation, their peers, and the wider public.

Popplewell and Hayman suggest that ‘triangulation’, i.e. the use of more than one method or source to cross check findings, helps in establishing internal as well as external validity (2012). By using a multi-method approach to addressing the specific research questions, in the form of expert interviews, SLR, and an action research based trial, this thesis demonstrates the use of such triangulation. Additionally, Popplewell and Hayman argue that, “The ability and willingness of the researcher to exercise reflexivity and critique *themselves* is integral to ensuring (*internal*) research validity in action research” (2012 p. 12). Such objective and reflexive attitude to action research also enhances the reliability of research findings. Sagor suggests that action researchers continually need to ask themselves whether the information emanating from their research is an *accurate representation of reality?*; and whether they can think of any reasons to be *suspicious of its accuracy?* (2000). Following Susman and Evered’s five stages of action research (1978) ensured that this research was planned using a phased approach wherein each *stage* culminated in self-critique and engaging in ‘reflective practices’ (Schön, 1983) such that the insights emerging from each phase informed the implementation of the following one. External validity of this research was achieved by utilising ‘conventional peer-review mechanisms’ (Popplewell and Hayman, 2012) such as publishing and presenting research findings at peer-reviewed academic conferences, throughout the duration of the study.



Feedback from these engagements was duly incorporated into the study. For example, during one of the early presentations of this research at an academic conference, a rich discussion about the very ‘discrete’ nature of the coding categories (physical vs. digital) (Section 3.2.3), led to a revision to account for more flexibility and ‘fluidity’ in these classifications (Section 3.5 and Section 4.7.1).

Additionally, reliability was also warranted by limiting ‘ambiguity’ within the coding categories (Krippendorff, 2004). For example, the coding categories were refined over several iterations by involving an impartial professional researcher to code a set of data independently. 11% of the interventions were coded by the *intercoder* (the impartial professional researcher) as well as the author and coding questions and categories were refined through discussions amongst them until a ‘moderate to good inter-rater agreement’ (Landis and Koch, 1977) was achieved, i.e. a ‘Cohen’s Kappa’<sup>20</sup> (Smeeton, 1985) value of 0.69. For this review, a moderate to high agreement between the researcher and the intercoder was regarded a suitable level of agreement, given that there were 16 coding questions for each intervention. Once this consensus was achieved, the coding strategy was finalised and applied to all the remaining dataset.

Coghlan and Brannick argue that action research’s credibility should not be adjudged on the basis of ‘conventional’ measures such as the validity and generalisability<sup>21</sup> of its findings. They suggest that action research should be evaluated on its own criteria such as the *quality* of the collaboration between the action researcher and the research participants, the action researcher’s ability to exercise reflexivity and being transparent about the choices he or she makes during the research process, and the contribution of research to sustainable change (2014). “Coghlan and Brannick recognise that all these issues are important but, for them,

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<sup>20</sup> Cohen's kappa coefficient or ‘k’ is a statistic which measures inter-rater agreement for qualitative (categorical) items. It is considered to be a more robust measure than simple percent agreement calculation, since it takes into account the occurrence of agreement by chance. A ‘k’ value less than 0.20 represents poor agreement between the inter-raters. Conversely, a ‘k’ value greater than 0.81 suggests a ‘very good’ level of agreement such that a ‘k’ value of 1 denotes an almost complete agreement between the inter-raters.

<sup>21</sup> Generalisability is the ability of repeating or generalising research findings within and outside of the specific context being studied.

good action research is: the ability to tell ‘a good story’ (e.g. explain what happened); provide ‘rigorous reflection on that story’ (e.g. provide a good explanation of how you made sense of what happened); and ‘an extrapolation of usable knowledge or theory from the reflection on the story’ (e.g. providing a good answer to the ‘so what’ question)” (Popplewell and Hayman, 2012 p. 13).

The usefulness, and generalisability of findings from action research also need to be taken into account. Some researchers argue that findings from action research are ‘local’ in nature and are therefore difficult to up-scale, apply elsewhere, or be generalised (Brydon-Miller et al., 2003, Huang, 2010). However, action research should not be seen as an exercise aimed at achieving generalisability of research findings. As long as an action researcher can ensure a sense of *internal generalisability*, i.e. they are able to repeat their research findings within the research setting under investigation, it is adequate for ensuring the ‘quality and rigor’ of action research (Popplewell and Hayman, 2012). Hence, this thesis does not make any claims about the generalisability of its findings and instead focusses on telling an honest, valid, reliable and context-specific ‘story’ of developing and experimenting with a SIFAA-based loneliness intervention.

However, while the action research based trial carried out in this study may or may not be generalisable itself, SIFAA as a framework offers a broad approach to developing innovative loneliness interventions for older adults. Also, some findings from this research come closer to generalisability than others. For instance, having been grounded in a methodical approach to identifying, and analysing loneliness interventions, the patterns emerging from the SLR can be regarded as being more generalisable than, the insights emerging from the expert interviews.

## 4.9 Summary

This chapter provided a step-by-step detailed account of the methodological choices that guided this research. Beginning by highlighting the pragmatic orientation of this thesis, this chapter proceeded to argue that all knowledge is an outcome of an

iterative cycle of *thinking and doing* things. It highlighted how action research, the guiding methodology of this research, can blend in with action anthropology to produce context-specific knowledge which can be used to design loneliness interventions for older adults. This chapter enlisted the specific research methods used in this study i.e. systematic literature review, expert interviews, and an action research based trial and provided a rationale for why these methods are likely to yield valid and reliable outcomes.

It must be noted that this research aims to contribute to the knowledge-base of designers interested in developing innovative solutions to social problems. The research process of this study is grounded in Herbert Simon's classic definition of design that calls for changing of 'existing' situations into 'preferred' ones (1988). While budding designers can have a tendency to jump to problem solving (Stojcevski, 2014), which is closely aligned to what Simon calls a 'preferred' scenario, this thesis considers understanding the 'existing' situation equally important. The methodological decision of systematically reviewing *existing* loneliness interventions, talking to experts in the area, as well as imagining possible solutions, and experimenting with one using iterative prototyping demonstrates the holistic approach to design adopted in this research.

This chapter also highlights some key conceptual manoeuvres made during this study. For example, the coding method developed for the SLR, the inclusion of interventions found on *Twitter*, and the visualisations created for this research represent the overall methodological contributions of this thesis. Particularly relevant is the design tool developed in this study to facilitate the identification, shortlisting, and development of SIFAA-based loneliness interventions (Table 13). The tool can be adapted and used by a variety of stakeholders interested in exploring and experimenting with SIFAA in future.

Also, although this chapter provides a step-by-step account of the research process in a logical and sequential manner, the actual process was somewhat 'messy' (Law, 2004) owing to the close and complex relationship between an action researcher and his research context. "My intuition, to say it quickly, is that the world is largely messy. It is also that contemporary social science methods are hopelessly

## 4.9 Summary

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bad at knowing that mess. Indeed it is that dominant approaches to method work with some success to repress the very possibility of mess. They cannot know mess, except in their aporias, as they try to make the world clean and neat” (Law, 2007 p. 3). This is reminiscent of the classic anthropological debate between ‘structure’ and ‘agency’ where one side argues that although as humans we have agency, we need structures to make sense of our surroundings, the society, and the world in general. Similarly, although the actual research process was a bit convoluted and messy, this thesis has been *structured* to facilitate easy reading and effective communication of the research process. Following convention, the next chapter will discuss the results from this study.



# Chapter 5. Results

*"Never consider yourself the cause of the results of your activities, and never be attached to not doing your duty".*

- The Bhagavad Gita



## 5.1 Overview

This chapter presents the findings from each individual research technique presented in Section 4.7; namely, the SLR, the expert interviews, and the action research based trial. The chapter has been divided into three main segments wherein each section discusses the outcomes from each of the research protocols mentioned above. The first part of this chapter discusses findings from the SLR, which was conducted to extend the preliminary review of loneliness interventions carried out previously (Section 3.2.2). It presents a comparison of interventions reviewed using a systematic approach (Section 4.7.1) with the ones found in 'grey literature' i.e. unpublished interventions and interventions published outside widely available journals (Conn et al., 2003). The second segment of the chapter offers an insight into why experts in the area, such as individuals who run loneliness interventions, academic researchers, healthcare staff, etc. feel that there is a lack of radical-digital loneliness interventions catering to older adults. This section also points out various opportunities that can be exploited to develop more radical-digital loneliness interventions for older adults. The third part of this chapter continues the discussion on 'action taking' (Susman and Evered, 1978) from Section 4.7.3, before offering a more detailed insight into how the action research based trial was evaluated ethnographically, and how those findings would be useful for designing radical-digital loneliness interventions in future. An evaluation of SIFAA as a framework for developing radical-digital loneliness interventions has been presented in Chapter 1. This chapter however, concludes with an overall discussion that collates insights from each of the research protocols, and leads up to the core proposition of this thesis, i.e. SIFAA before its strengths and limitations are elaborated further in Chapter 1.



## 5.2 The SLR

This review of loneliness interventions builds on the preliminary findings of this thesis (Section 3.2.6) by *revealing* the gap in knowledge represented by an underutilisation of digital technologies and a lack of radical loneliness intervention designs. In addition to comparing, and contrasting different types of interventions found in academic literature, this study's inclusion of grey literature in systematic literature reviews also introduced balance into the research endeavour. A total of 196 loneliness interventions were examined during this study (Section 4.7.1), and the main results from this investigation have been discussed below.

### 5.2.1 Main Outcomes

After all interventions were shortlisted, they were coded and visualised using the revised data synthesis strategy discussed in Section 4.7.1. Upon organising data in this way (Figure 21), it was found that majority (39%) of the interventions reviewed were based on *one to one* interactions between service providers and older adults. *Community based* approaches appeared to be a close second at 34%, followed by *group based* services representing 27% of the interventions reviewed. This indicated that personalised loneliness interventions were more popular than those that engaged a higher number of stakeholders.

In terms of the overall objective of the interventions, those that looked to correct the negative effects of experiencing loneliness, i.e. *remedial services*, accounted for 58% of the interventions reviewed while 24% of the interventions were found to be *supportive* in nature. The remaining 18% of the interventions that were examined were based on *preventative* methods indicating that as a society, more emphasis was laid on attempting to support or 'cure' loneliness, rather than attempting to prevent it from occurring in the first place.

Additionally, more than half (55%) of the interventions examined took an incremental approach to mitigating loneliness amongst older adults. The remaining 45% of the interventions comprised of 16% *improvements* to the basic principle or

*SWP* (Section 4.7.1) of introducing a lonely person to someone whom they can interact with, 14% *major* departures from this principle, and 15% ideas that were *radically* different to this notion. This highlighted the disparity between society's existing ways of addressing loneliness, versus using novel ideas aimed at addressing loneliness experienced by older adults.

In terms of utilising digital technologies in developing and operationalising loneliness interventions, it was found that nearly half (49%) of the interventions demonstrated the use of only 1 out of 6 of these aspects of digital technologies. Also, 6% of the interventions scored 3 or higher on the digital scale, and the mean score of interventions on the digital scale<sup>22</sup> was 1.37 out of 6. It was noticed that 72% of the interventions had some form of an online presence, either in the form of a webpage, or on online video-streaming websites such as *YouTube*. On the other hand, only 3% of the interventions utilised cloud computing.

A discussion of results from each of the coding categories in isolation has been given below to provide more specific insights regarding various characteristics of the interventions. To keep the discussion of results within the scope of this thesis, results have been presented for each of the innovation category, i.e. improvement, incremental innovation, major innovation, and radical innovation as can be seen at the bottom of Figure 21 (from left to right).

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<sup>22</sup> Six coding questions were developed to evaluate the extent of use of digital technologies in an intervention. A score of 0/6 on this scale suggests none to minimal use of digital technologies and 6/6 represents the highest utilisation of digital technologies in running the intervention. This has been discussed in Section 4.7.1

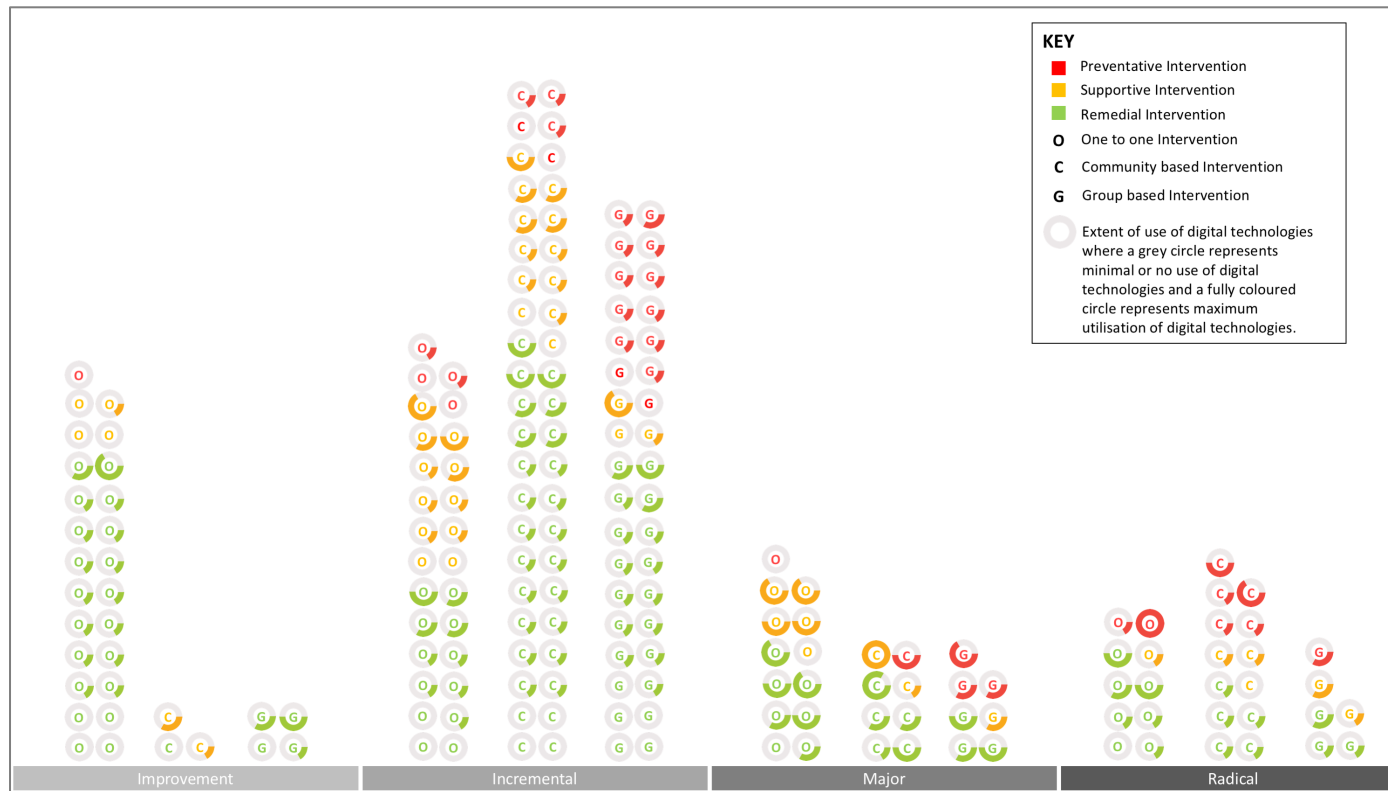


Figure 21: Visualisation showing all the interventions reviewed.

### *Improvement*

Out of the 32 interventions that were coded as improvements, 25 were one to one services, 3 were community based, and 4 were group based interventions. While conventional one to one befriending services such as *Dementia Friendship Scheme*, *Friends of the Elderly*, *Phone a Friend*, etc. comprised this category, other group and community based interventions such as *The Casserole Club*, *For Disability Mobility Bus (FDM)*, and *The Enriched Opportunities Programme (EOP)* aimed to achieve similar goals to befriending services in a more communal setting. For example, *The Casserole Club* encouraged people living in the same community as older adults, to cook for them in order to help older adults who are not normally able to do so, eat healthy home-cooked food. This 'communal' act of cooking for neighbours brought people together and introduced older adults who might be experiencing loneliness, to someone that they can potentially befriend, and rely on, for help and support.

Also, in terms of their overall objective, 25 *improvement* services were found to be remedial in nature, while 6 of these interventions were supportive, and the remaining 1 intervention was preventative. The remedial services within this category ranged from interventions aimed at fostering friendships between older adults and volunteers such as in *British Penpals* and *Good Company*, to services that offered guidance and support to older adults via volunteers who performed the role of *Active Mentors*. Other services such as the *Homelessness Intervention Programme*, which was aimed at preventing and addressing homelessness issues faced by older adults, was not specifically designed to alleviate loneliness or social isolation. However, its evaluation demonstrates the supportive role that the intervention played in moderating the problem of loneliness experienced by older participants. The only preventative intervention within this category was a *Home Visit Programme* developed for older people with poor health status. As part of the home visit activity, nurses gathered data about loneliness experienced by older adults to assess their overall quality of life. The intervention did not aim to remedy loneliness or offer help and support to individuals experiencing it and only collected the information for

research purposes, contributing to knowledge that can be used for developing preventative measures.

In terms of utilising digital technologies, 10 interventions out of 32 did not show any signs of harnessing digital potential. For example, programmes such as *Cognitive Behavioural Therapy (CBT)* or *Interpersonal Psychotherapy (IPT)*, which were run as curative sessions, did not require the usage of digital technologies for their operation. Furthermore, 17 out of 32 interventions within this category displayed the use of only 1 aspect of digital technologies, mostly in the form of having some form of online presence, either as a website or a *YouTube* video. For instance, although *Lifestyle Engagement Activity Program (LEAP)* did not require the use of digital technologies for its operation, it had a *YouTube* video providing an overview of the intervention<sup>23</sup>. Additionally, 3 interventions scored 2 on the digital scale and 1 intervention each scored 3 and 4 on the scale. The most 'digital' intervention in this category, with a score of 4 on the digital scale, was the *Community Network*, a social enterprise and a charity aimed at creating 'talking communities' by bringing people together on the phone as well as online.

### *Incremental Innovation*

With 107 interventions being classed as *incremental*, this coding category contained the largest number of interventions out of the four levels of innovation coded for during this study. 27 out of these were one to one interventions, 44 were community based, and the remaining 36 interventions were group based. Due to the large number of interventions within this category, some level of heterogeneity was observed within each sub-category. For example, one to one incremental interventions ranged from services like a *Tai Chi Exercise Programme*, aimed at improving physical wellbeing of older adults but also at the same time having a positive effect on their perceived loneliness, to *Silverline*, which was a phone based helpline service for older adults that offered general information relevant to the older

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<sup>23</sup> At the time of the review, the *YouTube* video had been viewed more than 200 times since being uploaded on 23/09/2015. Please follow the link to view it online. <https://www.youtube.com/watch?v=roRa7peVQ> ; Accessed 30/11/2016

demographic, as well as offered befriending services. Similarly, community-wide interventions such as, *Community-based Early Psychiatric Interventional Strategy (CEPIS)* and *Time for Life (TfL)* varied widely in the way they dealt with loneliness amongst older adults. While CEPIS relied on community nurses monitoring the health and wellbeing of older adults in their area, *TfL* aimed to get older people involved in activities and clubs such as book reading, arts and crafts, coffee mornings, etc. to help them overcome their loneliness. Group based interventions in this category were generally built around bringing people together over activities such as sports in *Sporting Memories* and *Walking Football*, or in arts and crafts in *Voyage*, which was a choir of older adults, and *Magic Me Arts*, an intergenerational arts project.

It was also noticed that 59 out of 107 incremental interventions were remedial in nature i.e. focussed on correcting the negative effects of experiencing loneliness. 26 out of the remaining 48 interventions were supportive, and 22 were preventative in nature. Some interventions in the remedial category aimed to involve older adults in activities such as gardening, exercise, or eating together through interventions such as *Green Prescribing*<sup>24</sup>, *Physical and Leisure Activity Programme*, and *Friendship Lunches* respectively, to introduce them to opportunities for socialising. Other remedial interventions looked to provide older adults with some form of support or guidance to help them overcome their loneliness such as the *The Furzedown Project* which was a community transport scheme, or various social prescribing schemes<sup>25</sup> such as the *Yorkshire and Humberside Social Prescribing Project* or *Rotherham Social Prescribing Scheme*. On the other hand, supportive incremental interventions comprised of ideas such as *The Rural Coffee Caravan Information Project* which provided an opportunity to socialise over food and beverages, while disseminating information that might be relevant to rural and isolated communities, or *Springboard*, an intervention that liaised with Fire and Rescue Services (FRS) to organise home

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<sup>24</sup> Research by The James Hutton Institute carried out for the Scottish government suggests that GPs and medical professionals could help tackle loneliness by giving out 'green prescriptions', i.e. encouraging people to exercise more outdoors. More information can be found here: <http://www.bbc.co.uk/news/uk-scotland-37184455> ; Accessed 30/11/2016

<sup>25</sup> Social prescribing aims to link people with support available within their community allowing GPs to recommend non-medical referral options that can support an ongoing treatment.

visits by staff members to local older residents offering them help, support, and guidance based on an assessment of their needs. Additionally, apart from general wellbeing initiatives and social clubs for older adults such as the *Rochdale Circle*, or *Brendoncare Clubs*, preventative interventions also comprised of services that encouraged older adults to make lifestyle adjustments in response to their growing age to avoid scenarios where they may find themselves isolated or lonely in future. For example, *Spring Retirees Activity Centre (RAC)*, was a retirement home that focussed on keeping its residents active, by engaging them in activities of learning and leisure.

23 out of 107 incremental interventions displayed no signs of utilising digital technologies.<sup>26</sup> Again, interventions such as *Psychosocial Group Rehabilitation* and *Peer Counselling Programme* appeared to be curative in nature and did not rely on digital technologies for operation. On the other hand, although interventions such as *Buddy Hub* or *Know My Neighbour* did not require digital technologies to run, they had websites acting as gateways to access resulting in a score of 1 on the digital scale. It is interesting to note that interventions such as *Life Time Warrington* that scored 2, and *Silver Robin*, scoring 3 appeared to be similar in that they both offered help and support to older adults interested in learning how to use computers. The key difference between the two interventions was that *Life Time Warrington* aimed to connect older people to services, such as gardening, household repair, and maintenance work, etc. whereas *Silver Robin* was a web-based networking platform for older adults to share *digital* space with like-minded older adults, thereby scoring an extra point over *Life Time Warrington* for enhancing older users' social network digitally. Finally, 2 interventions that scored 4 on the digital scale (the highest for this category) were *Finding Your Funny*, a University level course that teaches stand-up comedy to older adults, and *Counselling Directory*, which was an online repository of services relevant for older adults such as therapists, care homes, and other facilities.

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<sup>26</sup> It should be noted that a score of 0 on the digital scale does not mean that the intervention does not utilise digital technologies at all. It merely indicates the lack of evidence on face value.

### *Major Innovation*

28 interventions were classified as being representative of major innovation and this category had the lowest number of entries. Half of these interventions, i.e. 14, were one to one interventions, while there were 7 interventions each in the community based as well as group based category. The one to one interventions representing major innovation were services such as *Sideboard* and *Esc@pe*. Instead of directly offering digital services to older adults who may not be as technologically savvy, *Sideboard* offered them access via their family members or friends, i.e. their 'supporters' who are more comfortable with handling digital technologies. Within community based services, interventions such as *DropBy*, a web-based service which aimed to build a community (online) of people over the age of 60 years, can be contrasted with *Time to Shine*, which worked towards strengthening community networks within Leeds to help older people feel more included and less isolated. Although both interventions were community based initiatives, they took very different approaches to addressing the problem. The group based interventions had a strong educational theme as interventions in this category were dominated by the ones aimed at teaching older adults how to acquire new skills such as using the Internet in the *ANU Wellbeing Study*, or learning academic subjects of their choice at *The Open Universities for Senior Citizens (Universidade Aberta para a Terceira Idade i.e. UnATI)*.

Remedial services continued to be the dominant type within this level of innovation as well with 15 out of 28 interventions being identified as remedial services, while the supportive ones accounted for 8, and 5 remaining interventions were coded as being preventative in nature. Interventions such as *Mindings* and a couple of *Videoconferencing Programmes* that used digital technologies to connect older adults to their friends and family were classed as remedial services within major innovation. Other interventions such as *Assisting Carers using Telematics Interventions to meet Older Persons' Needs (ACTION)* that connected carers to their older patients using digital technology were coded as being supportive in nature. *The Second Half Centre*, an intervention that offered a range of services such as computer



classes, arts gatherings, exercise sessions, etc. to older adults constituted the preventative category as it did not specifically aim to alleviate loneliness or offered support to someone experiencing it.

It was noticed that a higher proportion of interventions scored 2 or more on the digital scale than the previous two categories of improvement and incremental innovation. For example, only 3 out of 28 interventions scored a 0 on the digital scale and only 2 interventions scored 1. Also, 8 interventions each scored 2 and 3 on the digital scale. Interventions such as the *Third Age University Programme* scored 2, and *Vital Aging-M* that focused on multimedia and e-learning to promote 'active ageing' amongst older adults scored 3. *Pepper*, an interactive robot designed to have conversations with its users scored 4. One intervention by the name of *Seniornet*, scored 6 out of 6 and demonstrated a very high utilisation of digital technologies. *Seniornet* was an intervention that provided education for and access to computer technologies to older adults. An exploration of *Seniornet's* website suggested that it allowed users to network with each other, offered email services, gathered data from users' Facebook and Twitter accounts, etc. thereby exploring various possibilities of digital technology.

### *Radical Innovation*

10 out of the 29 radical interventions were found to be one to one in nature, 13 were community based, and 6 interventions were classed as being group based. Although this category only had 29 interventions, this grouping displayed a lot of variation. For example, one to one radical interventions included services such as *Homeshare Oxford* and *PARO*, which were drastically different in how they address loneliness (see Section 3.2.6), and at the same time this category also contained interventions such as *Chat Mats*. While *Homeshare Oxford* paired older adults with younger tenants, *PARO* was a robotic Seal designed to bring the known benefits of animal therapy to care environments. *Chat Mats* on the other hand, were coffee mats designed to be used in cafés and restaurants that indicated whether someone is open to having a conversation with strangers or not at that moment in time. It did not target older adults directly but tried to usher in a behavioural change within the community

such that older people could feel comfortable and confident about approaching strangers for conversation, should they feel lonely or isolated in a public place. Similarly, community based initiatives included a *Volunteering* programme for older adults, and *Culture Champions* that allowed older adults to contribute to the society, as opposed to being perceived as someone who does not have much to offer to the society anymore. Also, radical community based interventions such as *The Man on The Moon* Christmas advertisement, *Breaking the Spell of Loneliness* music album, and *The Age of Loneliness* television documentary were not solely targeted at individuals experiencing loneliness. They were designed to engage the wider community in a discussion about this prevalent social problem by using creative arts. Group based interventions in this category were equally creative, with interventions such as *Bristol LinkAge Flashmob*, an impromptu street dance performance organised and delivered by older people to challenge the stereotypical perception of older adults in the community, to *Old School*, where older adults were paired with younger schoolchildren to offer mentorship and guidance to the younger generation.

As was the case with improvement, incremental, and major innovation categories, remedial services were the dominant type within radical interventions as well. Nearly half the radical interventions, i.e. 15 in total were remedial, while 6 were supportive and 8 were preventative in nature. Remedial interventions such as *Furry Tales* aimed to bring the known benefits of animal-assisted therapy to older adults experiencing loneliness, and *Friends of the Elderly (Christmas Gift Guide)* targeted the wider community by suggesting suitable Christmas gifts that can be bought for older adults experiencing loneliness during the festive season. On the one hand, supportive interventions included the *REPRINTS (Research of Productivity by Intergenerational Sympathy)* study which paired senior volunteers with public elementary schoolchildren such that the older adults could read picture books to children, and on the other hand, interventions such as *Spice Time Credits* also played a supportive role in managing loneliness amongst older adults by promoting a culture of sharing and volunteering within a community. *Spice Time Credits* is a time-banking initiative that uses time as a currency such that participating members can earn or spend their time-credits by participating in a variety of community activities. Preventative radical

interventions included large scale movements such as *Men in Sheds (Better Shed Than Dead)* that allowed older men to offer support with various DIY (do-it-yourself) jobs in the community that they live in, and the more local initiatives such as *The Good Gym* an intervention that pairs keen runners with older adults (Section 3.2.4).

In terms of utilisation of digital technologies, 1 intervention each scored 6 and 4 on the digital scale. With 4 interventions scoring 2 on the digital scale, it was the second most popular score. The majority, i.e. 18, radical interventions scored 1, and 2 interventions scored 0. One of the 2 interventions that scored 0 on the scale, was *Silver Stories*, that allowed young children from an infant school to read a short story or a poem to an older adult experiencing loneliness. Face-to-face interventions such as *Age UK County Durham's Come Eat Together* project, which got older adults together to eat, cook, and even grow food for themselves as well as others, and *Writing Back Leeds*, which paired older adults with students from the University of Leeds in a letter writing project, both utilised digital technologies in the form of having a website, and therefore scored 1 on the scale. It is interesting to note that two interventions scored 3 and 6 each on the digital scale, but were similar in their approach. For instance, both *Speaking Exchange* which scored 3, and *School in the Cloud* which scored 6 mitigated loneliness by pairing older adults in the education of younger students via videoconferencing. Another intervention scoring highly on the digital scale was *Breaking the spell of loneliness* which is a music album available to download online that aims to highlight the issue of loneliness as a serious health problem on the global platform by using music.

### 5.2.2 Analysis

Having 4 different types of coding categories for the interventions, as well as additional records such as the sources of intervention data, and years of publication, meant that numerous permutations and combinations of how the data could be analysed and presented, were possible. However, to keep the inquiry within the scope of this thesis, and to present a coherent view of the findings, the analysis was primarily concerned with data gathered around the level of innovation, and the use of digital technologies, as can be seen from the presentation of the results above (Section

5.2.1). This analysis also highlights the positive correlation between the level of innovation and the use of digital technologies in designing and deploying loneliness interventions, and also highlights how certain existing interventions could be tweaked to enable their migration from representing incremental innovation to radical innovation for example. This analysis also points out the value of including grey literature in systematic literature reviews to get a contemporary view of latest work in the area under investigation.

The analysis of patterns emerging from this data demonstrates that an exhaustive review of contemporary loneliness interventions can uncover insights that may be useful to designers interested in developing such services. For instance, a visual scan of Figure 21 establishes that the gap in research, i.e. the underrepresentation of radical-digital loneliness interventions identified in the preliminary review (Chapter 1), is consistent with this larger, and systematically selected sample of interventions. This provides evidence, and a rationale for the design community to ‘invest’ more resources in experimenting with radical-digital interventions, either in pursuit of design-knowledge, or to rule out their suitability in mitigating later life loneliness. It is noteworthy that this review also identified an underrepresentation of major innovation in developing loneliness interventions. This further strengthens the call to move away from conventional interventions and highlights the need to experiment with those that are substantially different to the standard way of mitigating later-life loneliness.

In addition, when the elements of ‘radical’ and ‘digital’ were examined collectively, it was found that only 15% of the overall interventions were classed as radical, and out of these 29 radical interventions, only 5 interventions (17%) scored 3 or more on the digital scale. Also, at 1.37 (out of 6), the overall mean digital score of all the 196 interventions also indicated an underrepresentation of digital technologies in this area. Although conceiving, and implementing radical interventions may not prove to be “straightforward” since it requires out of the box thinking (Hage, 2011 p. 55), introducing certain elements of digital technology, such as having a website, or an online video, could be relatively easy to achieve and could possibly expand the reach of loneliness interventions, or change the way in which

## 5.2 The SLR

they primarily operate. This is an important observation because a weak but positive correlation between the utilisation of digital technologies and the level of innovation was found when the interventions were analysed (Table 15).

			Level of Innovation	Digital Score
Spearman's rho ( $r_s$ )	Level of Innovation	Correlation Coefficient	1.000	.311**
		Sig. (2-tailed)	.	.000
		N	196	196
	Digital Score	Correlation Coefficient	.311**	1.000
		Sig. (2-tailed)	.000	.
		N	196	196

**\*\*.** Correlation is significant at the 0.01 level (2-tailed).

**Table 15: Correlation between digital scores and the level of innovation.**

### *Exploring the relationship between radical innovation and digital technologies*

Although faint, this positive correlation indicates that the use of digital technologies can potentially help interventions in climbing up the innovation ladder from *improvement* to *radical* categories. An indication of this somewhat weak correlation can be found by taking a closer look at the 'major' innovation category in Figure 21 and comparing it to 'improvement' and 'incremental' groupings in the same figure. It appears that a larger percentage (nearly 50%) of the interventions within this category scored 3 or higher on the digital scale in comparison to the other two, suggesting that utilising various aspects of digital technologies can possibly help interventions in steering away from the dominant incremental innovation approach, thereby allowing the exploration of other types of interventions. However, it is important to note that further research is required in this area to establish the true nature of this relationship between the level of innovation and the use of digital technologies in developing loneliness interventions because this correlation, although positive, does not imply causation.

### *Enabling migration of loneliness interventions*

Upon examining the details of how interventions operated, it was found that some of them had the potential to migrate from one category to the other by making small adjustments to their *modus operandi*. For example, in terms of how they operate, it was found that *Writing Back Leeds*, a radical intervention was not that different from *British Penpals*, which was an improvement. Both these projects established contact between two parties through letter writing. The crucial distinction that placed them on the two extremes of the innovation scale (from improvements to radical), was the notion that through *Writing Back Leeds* older participants offered support to students in Leeds who were in many cases, themselves experiencing isolation having moved to a new city for higher education. Often older adults' local knowledge about Leeds anchored conversations between the two parties. *British Penpals* on the other hand, sought volunteers who were willing to befriend older adults over letter writing. Perhaps by making small adjustments to their intervention wherein older adults could offer some form of support to another party who could potentially benefit from it, *British Penpals* could undergo a 'radical' transformation.

Similarly, in terms of exploiting the digital potential, interventions that were highly comparable in terms of the way they operated, displayed variation in the extent to which they utilised digital technologies. For example, *Speaking Exchange* and *School in the Cloud* were both radical interventions that paired students to mentors via videoconferencing. While *Speaking Exchange* paired students in Brazil with older adults in a care home in the USA, *School in the Cloud* did not have any age restrictions in terms of the non-student end of participation. Anybody could volunteer to be a 'granny' (mentor) although they reported a high participation of older adults in their intervention as *grannies*. This meant that the utilisation of digital technologies was higher in *School in the Cloud* due to the inclusion of younger mentors, who could be potentially more technologically savvy than their older counterparts. Also, the key differences in their digital scores can be attributed to their individual scopes. While *Speaking Exchange's* website suggested that they were in their 'trial period' at the time of this study, *School in the Cloud* had been an ongoing project with several years of

experience and research leading up to its present form. Therefore, *Speaking Exchange* utilised digital technologies not only to operate the intervention, but also to gather data that would improve their services and boost their already global scale further. This comparison suggests that interventions can have a diverse set of needs, and thus can utilise digital technologies to varying degrees depending on their aims and objectives.

### *Extending systematic literature reviews*

Methodologically speaking, extending the SLR beyond conventional peer-reviewed academic publications, and into the ‘grey’ literature, yielded some noteworthy insights. For instance, examination of grey literature resulted in nearly double the amount of interventions found in the academic sources. Also, out of 7807 publications found by searching 4 different academic databases (Section 4.7.1), only 63 interventions met the inclusion criteria (Figure 17), whereas on the other hand, an examination of the latest 1000 tweets from just one Twitter handle (@endlonelinessuk) resulted in 61 interventions that were included in the study. This significant difference in rejection rates makes a case for including grey literature in studies based on systematic review of literature. However, in order to limit ambiguity and haphazardness of data, researchers investigating grey literature should ensure that they choose their sources judiciously, and ensure that their step-by-step approach to identifying literature (in this case interventions) is recorded and expressed clearly so that it can be replicated by other researchers if required. For example, in this study the examination of known, and publicly retrievable sources of data (CTEL website, and Twitter) allows for the application of the same research strategy by multiple researchers should there be interest in replicating the study.

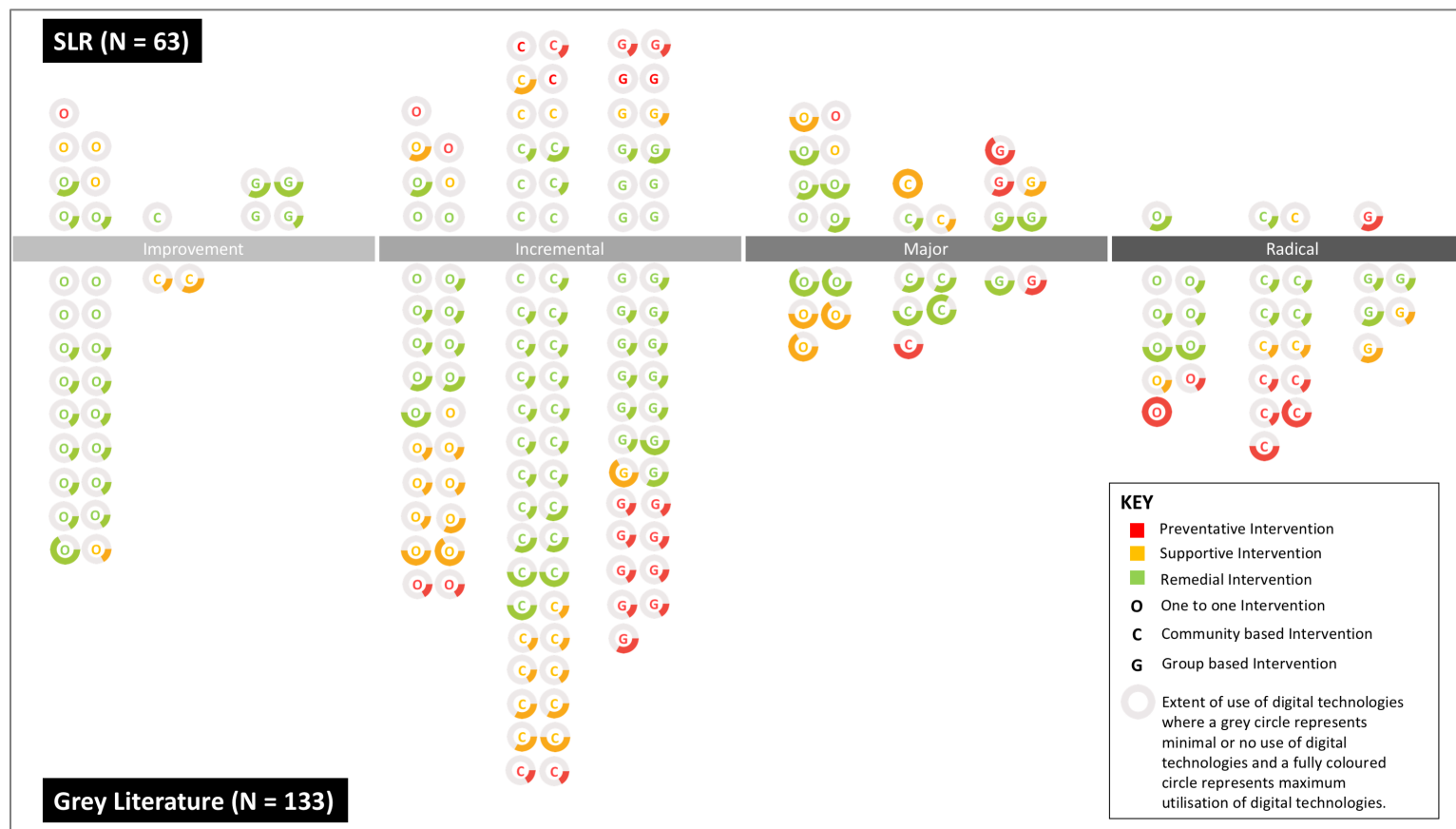


Figure 22: A comparison of interventions found using the SLR versus grey literature.



### *Highlighting the disparity between scholarly and grey literature*

Another notable insight that emerged from comparing interventions found within academic publications with the ones found in grey literature was that the majority (86%) of the radical interventions included in this study were found in the grey literature. The observation that the only radical intervention scoring 6/6 on the digital scale, i.e. *School in the Cloud*, was identified through an examination of grey literature highlights the importance of including grey literature in SLRs. This exercise also highlighted how certain interventions that were not published in academic journals could still potentially reach a vast audience including academics through digital technologies. For instance, the @endloneliness Twitter handle for CTCL had more than 14,500 'followers' on Twitter<sup>27</sup>. Therefore, any interventions broadcast on @endloneliness Twitter account could be seen, appreciated, and digitally 'shared' by users who followed CTCL's Twitter activity. Similarly, the *Man on the Moon* Christmas advertisement found in grey literature, had been viewed more than 75,000 times on YouTube<sup>28</sup>. Thus, grey literature helped in identifying novel interventions such as *Men in Sheds*, *Bristol LinkAge Flashmob*, *Friends of the Elderly (Christmas gift guide)*, *The Age of Loneliness Documentary*, etc. that did not have an academic research angle associated with them, and their inclusion provided a better idea of diversity within the radical innovation category.

Finally, when the interventions found in grey literature were examined separately, it was found that at 13% of the total interventions found in grey literature, radical interventions outnumbered the 'major' category by 7%. This is different to the SLR approach where radical interventions only accounted for 6% of the total and contained the least number of interventions out of the four categories. Therefore, by ignoring some of these 'innovative' loneliness interventions, scholarly literature overlooked the ground-reality of the solution space. These findings further

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<sup>27</sup> See here: <https://twitter.com/EndLonelinessUK/followers> (accessed 26/09/2017)

<sup>28</sup> The YouTube video can be found here: <https://www.youtube.com/watch?v=rW36ZfTvp3U> (accessed: 26/09/17). There are other channels showing the same video on YouTube and other online platforms, so the actual number of views is much higher.










strengthen the case for including grey literature in such comprehensive reviews not only to provide a more ‘contemporary’ and balanced perspective to the overall study, but also to be *inclusive*, and consequently more representative of developments in the area.

Having presented key results from the examination of literature, the following section discusses the findings from interviews with experts to offer a more nuanced understanding of loneliness, and various strategies used by experts to mitigate it.

## 5.3 Expert Interviews

This section of the chapter introduces the results of the expert interviews, to progress and deepen the understanding as to why radical-digital loneliness interventions for older adults were underrepresented, and to suggest how that knowledge could potentially be used to redress this void. The nine experts interviewed represented the business sector, the public health sector, the third sector (voluntary and charity organisations), and the education sector (Figure 23). In order to protect the identity of research participants, all data has been anonymised by using fictitious names throughout the thesis.

## 5.3 Expert Interviews

 <p><b>Esther</b></p> <p><b>Occupation:</b> Retired Lecturer, Dementia Studies</p> <p><b>Sector:</b> Education</p> <p><b>Mode of interview:</b> Online (via Skype)</p>	 <p><b>Gloria</b></p> <p><b>Occupation:</b> Lecturer, Human Computer Interaction</p> <p><b>Sector:</b> Education</p> <p><b>Mode of interview:</b> Online (via Skype)</p>	 <p><b>Gillian</b></p> <p><b>Occupation:</b> PhD Researcher, Arts</p> <p><b>Sector:</b> Education</p> <p><b>Mode of interview:</b> Face-to-face</p>
 <p><b>Dr. Khanum</b></p> <p><b>Occupation:</b> Psychologist, National Health Services UK</p> <p><b>Sector:</b> Public Health</p> <p><b>Mode of interview:</b> Online (via Skype)</p>	 <p><b>Martin</b></p> <p><b>Occupation:</b> Coordinator, Community Befriending Service</p> <p><b>Sector:</b> Charity</p> <p><b>Mode of interview:</b> Face-to-face</p>	 <p><b>Seema</b></p> <p><b>Occupation:</b> Research Director, Voluntary Organisation</p> <p><b>Sector:</b> Charity</p> <p><b>Mode of interview:</b> Online (via Skype)</p>
 <p><b>Kirsty</b></p> <p><b>Occupation:</b> Learning &amp; Research Manager, Charity Organisation</p> <p><b>Sector:</b> Charity</p> <p><b>Mode of interview:</b> Telephone</p>	 <p><b>Aayush</b></p> <p><b>Occupation:</b> Founder &amp; CEO, Videocalling Company</p> <p><b>Sector:</b> Business</p> <p><b>Mode of interview:</b> Online (via Skype)</p>	 <p><b>Parry</b></p> <p><b>Occupation:</b> Founder &amp; CEO, IT Services Company</p> <p><b>Sector:</b> Business</p> <p><b>Mode of interview:</b> Telephone</p>

**Figure 23: A snapshot of interviewee profiles showing the sectors they represent and how the interviews were conducted.**

### 5.3.1 Results

Findings from these interviews resulted in the development of 10 thematic areas namely, restriction, access, resistance, facilitation, reliance, independence, reservation, openness, repairing, and restoration. While some of these thematic areas highlight factors that hinder older adults' ability to explore opportunities to socialise, the other themes point at possible ways of overcoming these barriers. These have been described in more detail below (Table 16) and the relationship between these themes has been discussed in Section 5.3.2. These themes have been presented in pairs as follows:

### 5.3 Expert Interviews

Observations	Theme Name	Theme Description
<p>There is a general lack of awareness about what is available in terms of interventions as well as technologies.</p> <p><i>(Gloria, Gillian, and Esther)</i></p> <p>Although digital technologies are increasingly becoming an integral part of people's lives, there is a massive digital divide that needs to be addressed.</p> <p><i>(Aayush, Kirsty, and Seema)</i></p> <p>Digital technologies can be perceived negatively by older adults.</p> <p><i>(Dr. Khanum, Parry, and Martin)</i></p>	<b>Restriction</b>	<p>Restriction implies the limited options available to older adults due to various factors such as digital divide, lack of awareness about digital technologies, etc.</p>
<p>There is a need to raise awareness about loneliness interventions and digital technologies available for older adults to improve their access to services that can benefit them.</p> <p><i>(Gloria, Martin, and Parry)</i></p> <p>The prevalence of digital technologies presents a vast opportunity that can be harnessed.</p> <p><i>(Parry, Aayush, and Esther)</i></p> <p>To get reluctant older adults to use digital technologies, one does not have to display 'earth shattering' uses of it. It just has to be something that they are interested in – a hook.</p> <p><i>(Parry and Gloria)</i></p>	<b>Access</b>	<p>This signifies the need to lower the <i>sociotechnical</i> barriers that prevent older adults from accessing useful services.</p>

### 5.3 Expert Interviews

Observations	Theme Name	Theme Description
<p>Engaging with public sector can be challenging in terms of convincing decision makers to try out new ideas.</p> <p><i>(Aayush, Martin, and Esther)</i></p>	<b>Resistance</b>	Resistance signifies the hesitation in moving away from convention in terms of adopting new ideas or new technology.
<p>A lot of community initiatives are themselves run by older adults who may not be as prone to adapting to change brought upon by the introduction of new ideas.</p> <p><i>(Martin)</i></p>		
<p>The lifestyles of the young and the old, the technologically savvy versus the disconnected are very different from each other which hinders easy collaborations.</p> <p><i>(Dr. Khanum, Seema)</i></p>		
<p>Service designers should focus on aligning the expectations of service users and all other stakeholders in order to foster collaboration.</p> <p><i>(Aayush, Gloria, and Gillian)</i></p>	<b>Facilitation</b>	This means facilitating collaboration by conceiving scenarios where all involved parties extract some value from participating in a loneliness intervention.
<p>Loneliness interventions should not solely focus on the older adult in need of help. There is a need to create 'win-win' situations where all stakeholders benefit from it in some way.</p> <p><i>(Martin, Kirsty, and Aayush)</i></p>		
<p>Designers interested in developing loneliness interventions should focus on shared contexts, and in providing shared experiences to engage all stakeholders.</p> <p><i>(Esther and Gillian)</i></p>		

### 5.3 Expert Interviews

Observations	Theme Name	Theme Description
<p>Some older adults rely on help and support provided to them by local charities or government programmes, etc. to achieve their daily tasks.</p> <p><i>(Kirsty, Esther, and Dr. Khanum)</i></p>	<b>Reliance</b>	Reliance represents the notion that older adults are perceived as being dependent on others to achieve certain tasks of their daily living.
<p>Being identified as a lonely person who is dependent on external help can be embarrassing for older adults – social stigma.</p> <p><i>(Dr. Khanum and Seema)</i></p>		
<p>Some old-age related health issues such as mobility and sensory impairment can compound the problem of loneliness and make older adults confined to their local setting making them dependent on external help and support.</p> <p><i>(Seema, Esther)</i></p>		
<p>Loneliness interventions should focus on promoting independence amongst older adults.</p> <p><i>(Martin and Kirsty)</i></p>	<b>Independence</b>	This theme highlights the need to develop support systems around older adults that promote their freedom and independence.
<p>Interventions should be support systems that focus on invoking positive emotions amongst users and non-users alike.</p> <p><i>(Martin, Gloria, and Gillian)</i></p>		
<p>Taking into account the old-age related health issues, designers should focus on finding ways to enhance the <i>mobility</i> (physical, social, or digital) of older adults.</p> <p><i>(Esther, Kirsty, and Dr. Khanum)</i></p>		

### 5.3 Expert Interviews

Observations	Theme Name	Theme Description
<p>There is a stigma attached to loneliness in society that makes people more reserved and withdrawn in terms of admitting to experiencing loneliness.</p> <p><i>(Dr. Khanum and Seema)</i></p>	<b>Reservation</b>	Reservation highlights the hesitation in the minds of people involved in mitigating loneliness (including older adults) in terms of working together.
<p>Using a 'one-size fits all' approach to loneliness does not take into account the heterogeneity within the older age group.</p> <p><i>(Martin, Kirsty, and Gloria)</i></p>		
<p>Cultural differences in how ageing is perceived, and how loneliness is addressed can also make it difficult to collaborate in terms of mitigating loneliness.</p> <p><i>(Dr. Khanum and Seema)</i></p>		
<p>Designers interested in developing loneliness interventions, should look to develop customisable services where the user of the intervention has the freedom to adapt the intervention to meet his / her specific needs.</p> <p><i>(Martin, Seema, and Gloria)</i></p>	<b>Openness</b>	This theme represents a flexible and inclusive attitude to looking at older adults and problems such as loneliness experienced by them, both on an individual, as well as a societal level.
<p>There is a need to nurture cultural values that allow individuals affected by issues such as loneliness to discuss their experiences openly without feeling uncomfortable.</p> <p><i>(Dr. Khanum, Kirsty, and Esther)</i></p>		
<p>Loneliness interventions should be open to accommodate diversity in terms of age, culture, language, technological abilities, etc.</p> <p><i>(Dr. Khanum and Gloria)</i></p>		

### 5.3 Expert Interviews

Observations	Theme Name	Theme Description
<p>Loneliness interventions tend to aim at fixing the symptoms of loneliness such as not having anyone to speak to.</p> <p><i>(Dr. Khanum and Gloria)</i></p>	<b>Repairing</b>	Repairing represents our tendency as a society, to address a problem by trying to fix all the symptoms associated with it.
<p>A deep sense of loss – of companionship, income, independence, senses, perceived worth in the society, etc. cause the feeling of loneliness.</p> <p><i>(Kirsty, Seema, and Dr. Khanum)</i></p>		
<p>There is a strong focus on getting maximum older adults experiencing loneliness to utilise existing interventions.</p> <p><i>(Gloria, Esther and Martin)</i></p>		
<p>Rather than being seen as solutions that aim to address the symptoms of loneliness, interventions should be conceived as an iterative process that aims to improve older adults' overall <i>quality of life</i>.</p> <p><i>(Gloria and Martin)</i></p>	<b>Restoration</b>	This theme advocates a more comprehensive approach to addressing social problems by aiming to 'restore' the status of older adults in society as being a meaningful one.
<p>Loneliness interventions should aim to provide suitable replacements to compensate for aspects of their life that older adults may have lost in time, rather than solely focussing on repairing the situation.</p> <p><i>(Seema and Esther)</i></p>		
<p>Designers interested in developing loneliness interventions need to focus on the perceived ease of use of the intervention to make it more accessible and inclusive.</p> <p><i>(Parry and Aaayush)</i></p>		

Table 16: A summary of themes emerging from the expert interviews.



### 5.3.2 Analysis

As can be seen from Table 16, some themes emerging from the expert interviews related to potential reasons behind the lack of radical-digital loneliness interventions, such as Restriction, Resistance, Reservation, and Repair. Others, such as Access, Facilitation, Independence, and Restoration provided suggestions for introducing elements of radical innovation and digital technologies into the design process for developing loneliness interventions. Upon deeper exploration of each theme, it was also found that some of these themes had a reciprocal relationship. These paired relationships have been discussed in more detail in the following sections.

#### *Restriction and Access*

The expert interviews highlighted that many older adults who are currently ‘disconnected’ are ‘restricted’ in terms of exploring a wider gamut of opportunities that are available. Experts highlighted the implications of this digital divide and talked about how the idea of using digital technologies can evoke negative emotions such as anxiety, fear, and confusion among some older adults who are not comfortable with the idea of using such technologies. As a result, digital technology largely remains underutilised in this area. However, older adults’ apprehensions are not completely unfounded as one of the experts explained. He suggested that digital technologies evolve rapidly and it can be hard for anyone, including older adults to keep up with the constantly shifting user interfaces.

*“One of the problems he (one of the service users) had was that AOL kept changing the interface, not necessarily very dramatically but they’d add, what they thought helpfully, would be new features, and that’s actually a real, it’s a drawback to people who are not technology proficient because they learn in a lot of instances how to use something without necessarily understanding why it works”. (Parry, entrepreneur)*

It was suggested that the provision of, and ‘access’ to digital technologies is a very important precursor to deciding on what type of intervention would be more suited

### 5.3 Expert Interviews

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to older adults' needs. Also, experts pointed out that there is a need to raise awareness not just about digital technologies and how they can help, but also about different interventions and services that are already in operation. This not only helps older adults directly by helping them choose loneliness interventions that might be more relevant to their needs, but it also helps in sharing best practices between interventions and services that might benefit from each other's experiences. The interviewees also pointed out that digital technologies are increasingly becoming an integral part of our lives in the form of direct to home TV, smartphones, laptops, etc. and should be seen as an infrastructure that can be utilised to enhance service provision. Some of the negative feelings associated with digital technologies, such as ambiguity about what their potential and limitations are, emanate from the idea that the Internet is a vast venture. This perceived enormity portrays digital technologies as a murky and vague notion of little relevance to some older adults. However, one of the experts pointed out that finding out just one or two basic uses of the Internet that an older adult might be interested in, is like getting your *foot in the door*, and should be used as an opportunity to clarify the potential that Internet technologies hold. Once the older adult is 'hooked' onto a certain task, their confidence in using digital technology can increase resulting in them trying their hand out at different things.

*"That's one of the things that I've noticed that someone will come and say that I only ever wanted to do X. 'I'm only here to learn X and that's it'. But once they've done that then they think 'Oh actually, let me do a little more or, try something else' and you know their confidence builds and then you think 'Ah, I could do something else'". (Gloria, lecturer)*

#### *Resistance and Facilitation*

The analysis of results presented earlier (Table 12 and Table 16) suggested that experts believed developing radical-digital loneliness interventions is challenged by various forms of resistance on several fronts. For instance, while some older adults repel suggestions about using digital technologies, there is also internal opposition

### 5.3 Expert Interviews

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amongst various service providers that hinders collaboration. This resistance comes from intervention providers being comfortable in dealing with conventional ways of doing things, and it keeps at bay any new ideas for the fear of new challenges that such ideas might bring along. This mentality propagates the status quo where an older person is identified as someone who has a problem (loneliness), and all efforts and resources are dedicated to offering familiar forms of support to the older person such as befriending services, therapeutic sessions, activities-based clubs, etc. Experts also pointed out that some of this resistance is natural because of our human tendency to oppose change. They suggested that the differences between the lifestyles of older people and the rest of society make it difficult to address their needs. For instance, differences in sleeping patterns between the younger versus the older adults, makes it difficult to address their needs because older people are active during night time when others are asleep, and this results in a heightened sense of loneliness.

*“No, they are feeling depressed (at night) but when I enquire, that’s (loneliness) one of the reasons. They will repeatedly say things like ‘I am lonely, mainly at night’”. (Dr. Khanum, pshychiatrist)*

Some form of ‘facilitation’ is required to counter this resistance to change, and there is a need to nurture an ethos of collaboration amongst various intervention and service providers. Digital technologies can help in achieving such assistance; for example, creating some form of database or a repository of topics of interest for older adults experiencing loneliness, and of stakeholders interested in addressing loneliness amongst older adults, can help in aligning expectations of service providers with service users. Mitigating loneliness is a shared experience where multiple stakeholders are involved, and that in order to ensure that an intervention is successful, designers should focus on developing ‘win-win’ scenarios where all stakeholders benefit from participating in the intervention in some way. One expert talked about how loneliness intervention design should take into account the experience of the volunteers as much as it should focus on the older person in need of the intervention.

## 5.3 Expert Interviews

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*"I mean because these people (volunteers) do it for free, they are not actually obliged to do anything. You can't put them in a house that's filthy. We've had people who have cats and faeces everywhere and there's bad smell everywhere and stuff like that. Now the person is quite within their rights to live in a situation like that. That's up to them but we cannot put a volunteer in a situation like that no matter how isolated or lonely they (service users) are". (Martin, service provider)*

### *Reliance and Independence*

Experts pointed out that older adults who experience loneliness have to 'rely' on help and support provided by specialist services such as care homes, charities, or the public sector provided locally. This can make them dependent on limited options available nearby. Also, some older adults devise coping strategies such as visiting their GPs (General Practitioners) for company rather than for medical advice. According to experts, this dependence on local services is further compounded by age-related health problems such as mobility issues that can force older adults to withdraw from exploring wider social contexts such as marketplaces, tourist destinations, etc. Such withdrawal is particularly challenging in the light of older adults feeling embarrassed to reach out to services that can offer help and support to them. This means that loneliness interventions must rely on finding ways to identify older adults who might experience loneliness and their ability to convince them to utilise the help and support available to them. One expert pointed out that some older adults feel that they are in control of the situation and therefore they rely on their innate ability to deal with their problems until they are overwhelmed by the negative effects of loneliness on their health.

*"I think most of the time it (loneliness goes unidentified) is because people don't come forward. They just suffer themselves but when it is too much only then they go to the GP and only then they're coming to the surface". (Dr. Khanum, psychiatrist)*

### 5.3 Expert Interviews

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Experts pointed out that interventions that aim to promote ‘independence’ amongst older adults should be encouraged. Such interventions should invoke positive thoughts all-round. For instance, interventions that make an older adult feel valued and appreciated can diminish negative feelings such as embarrassment that some older adults feel while relying on external help. Loneliness interventions should also find ways of supporting or enhancing mobility of older adults who are confined to their residence. Experts discussed the role that digital technologies can play in making services more accessible, and in widening social networks of older adults using Internet that can help them keep in touch with their friends and family who might not live locally. One expert highlighted how ‘mobile’ phone technology had already introduced some sense of independence in older adults as it has given them the freedom to multi-task, e.g. remain connected with others even when away from home.

*“Oh! I can’t do that because I need (to take this phonecall) this desperately! Now I have the option of having both. So I’m not gonna miss that call even if I’m outside so you can be connected to far more people”. (Seema, service provider)*

#### *Reservation and Openness*

The perceived stigma attached to being identified as someone who is either lonely, or depressed, or both and needs mental health counselling, was emphasised by experts as causing ‘reservation’ in the minds of older adults when admitting to experiencing loneliness. The experience of loneliness can vary across, and within age-groups, and other differences such as culture and gender need to be considered when developing loneliness interventions. This means that there can be no single strategy or intervention that can ‘cure’ loneliness. Experts also raised concerns about the lack of available resources that are required to offer support to older adults experiencing loneliness. One expert pointed out the need to bring loneliness to the forefront of discussion on older people’s health and wellbeing in a bid to call for dedicating more resources to this problem.

## 5.3 Expert Interviews

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*“So it’s really important for us to point out that with loneliness... it has a massive impact on mental and physical health and it is really important to understand the reasons why we want to provide interventions because it is such a huge issue that really... resources need to be put towards combating it”. (Kirsty, research manager)*

Interviewees also expressed the need for intervention designers and providers to develop inclusive interventions that afford diversity and allow older adults to customise the interventions to meet their specific needs. In their opinion, to tackle the stigma attached to being identified as a lonely person, loneliness interventions should provide ‘open’ channels for them to express their feelings about experiencing loneliness. Experts also suggested that although more resources need to be dedicated to mitigating loneliness experienced by older adults, the current lack of resources can also provide a viable opportunity for business or entrepreneurial thinking to make loneliness interventions self-sustainable and financially viable ventures. One of the experts emphasised that although the overall objective of loneliness interventions is more social in nature, a complete reliance on charity and public sector funds to meet the intervention’s social aims is not a sustainable option in the long term and put forward the need to make a business-case for investing in loneliness interventions.

*“Obviously the social goal is massive. And I think, you can build something to achieve that but the problem is to overcome isolation you can build or you can use technology around it, people, services you can do that. But the problem is making it sustainable and viable as a business”. (Aayush, entrepreneur)*

### *Repair and Restoration*

Expert interviews revealed that as a society, our existing approach to managing loneliness focusses on ‘repairing’ the loss of mental or emotional stability. For instance, the loss of a partner, income, mobility, sight, hearing, etc. can make older adults vulnerable to loneliness and psychiatrists often prescribe Cognitive Behavioural Therapy (CBT) to support any such older adults who access the National

### 5.3 Expert Interviews

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Health Services (NHS). However, though successful in providing relief from the unpleasant feeling of loneliness, such methods do not aim to address the underlying problem. Experts also advised that to fully understand how a loneliness intervention might help an older adult, one needs to observe their usage of the intervention. One expert noted that by ‘observing’ and engaging with older adults who repeatedly use an intervention, service providers and intervention designers can understand whether the intervention is successful and consequently improve the delivery of the service.

*“I think you gotta just maybe... just be onto them, you wanna study them. Almost like engage with them and see if they’re coming back and then see that if they are coming back, what their mood’s like and stuff”. (Gloria, lecturer)*

Experts argued for looking at loneliness interventions as a ‘restoration’ process that aims to improve the overall wellbeing of the older adult experiencing loneliness rather than just addressing the symptoms of loneliness. It was also suggested that intervention designers should focus on making these services accessible, easy to understand and use. Interviewees expressed the need to address the deep sense of loss that accompanies loneliness and argued that intervention service providers and designers need to conceive meaningful activities in which older adults can participate such that it gives them a sense of being useful and wanted. This can be done by finding suitable replacements to the roles they may have lost in time. One expert provided an example of an older lady who was reluctant in seeking any form of help even though she had expressed that she was lonely. However, once she started attending the loneliness intervention, she found a new sense of purpose. She now plays an important part in keeping the intervention functioning.

*“Anyway, we did eventually break her down (got the client to try them once by being persistent) and convinced her to come to one of the sessions and now from that, she’s now the matriarch of the session you know. She’s so important to that session. She’s the focal point of that session. It wouldn’t be a session without her and it’s weird, isn’t it?”*

## 5.3 Expert Interviews

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*So that's what's just come out of getting someone to an activity". (Martin, service provider)*

### 5.3.3 Discussion

The analysis of interviews with nine experts resulted in ten key findings that have been discussed in five pairs above (Section 5.3.2). The interviews were useful in uncovering possible reasons behind the lack of radical-digital loneliness interventions for older adults as the experts talked about things that can hinder the introduction of new ideas in this area. These expert interviews contributed to this thesis on multiple levels, as they helped in understanding the scope of radical-digital loneliness interventions, and at the same time presented a more nuanced understanding of loneliness itself. Also, the probing nature of semi-structured interviews meant that for each limiting factor that was discussed, there were also conversations about how that hurdle can be overcome. Therefore, the pairs of themes discussed in Section 5.3.2 can be broadly categorised under two complementary, rather than contradictory, meta-themes i.e., *barriers* and *bridges*. While the barriers are represented by elements that impede the occurrence of radical-digital loneliness interventions aimed at older adults, the bridges offer crucial links to areas of opportunities for introducing new ideas into the mix. It was also found that experts saw digital technologies playing a vital role in building such 'bridges'. Figure 24 denotes the relationship between the five pairs of barriers and bridges that emerged from the expert interviews. The outer rim represents the barriers or challenges identified from the interviews that constrain the potential adoption of radical and digital solutions to developing loneliness interventions. The inner ring in the visualisation offers potential bridges in the form of digital technologies that could help overcome these barriers.



## 5.3 Expert Interviews

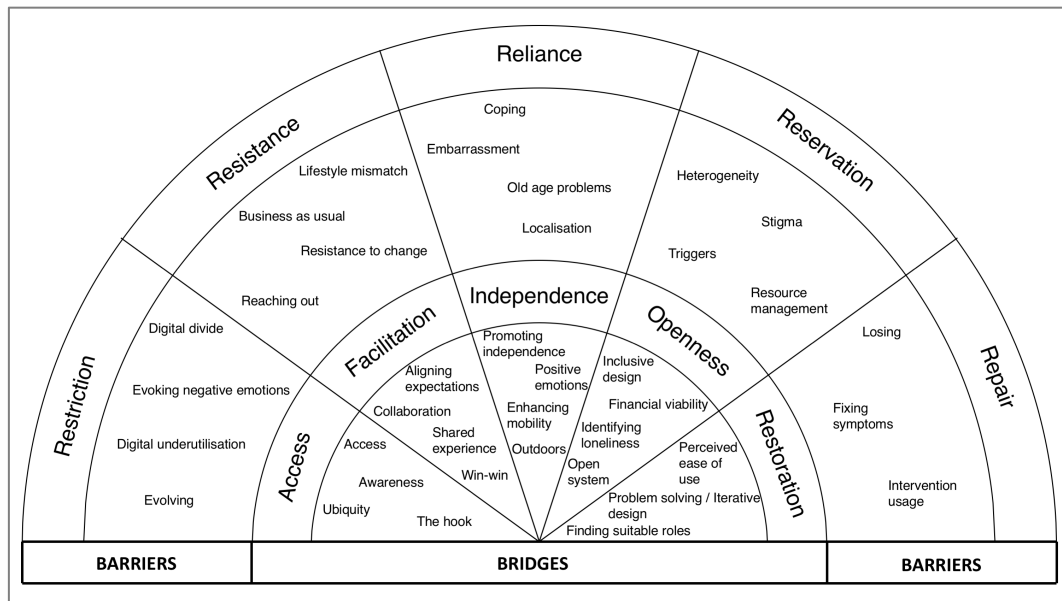


Figure 24: The themes emerging from expert interviews

Investigating possible reasons behind the underrepresentation of radical-digital interventions in this area, also helped in positioning the role of design, and that of designers in developing radical-digital loneliness interventions (see research questions in Section 1.2.1). For example, by focussing on improved access and awareness about loneliness interventions and digital technologies, intervention designers and service providers can look to bridge the digital divide that restricts the development of radical-digital loneliness interventions. Similarly, the counterproductive nature of our inherent resistance to change and cooperation should be eased by facilitating win-win scenarios where all stakeholders benefit from the intervention in some way. Designers can also help reframe, and address some of the challenges in developing loneliness interventions by looking at them as opportunities. For example, the problem of ever-changing interfaces to digital services, is an interaction design challenge. User experience designers or interaction designers can potentially look at alternate ways of facilitating user interaction via virtual assistant technologies such as *Apple Inc.'s SIRI*, *Amazon Alexa*, etc. Also, a service design approach can help intervention providers think about designing

## 5.3 Expert Interviews

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appropriate channels of marketing, communication, support available to users and other stakeholders, etc.

Digital channels of communication can also play a pivotal role in disseminating impact, and enabling contact, which are both crucial to nurturing collaboration amongst various stakeholders. Likewise, rather than providing help and support to older people such that they completely rely on it, interventions should focus on their overall wellbeing by promoting independence. By enabling older adults' meaningful usage of digital technologies, loneliness intervention designers can enhance their mobility – both in terms of being able to access services that they otherwise might not be able to use, as well as in terms of an upward social mobility where they do not feel (digitally) disadvantaged. Financially sustainable, inclusive and open interventions where older adults feel comfortable talking about their experience of loneliness, can help in better management of resources and address the diverse needs of older age groups. Digital technologies can especially be helpful in providing cheaper alternatives to contact so other physical resources such as NHS personnel can be deployed more efficiently. Digital technologies can also bring the issue of loneliness amongst older people to the fore through social media for example, thereby playing a very important role in the *de-stigmatisation* of the issue. Also, loneliness intervention designers and service providers should aim beyond repairing the symptoms of loneliness by planning activities that promote a sense of purpose and fulfilment amongst older adults. Digital technologies can be useful in such restoration by enhancing the scope of sources of inspiration. The notion that there is a difference in sleeping patterns between younger and older adults highlighted by expert interviews also provides an opportunity to use digital technologies to bridge this gap. Because the Internet operates on a global scale, it means that someone based in another time zone can be available to speak to an older person experiencing loneliness at any given time.

The following section of this chapter presents the third vital cog in the scheme of empirical information gathered during this research. Having established the gap in knowledge in the form of underrepresentation of radical innovation and underutilisation of digital technologies via the SLR (Section 5.2), the expert interviews

## 5.4 The Action Research Based Trial

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offered a deeper insight into later life loneliness as well as the proposed solution (SIFAA), and highlighted the key barriers and bridges that can help develop effective loneliness interventions (Section 5.3). Section 5.4 presents an account of the SIFAA-based intervention that was implemented during this research and presents the main findings from operationalising the proposed framework i.e. SIFAA.

## 5.4 The Action Research Based Trial

This trial involved prototyping a loneliness intervention that paired older adults in the UK, with students in India with a view to improve their English-speaking skills via videoconferencing, as the action research component of the thesis. This involved developing a SIFAA-based idea, i.e. allowing older adults to help someone else who could benefit from interacting with them, liaising with an existing loneliness intervention, operationalising SIFAA within the existing intervention using an iterative prototyping approach, and ethnographically observing the process to glean out insights that could be useful to other intervention designers interested in developing similar loneliness interventions.

Following on from the previous chapter (Section 4.7.3) that introduced the diagnosis, action planning, and action taking stages of the action research based trial, this part of the thesis continues the discussion on the *action taken*, before leading on to how the trial intervention was evaluated, and then specifying the overall findings from this part of the research.

### 5.4.1 Action Taking (week 21 to 36)

An intervention was prototyped over 16 weeks and a total of 6 videocalling sessions were carried out for older participants in the UK to help Indian students improve their spoken English. Due to the limited resources associated with this research, the intervention could only be deployed over 16 weeks, and because each videocalling session was followed by a reflective and brainstorming phase, only 6

## 5.4 The Action Research Based Trial

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such sessions could be carried out within the 16-week period. The videocalling sessions were always conducted after the older participants had finished eating so as to not invade their personal *catching-up* time. This also helped in setting-up the videocalling equipment while the older adults enjoyed their conversations over food. Each session was planned for a maximum of 30 minutes. During the first couple of sessions, a group of Indian students gathered around a laptop and tried to speak to older participants in the UK, but for the remainder of the trial, a design decision was made to get individual students to participate in videocalls. This was done to be able to manage and facilitate the conversations between UK participants and the Indian students. Each of the final three sessions were planned to have three videocalls lasting no longer than ten minutes each with individual student. 'Contact summary forms' (Miles et al., 2013) were used throughout the action research based trial to summarise the ethnographic observations and to inform design choices for each session.

"A contact summary form is a one-page document with some focusing or summarizing questions about a particular field contact. The field-worker reviews the written-up field notes and answers each question briefly to develop an overall summary of the main points in the contact" (Miles et al., 2013 p. 124). This strategy was useful in providing interim analysis throughout the trial, but during the calling sessions in particular, as it helped in evaluating how design decisions made during each session shaped how the intervention evolved, as can be seen in the example that follows<sup>29</sup>:

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<sup>29</sup> All names used in the contact summary form as well as the rest of the discussion are fictitious and have been used to anonymise the data emerging from this research.

## 5.4 The Action Research Based Trial

<b>Contact Type:</b> Ethnographic visit	<b>Site:</b> The XYZ Pub, Greater Manchester (UK)
	<b>Contact Date:</b> 19 November 2015
	<b>Today's Date:</b> 21 November 2015
<b>1. What were the main issues or themes that struck you in this contact / visit?</b>	
<p><u>Familiarity:</u> Since this was the fourth videoconferencing session, participants in the UK seemed comfortable and familiar with the idea of videocalling into India. In fact, when Vineet (Indian student) <i>videocalled</i>, Holley and Isabelle (UK participants) recognised him by his name (they called him Vinny) and both parties greeted each other. Vineet asked Isabelle how her crochet, that she had been doing last week during the videocall, was coming along?</p> <p><u>Waiting time:</u> Piyush (Indian student) was at the office of the company where he was doing his internship and had been standing-by for the call for 32 minutes. The session was delayed because everybody in the UK, was still talking to Holley and Isabelle's sister, Megan, who had dropped by. Piyush eventually had to leave without speaking to anyone because it was getting late in India, and he had to leave the office to go back to his student accommodation.</p> <p><u>Visibility:</u> Vineet (Indian student) wanted to show us how all the houses on his street were still decorated for the Indian festival of <i>Diwali</i> from a week ago. However, when he went outdoors with his phone, we could hardly see anything because it was too dark. Moreover, being off the <i>Wifi</i> network had further impacted Vineet's videostream, which became blurry as soon as he went outdoors possibly due to his mobile data bandwidth being low.</p>	
<b>2. Summarise the information you got (or failed to get) on each of the target questions you had (from the previous session) for this contact.</b>	
<b>Question</b>	<b>Information</b>
HDMI Cable length	Increasing the length of the HDMI cable certainly helped in bringing the laptop camera closer to the participants and therefore improved the visibility for Indian students.
External microphone	The audio quality had significantly improved and the Indian students could hear us clearly as compared to the previous session. However, using an external microphone meant that some older participants were disengaged as they felt somewhat excluded from the conversation and they started talking to each other.
<b>3. Anything else that struck you as salient, interesting, illuminating or important in this contact / visit?</b>	

## 5.4 The Action Research Based Trial

<p><u>Shared interest:</u> When Mohit (Indian student) told us that he was studying Software Engineering, Eduardo (UK participant) requested for the microphone to tell Mohit that he used to teach Electrical Engineering. After their conversation was over, Craig (UK participant) told Eduardo that he had not known this about Eduardo and they started having a separate conversation during the session. As part of this conversation Eduardo also told Craig that he was vegetarian, which is again something Craig hadn't noticed earlier.</p> <p><u>Exclusion:</u> Dianne and Alice (UK participants) who are both in their 80s, were sitting with their backs facing the Television. They tried to lean over their shoulders to see the TV screen, but because of the height of their fixed seats, they could not. Hence, they continued talking to each other throughout the session.</p> <p><u>Noise:</u> Towards the end of the session, some participants in the UK had started to leave and the general noise level in the pub was increasing. This was possibly due to the 'exclusive' nature of the microphone and also due to the age-related hearing problems because some older adults could not hear what their fellow participants were saying on the microphone, so many of them started talking to each other. With the noise level increasing, it was becoming harder to hear the Indian students through the TV speakers as well.</p>	
<b>4.</b>	<b>What new (or remaining) target questions do you have in considering the next contact (with this site) / visit?</b>
<p>Could restricting the sessions to indoor conversations improve visibility and consequently, the engagement? (Design choice)</p> <p>Could the seating arrangement be reconfigured in order to include all participants? (Design choice)</p>	

Table 17: Contact summary form for the fourth videocalling session.

### *Detailed account of the day in example contact summary form*

The example 'contact summary form' presented in Table 17 summarises the insights from the fourth ethnographic visit which involved a planned videocalling session with three Indian students, Piyush, Vineet and Mohit. While the planned call with Piyush could not go ahead because the older participants were busy interacting with a new visitor, the videocalls with Vineet and Mohit went ahead as planned. This meant that Piyush had to wait for more than half-an-hour to no avail. Piyush had participated in all the three sessions prior to this one but did not participate in the following two sessions and when contacted about his absence, suggested that he was busy with his studies, preparing for his examinations, and finishing his internship.

## 5.4 The Action Research Based Trial

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The videocall with Vineet however, highlighted some interesting points relevant to this study. For instance, some of the UK participants instantly recognised Vineet when they saw him on the TV. Likewise, Vineet was also able to recall some of their names and he referred to the conversations that they had during the previous sessions. Vineet thought that it would be a great idea to show participants in the UK, how houses in India are adorned with decorative-lights during *Diwali*. Although it generated a lot of excitement amongst participants in the UK, when he went outdoors with his smartphone, the video quality reduced drastically due to it being dark outside (in India) and the mobile data connection issues. The third planned call of the day (with Mohit) went well, with Eduardo talking to Mohit in particular, once he found out that Mohit was studying Engineering. This was because Eduardo was a retired lecturer in Electrical Engineering himself. This also sparked a conversation between Craig and Eduardo, both participants in the UK, who had been attending the lunch sessions for more than a year but did not know each other very well prior to attending the lunch sessions.



Figure 25: The action research based trial in action. The student can be seen in the top right-hand corner on a TV screen. The laptop can also be seen under the TV.

## 5.4 The Action Research Based Trial

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### 5.4.2 Making design choices based on ethnographic insights

During the third videocalling session (in the preceding week), it was noticed that because the laptop that was being used to make the videocall was kept at a distance (due to the length of the HDMI cable that connected it to the TV screen), the Indian students could not see the UK participants very clearly. Moreover, because the videocalling software was utilising the built-in microphone on the laptop, the older participants were having to walk all the way over to the laptop, and speak to the students. Not only was this physically challenging for someone like Molly, who was due to have a hip-replacement surgery soon, but she also had to speak loudly and repeat herself time and again, adding to her discomfort. Students in India on the other hand, were mostly using smartphones and tablets with earphones (with built-in microphones) so their voice was loud and clear on the TV. Therefore, a design decision was made to introduce a lengthier HDMI cable, i.e. 10 metres instead of 2 metres, in order to introduce more flexibility on where the laptop (and the built-in videocamera) could be placed in the pub. Similarly, an external microphone with a 10-metre-long lead was also introduced so that older participants could have a conversation with the Indian students using the external microphone, from the comfort of their own seat. A snapshot of the ethnographic insights and how they informed the design choices for each of the videocalling sessions can be seen in Table 18 and in the brief description that follows.



## 5.4 The Action Research Based Trial

Session Number	Insights	Design choices for next session
1	Operating touchscreen interface (iPad). Age-related hearing problems. Network issues.	Using a stylus. Using earphones. Finding <i>sweetspots</i> for the network or a reliable cable connection.
2	Shaky camera and visibility problems. Not being able to use earphones due to hearing aids.	Using the pub's advertising screen (TV) with a laptop instead of iPads. Using TV's inbuilt speakers as they have amplification.
3	Older participants' voices were faint due to laptop (microphone) being too far.	Using an external microphone and a longer HDMI cable.
4	Difference in time zones. Too dark to see anything outdoors.	Limiting the conversations to indoor interactions.
5	Student examination time affecting student participation.	Discontinuing sessions until students become available.
6	Time zone and student availability issue.	Finding local students / volunteers interested in participating for the next iteration.

Table 18: A summary of ethnographic insights informing design choices.

### Session Number 1

After recruiting older participants in the UK, and students in India, a videocalling session was planned to introduce them to each other. *Skype* was used to conduct the first videocall wherein the 6 participating students (Aashima, Geeta, Mohit, Vineet, Piyush, and Sameer) gathered around a laptop and dialled through to 2 older adults (Molly and Hillary) who were using a single *iPad*. The pub's wireless network helped in establishing a connection to the Internet. During the session, it was noticed that both parties were struggling to hear each other and that the call kept getting disconnected. Sameer was carrying a pair of headphones with a built-in microphone which he plugged into the laptop in an attempt to improve communication. It did slightly improve the voice quality but it led to only one student controlling the

## 5.4 The Action Research Based Trial

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conversation at a time while others watched on. It also became apparent that although Mollie, who was handling the *iPad*, knew how to navigate the screens to make a *Skype* call, she was finding it very difficult to click the right options on the *iPad* screen with her fingers. She had to make several attempts before the *iPad* would register her response.

As a result, it was decided to address these issues by planning a few design changes for the following session. For instance, *styli* were introduced to help older participants use the *iPads*. This was done with a view to allow older participants to rely on their muscle memory to utilise their ability of controlling a pen, something they might have more practice of, in comparison to using touchscreen interfaces. Scanning the pub to identify wireless *sweet spots* helped in shortlisting some areas where the wireless network was stronger, and hence, they were chosen as areas to carry out the following session. A wired connection could not be used as it would interfere with the pub's till machines. Additionally, to tackle the audio quality and comprehension problem, earphones were introduced on both sides of the conversation. A 5-way earphone connector (Figure 26) was used to allow multiple participants to participate in the videocalls.

It is important to highlight that the idea of participating in groups or pairs (of older participants) came from Molly who wanted to get involved in the conversation along with her friend, Hillary. Also, during the first session, when Molly and Hillary were speaking to the Indian students, Derek and Patrick got curious, they came over to the corner where the session was in progress and said hello to the Indian students by waving at them.

## 5.4 The Action Research Based Trial

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Figure 26: A 5-way earphone connector used in the study with three pairs of earphones connected to it.

### *Session Number 2*

For the second session, Molly, Hillary, Derek, and Roger had agreed to participate in a videocall with Aashima, Piyush, and Vineet on the Indian side. However, prior to commencing the session, it was noticed that Molly, Derek, and Roger were all wearing hearing aids and it was deemed unsuitable to ask them to use earphones for the calls. Molly and Hillary decided to carry on with the session without the earphones, with Craig, Derek and Roger staying by their side as observers. Having planned the session in an area with a good wireless network, this seemed to improve the quality of the connection as the videocalls did not get disconnected throughout the session. According to Molly, the stylus really helped her as she found it very easy to control the *iPad* with a “pen-like thing”. Because Molly had been a typist before her retirement, she said that she found it relatively easier to learn how to use computers because she was used to handling the keyboard (*QWERTY layout*). However, she said

## 5.4 The Action Research Based Trial

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that she was still coming to terms with her new *iPad* given to her by her daughter who lives in Australia, but that the stylus “helped”.

Though the stylus helped in easing the interaction part of the problem, the issues with voice quality however, could not be resolved through the intended plan of using earphones during this session. It was also noticed that because Molly’s hands were shaking while holding the *iPad*, the video-stream appeared to be unstable resulting in a poor videocalling experience. While Molly and Hillary could not hear Aashima properly, she was able to hear both and was trying to answer them. It was also observed that Aashima tended to dominate the interaction, with Piyush and Vineet only speaking on a few occasions such as when they were asked about their names and what they were studying. Aashima on the other hand was trying to describe *Kurukshetra*, the Indian city where they were based.

To resolve issues such as the audio-video quality, ethnographic observations from earlier visits proved useful. During earlier ethnography visits, it had been observed that the pub had a large TV screen on one side that was generally used for advertising purposes, hosting musical events, and telecasting sports matches, etc. Permission was sought from the pub manager to use the TV screen and upon being granted access, it was planned to connect a laptop to it with an HDMI (High-Definition Multimedia Interface) cable so that both audio and video data could be transmitted to the TV. It was expected that these design choices would not only allow for a better-quality video, but that the TV’s speakers would also improve the sound quality through amplification. Also, because the next videocalling session could be seen by everybody on the large TV screen, all older participants could join the conversation.

### *Session Number 3*

The third session was planned with Piyush, Vineet, and Aashima. In order to ensure that all Indian students got a chance to speak, the session was planned as a 30-minute gathering with three 10-minute calls each with the three students. Because a large TV screen was being used, all participants in the UK could participate. Piyush was the first one up, and he could be seen clearly on the screen. Heather and Molly tried to ask him questions such as what he enjoyed doing, his hobbies, etc. but Piyush

## 5.4 The Action Research Based Trial

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could not hear their questions as the laptop with the built-in microphone was too far away. Again, his voice was loud and clear and he tried to ask them what each one of them was doing for Christmas but he could not hear their responses. The laptop could not be moved closer to the participants as the HDMI cable was only 2 metres long. Therefore, for the next call, it was decided that one of the volunteers would stand close to the laptop to act as a mediator between the UK participants and the Indian students. This strategy improved the quality of interaction significantly. For example, when the UK participants found out that Aashima had a dog, Diane who was extremely fond of dogs, wanted to see it and requested Aashima if she could show them her dog. Aashima could not understand what Diane was asking and when participants in the UK kept saying “Show us the dog... the dog... dog!”, the field volunteer, who was closer to the microphone (on the laptop), relayed the message. Aashima laughed and complied to the request and everybody greeted the dog with a round of applause and a cheer! Vineet’s call went well too as by that time the strategy of mediation seemed to be working well. Vineet noticed that Isabelle, who was sitting relatively close to the computer, was busy doing something. When he asked her if she was knitting, she told him that it was crochet, something that she really enjoyed doing. To this Vineet told her that he was familiar with crochet as his sister did it too. Craig, who had earlier suggested that he “was not into technology” asked Vineet several questions about various sports he enjoyed playing and watching and wanted to find out which football team Vineet supported or if football was as popular a sport in India as cricket?

## 5.4 The Action Research Based Trial

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**Figure 27: Videocalling session number 3 in progress. The Indian student's dog can be seen on the screen, alongside field volunteers acting as a mediator between Aashima and participants in the UK.**

Although the ability to interact across the globe had drastically improved during this session, the voice-quality issue remained unresolved. In a further attempt to address the issue it was decided to introduce an external microphone and a longer HDMI cable (10-metre-long instead of 2 metres) to bring the laptop as close to the UK participants as possible within an area that had a good wireless network. This would also release the volunteer to resume his / her duties such as serving drinks or clearing up the tables.

### *Session Number 4*

This session has been discussed in detail in Table 17, and the discussion that follows it. The two key design choices that were made after this session were to restrict the following sessions to indoor interactions because of network issues and the fact that it was getting dark and cold in *Kurukshetra*, by the time these sessions were held, due to the difference in timezones. The other design choice considered was to alter the seating arrangement in an attempt to encourage more inclusion.

## 5.4 The Action Research Based Trial

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### *Session Number 5*

For this session, only Vineet and Mohit could be available from the Indian side. Prior to the session, Aashima had notified that she would not be able to participate in the sessions as her exams were approaching and she was spending more time in the library. Although she said she “really enjoyed the sessions”, she could not find the time to participate in them. Vineet was a PhD researcher so he did not have any examinations and Mohit, said he was using the sessions as a break between his preparation. It is interesting to note that both Vineet and Mohit spoke relatively better English than other Indian students because they said that they grew up in bigger cities. The 10-minute calls went smoothly and the UK participants and the Indian students were sharing jokes. For instance, when Craig saw Vineet’s room in the background, he said, “Has someone broken-in to your room? Has there been a burglary?” suggesting that Vineet should clean his room. To this everybody laughed, including Vineet. Mohit, who said he liked to cook had a little conversation with Derek who used to be a baker. Derek said he could teach Mohit “a trick or two” about baking.

Due to the Indian students being busy in examinations and assignments, it was decided to temporarily discontinue the sessions until the start of the new student term after the New Year (January 2016). This meant that for three weeks there were no videocalling sessions and that only one more session could be carried out before the allocated time for the action research based trial within the broader research came to an end. This period allowed the researcher to start planning the evaluation and analysis of the overall trial.

### *Session number 6*

The session after the break turned out to be the final session of the trial due to the allocated resources (time and budget) to the project. Vineet and Mohit participated in the session. Contact could not be established with Geeta and Sameer prior to the session and they dropped out of the trial without providing any details. Aashima and Piyush were not in *Kurukshetra* at the time of the final session. Due to the weather being cold and wet in Manchester, there were not many UK participants



## 5.4 The Action Research Based Trial

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present for the final session. For instance, Heather and Isabelle who had a good conversation with Vineet during the previous session were not there. Vineet spoke to Eduardo, who told him that he had been to India several times when he was younger. He even had a spiritual Guru in India but Vineet was not familiar with the name or place in India where Eduardo's spiritual Guru was based. Derek spoke to Mohit and told him that he had a nice Christmas as he got to see all his family members including his grandchildren whom he was really fond of. Mohit told Derek that he had been busy during the exams and then went home for a few days to see his family too.

### *Making alternate design choices*

For the design choices made throughout the action research based trial the emphasis was on making quick and iterative changes within the time and resources available, and therefore some alternate design changes were not possible during this trial. However, it is important to discuss some of these prospects to understand the 'plausible, probable, possible, and preferable' (Dunne and Raby, 2010) design choices that can shape the future of such SIFAA-based trials.

For future iterations of the intervention, it was thought that possibly due to differences in time zones, an alternative design choice would be to recruit students locally. For instance, international students from within the UK or other countries where the time-difference was not as significant, could be recruited to speak to older adults through videocalling. Alternatively, communications that were not real-time could be considered. For example, allowing participants to record and upload 'asynchronous' (Johansen, 1988) video messages so that they can be accessed at a time of the recipient's choosing. Inspiration could be sought from fields such as computer-supported cooperative work (CSCW) to understand various established ways of enhancing online interactions given factors of time and geographical location (Baeker et al., 1995). Johansen's CSCW matrix (1988) suggests that remote or asynchronous collaboration can be facilitated by the use of collaborative tools such as email, bulletin boards, blogs, etc. (Figure 28). This requires meticulous planning, good communication and efficient coordination. This is a space that designers can occupy to find creative, and inclusive ways of facilitating such online interactions.



## 5.4 The Action Research Based Trial

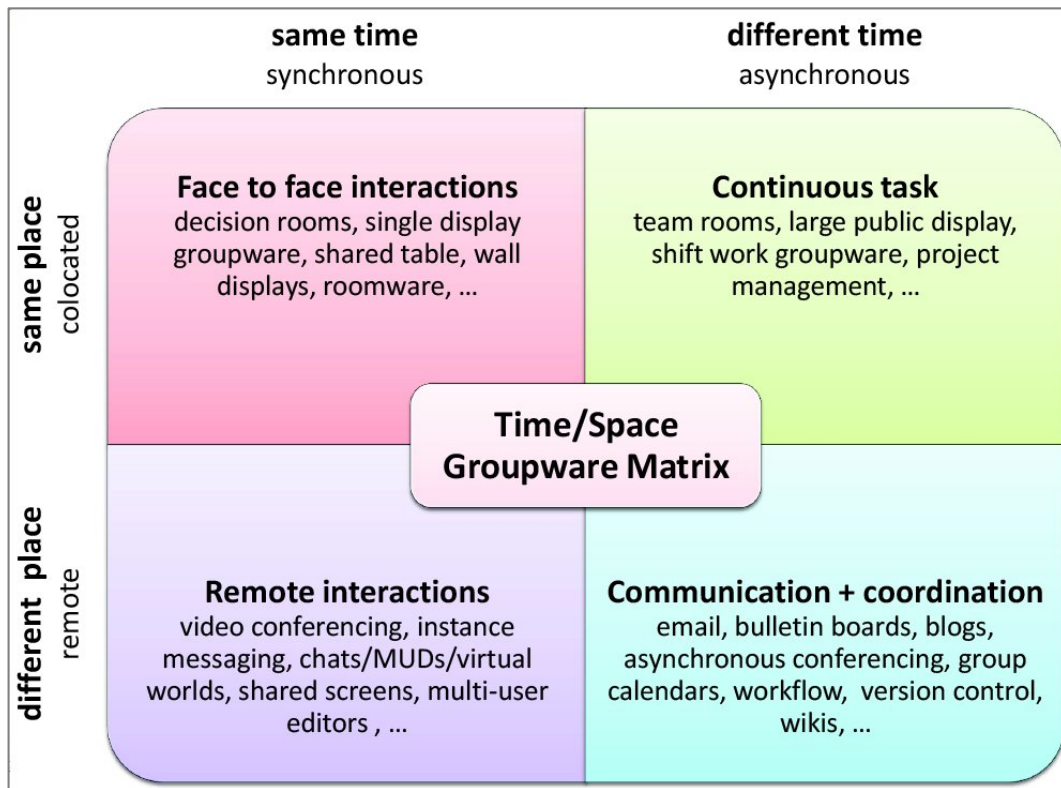


Figure 28: The CSCW matrix. Source: Johansen, 1988

Similarly, although styli were introduced during the trial to help older participants interact with *iPads*, future interventions based on this trial could utilise different modes of interaction such as artificially intelligent-speech recognition software (*amazon Alexa, Apple's SIRI, etc.*). This can also help address the problem of constantly changing user interfaces highlighted during expert interviews (Section 5.3.3). Suggesting experimentation with such digital technologies is not an endorsement of their capabilities, but a call to inform the evolution of their design, and to improve their inclusivity through their engagement within an ageing context.

Also, this trial highlighted the challenges in trying to align the lifestyles, expectations, and aspirations of two very diverse groups i.e. older adults in the UK, and students in India. Future iterations of this intervention could look to overcome this dependence on people by allowing older adults experiencing loneliness to experience other aspects of *getting out and about* such as experiencing the weather

## 5.4 The Action Research Based Trial

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or shopping in the high street of another country via ambient technology. For instance, Internet of Things (IoT) that mimic the ambient sound, temperature, smells of another location, or livestream a walk along the markets from a distant country can be developed. Ways of establishing links between older adults and their friends, family members, or someone who has something in common with them through digital technologies can also be explored.

While the design choices mentioned above point to various possible directions that this trial could have taken, it is important to discuss how the action research based trial in its current form was perceived by participating members during the study. These evaluative findings have been discussed in the following section.

### 5.4.3 Evaluating (Week 37 to 40)

The ethnographic observations conducted throughout this trial and other qualitative interactions with participants were helpful in evaluating this experiment. One of the primary aims of this action research based trial was to move from the theoretical understanding of SIFAA to its praxis through this prototype. It was found that conceiving radical-digital loneliness interventions using SIFAA is possible, and that an action research approach can be used to refine the intervention further. Select quotes from three of the participants have been presented below to indicate how the intervention was received overall.

*“I’m always up for something new. It’s the same reason I watch all those television quiz programs. It keeps this (points to her head) going. One needs to keep their brain occupied with new things” (Molly, UK).*

Molly lived alone and expressed her willingness to participate in the trial because she thought it provided her with an interesting mental stimulus. She suggested that staying mentally ‘active’ was key to healthy ageing.

## 5.4 The Action Research Based Trial

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*“Technology is great now you know. We never had this when I was young and it’s really lovely that we can speak to people all over (the world). That’s something that we couldn’t do before” (Hillary, UK).*

Hillary felt really positive about the use of videocalling and the possibilities that it opens up. She saw it as playing a crucial part in connecting people, which is essential to mitigating loneliness.

*“I was enjoying the sessions but I had to opt out because it wasn’t really convenient for me due to the timings and my University schedule” (Piyush, India).*

Piyush suggested that even though he liked the core idea, it was not sustainable for him. Conflicting time zones and his daily routine meant that he had to discontinue participating in the sessions.

The intervention was generally well received by participants both in the UK as well as India. However, four (out of six) students dropped out, and two of them cited their University commitments for discontinuing their participation in the intervention. Contact could not be established with the remaining two students to ascertain their reason(s) for dropping out. In the UK, most participants seemed to be engaged in the sessions. For instance, Craig who suggested that he was ‘not into technology’ prior to the trial, was very active in the videocalling sessions and asked the students several questions about various sports they played. Mary and Sarah, who did not ask any questions when provided with an opportunity to do so, were later discussing amongst themselves how they enjoyed witnessing another ‘culture’ live on the screen. The notion that by the end of the trial, the students and older adults were sharing jokes about the student’s room being untidy, and willing to share the secrets of baking with each other, pointed in the direction of a possible relationship that was emerging.

## 5.4 The Action Research Based Trial

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It is noteworthy that each design decision was based on the participant observations and over six iterations from week 21 to week 36 (Figure 16) the intervention had undergone a notable change in the way it operated previously. For example, towards the end of the 16th week, some older adults remarked that they really liked the idea of videocalling and were interested in keeping in touch with their friends and family over the Internet having seen how it works. The few older adults who had learned how to use videocalling software started showing others how to use the software. In future, participants (older adults and students) can potentially use the templates provided in Table 17 and Table 18 to make their own design choices in order to adapt the intervention to meet their requirements. These templates can help in making design choices informed by observations made during the intervention.

In summary, this action research intervention's development can be envisioned in three phases. The trial here represents the first phase of experimentation with key learnings documented in an actionable format for anyone interested in developing loneliness interventions based on the ideas put forward in this thesis. The second stage would involve offering mentoring and support to intervention providers or designers to help them get started on the project. The third phase could see independent adaptation or customisation by service providers based on their individual contexts.

### 5.4.4 Specifying Learning

By offering older adults the chance to act as mentors or teachers of English, this trial focussed on active ageing, and looked to find a suitable replacement for the roles that participating older adults may have lost in time. Similarly, by framing older adults as a part of the solution space, wherein another group of stakeholders, such as students in this case, could benefit from engaging with them, this trial operationalised social innovation. Thus, this action research based trial is a very specific example of SIFAA. This trial suggests that SIFAA can be used to help stimulate radically different thinking about loneliness interventions for older adults. It was found useful to develop and to use a template (Table 13) to score all the loneliness ideas on, to successfully experiment with, and implement an intervention based on SIFAA. This

## 5.4 The Action Research Based Trial

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experimentation also showed that existing interventions could be given a radical-digital makeover using SIFAA as a designing principle.

With regards to the specific learning from this prototype, Susman and Evered's five stages of action research (1978) were found to be extremely helpful in ensuring that the research was constantly focussed on 'thinking and doing' things differently. Overall the intervention was well received and many design issues were addressed over several iterations; however, operating in different time zones presented a challenging management problem. For example, the weekly lunch sessions were always carried out on Thursdays, 12:30pm UK time. Therefore, the students would have to be available at 6:00pm Indian time, which meant that it was too dark for them to conduct the session outdoors especially after having spent all day attending lectures. Although one way to circumvent this problem in future research is to recruit local students, in future even local or global volunteering and befriending could be done digitally. Thus, imagining a tree of solutions to each emerging problem and implementing design decisions with a view to reflecting upon those choices can help in refining the intervention over several iterations.

It is important to highlight that the action research based trial offers a detailed, but early attempt of exploring SIFAA. Therefore, design knowledge emerging from this trial that has been documented in this section should be considered a *work-in-progress*. As Manzini has pointed out, "Design processes are very open-ended: they never finish because there is no longer a clear separation between the design and management stages of a project (the result is always a "beta version", to which the currently active participants may bring their corrective or ameliorating contributions" (2015 p. 52). Therefore, though this trial demonstrates a successful development and trialling out of a SIFAA-based intervention, further research and experimentation is needed to refine this approach. For instance, it remains to be seen if SIFAA (see Chapter 1) can be used to create completely new radical-digital interventions, rather than only being useful in transforming existing services. It is also important to acknowledge that this trial did not adequately demonstrate replacing older participants' 'lost roles' in society, a key tenet of activity theory, active ageing, and SIFAA (Section 2.3.1 and Section 3.3). For instance, the students who continued

## 5.4 The Action Research Based Trial

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to participate in the sessions spoke relatively better English than the ones that dropped out. They suggested that they were more interested in the idea because it was something they had never participated in before than to improve their English-speaking skills. However, the older participants expressed a desire to help the students when briefed about the project and agreed to participate in the study. This indicated their willingness (if not the need) to assume the 'role' of an educator by practising what comes naturally to them – speaking English. Additionally, some of them possessed skills such as baking and crochet, which they were willing to share with the students. Focussing on their skills could allow for thinking about ideas where they can impart knowledge around these skills digitally. The timescale of this trial i.e. videocalling sessions (16 weeks) however, was short and therefore insufficient for allowing such relationships to develop.

It was found that a key strength of this experiment was also one of its key limiting factors i.e., the participatory nature of the field researcher. The older adults were constantly relying on the researcher to set up the videocalling sessions and for troubleshooting. Towards the last couple of sessions, the older participants did not interact with the laptop at all. They were only interested in speaking to the students by holding the microphone and would defer to the researcher for any interaction that was needed with the software. Although this was the case during the trial, one of findings was that a facilitator (replacing the researcher) is essential to progressing such an idea. Perhaps with further design iterations the facilitation process could either be made virtual or even designed out. Also, due to limited resources, it was not possible to conduct ethnographic observations in India. Electronic communication had to be relied upon to gather information about the intervention and students' experience of participating in it.



Figure 29: A participant in the UK, using the microphone to speak to a student during one of the sessions.

## 5.5 Identifying actionable insights

This section offers a concluding commentary to the results obtained from all three research methods discussed above i.e., the SLR, the expert interviews, and the action research based trial. This discussion is crucial to the overall aims and objectives of this thesis because it serves as the linchpin that connects all these *cogs* and sets in motion a more detailed exploration of the core research question this thesis aims to answer, i.e. *How can a hybridisation of Activity Theory of Ageing and Social Innovation i.e. SIFAA (Social Innovation for Active Ageing) be used to develop loneliness interventions for older adults?*

Aggregated findings from the empirical engagement, presented earlier within this chapter, can be discussed on a conceptual and a methodological level. The conceptual findings discussed herein offer scholarly insights that can advance the understanding of researchers or designers interested in mitigating loneliness experienced by older adults. The methodological insights are more specific and

## 5.5 Identifying actionable insights

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highlight various strengths and weaknesses of the overall method that was adopted for this study.

One of the most important findings from this research is the *now* empirically backed claim that there is a lack of radical ideas, and of digital technologies, in developing and operating loneliness interventions for older adults. In addition to empirically verifying this suppositional gap in knowledge, this research also made an early attempt to address it. Outcomes of this overall investigation have been presented here under two sub-headings – conceptual insights and methodological insights as discussed below:

### 5.5.1 Conceptual insights

The conceptual insights emerging from this research can be helpful in developing novel ways of mitigating loneliness, informing policy decisions, or in identifying new areas for research. By pointing at ways in which an existing intervention was transformed from an incremental-physical intervention into a radical-digital one during the trial, and by highlighting existing interventions such as *School in The Cloud* found in the SLR, this section discusses the pathways that can be adopted to create more radical-digital loneliness interventions. It also offers an insight into the various roles that designers can play in this process of conceiving, identifying, or scaling radical-digital loneliness interventions.

This section also argues for a shift in how older adults are perceived, and subsequently *dealt with*, within the current global socioeconomic context. It summarises the insights emerging from expert interviews that suggest looking at older adults as being a resource, rather than a liability. Finally, through this discussion of conceptual insights, this thesis highlights the need for further research in the area of tracking the rise of radical-digital loneliness interventions as evidenced by the SLR.

#### *Pathways to creating more radical-digital loneliness interventions*

This investigation pointed out that there can be several different pathways to creating more radical and / or digital interventions. It suggested that designers, with



## 5.5 Identifying actionable insights

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their innate ability to creatively recombine existing knowledge and resources (Manzini, 2014), can help in either building brand new interventions, or look to make alterations to existing services to convert them into radical-digital loneliness interventions. While the introduction of digital aspects such as a website or an online video is relatively easy to achieve, the same may not be the case when it comes to transforming improvements or incremental interventions into radically different services (Hage, 2011). Our natural tendency to resist change, combined with the comfort of operating within familiar modes of rational management, has meant that as a society, we have been “doing things as they have always been done” (Manzini, 2015). This has resulted in more *diffusion* than *evolution* of loneliness intervention ideas, i.e. an incremental change. On the digital side, factors such as age-related health issues i.e. impairments related to vision, dexterity, and hearing, etc., combined with a lack of awareness and capability of handling computers, tablets and smartphones can impede their utilisation in this field. In addition, if we consider limiting factors such as low levels of Internet provision in hard-to-reach areas, it becomes clearer as to why majority of loneliness interventions do not harness the full potential of digital technologies. However, while these factors offer a reasonable explanation behind the challenges in setting up digital interventions, they do not provide a justification for a lack of some form of online *presence*. Although it may not be necessary for an intervention such as a face-to-face befriending service to explore all aspects of digital technologies (Section 3.4.2), having an online presence can help the service expand its reach, and even expose it to possible collaboration with, or critique from other stakeholders, which is beneficial for the overall growth of the intervention.

Experimenting with radical-digital interventions for this study involved introducing design changes to an existing loneliness intervention through action research (Section 4.7.3). Firstly, this investigation demonstrated that it was possible to introduce novel ideas to an existing incremental intervention such that its *Standard Working Principle* could be altered to give it a more radical stance. Secondly, because the trial was based on *videoconferencing* between two countries, it required more than just an ‘online presence’ in terms of utilising digital technologies. For instance, during the action research based trial carried out for this study, a weekly lunch

## 5.5 Identifying actionable insights

session representing incremental innovation, was transformed into a radical idea where older adults framed as providers of support, rather than only receiving it. It is noteworthy that the trial was not ‘fully digital’ as it neither captured or analysed big data, nor did it explicitly utilise cloud computing (Figure 30). This observation is important because it highlights that not all interventions need to utilise all aspects of digital technologies. Owing to the similarity in the two ideas, perhaps *School in The Cloud* can offer an insight into the future of such ‘trials’ where an intervention can evolve to attain a more digital outlook based on the scope and context of the intervention.

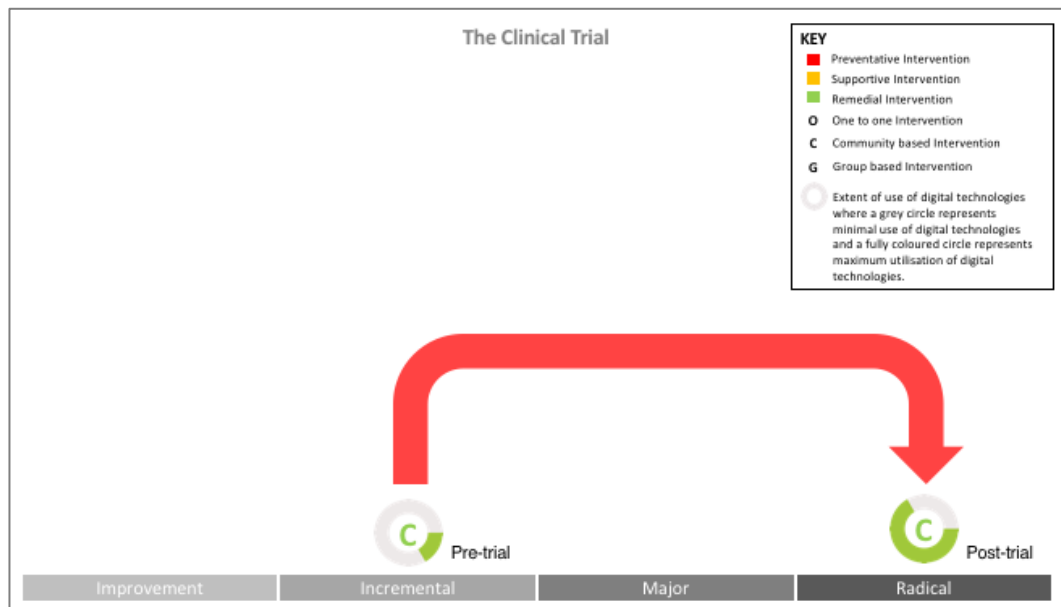


Figure 30: Transforming an existing loneliness intervention during the action research based trial

Such awareness about other interventions in the area can help intervention designers and service providers in setting goals and priorities, and even seeking inspiration from other interventions. Thus, existing loneliness interventions can either be *upscaled* to give them a radical-digital makeover, or known radical-digital loneliness intervention ideas can be *outcsaled* to other contexts. Hermans et al. suggest that outscaling “is a horizontal process” (2013 p. 119) that relates to the transfer of knowledge between different types of organisations. They also highlight the role of “brokers” in facilitating these relationships and suggest that such

## 5.5 Identifying actionable insights

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negotiators “can facilitate communication between different types of actors, whether they have a stake in the process or not” (2013 p. 119).

This thesis argues that this *liminal* space can be occupied by designers and that by drawing upon their collection of skills, tools, and props, designers can help in brokering the exchange of ideas, knowledge, and resources between various stakeholders interested in developing loneliness interventions. Since many of these interventions operate as services, Yee et al.’s commentary on ‘seven roles’ that a service designer can occupy in problem-solving can be useful in framing a designer’s role in terms of outscaling, as well as upscaling loneliness interventions (2009). Table 19 shows an adaptation of Yee et al.’s ‘Seven Roles of a Service Designer’ to suggest various roles that designers can occupy in developing loneliness interventions for older adults.

## 5.5 Identifying actionable insights

<b>Roles</b>	<b>Characteristics</b>	<b>Examples of possible activities</b>
<b>Designer as Facilitator</b>	<p>Joining up different styles of thinking, philosophies and approaches from different stakeholder groups.</p> <p>Enabling better collaboration, synergy and participation of people. Mobilising and energising thinking of others.</p>	Facilitating conversations between creators of different interventions to share best practices and to identify opportunities for replicating successful work in different settings.
<b>Designer as Communicator</b>	<p>Using visuals to initiate conversations around issues, gain feedback for iterations and ideas.</p> <p>Using communication devices to bring together disparate stakeholder groups.</p> <p>Closely linked to the facilitation role.</p>	Using inclusive empathic communication strategies to encourage lonely people to explore suitable services in their area.
<b>Designer as Capability builder</b>	<p>Transferring design processes and methods to the services to enhance their own processes.</p> <p>Acting as a 'conduit' in the knowledge transfer process.</p>	Sharing brainstorming tools and other useful techniques or templates to allow services to solve problems.
<b>Designer as Strategist</b>	Involved in designing and planning action and policy to achieve a major or overall aim.	Using strategic design thinking to allow interventions to keep up with changes.
<b>Designer as Researcher</b>	<p>Doing research with stakeholders and potential stakeholders of the product or service.</p> <p>Project outcomes are usually recommendations, improvements, ideas and opportunities translated from design-led research, rather than design artefacts.</p> <p>Drawing research methods from architecture,</p>	Conducting thorough research on interventions aimed at uncovering 'actionable insights', identifying problems and opportunities and monitoring impact.

## 5.5 Identifying actionable insights

	development studies, anthropology, social sciences, marketing, business etc.	
Designer as <b>Entrepreneur</b>	Designer involved in end-to-end process of developing and rolling out an idea that can function profitably or sustainably.	Looking at opportunities to make the intervention financially sustainable and viable.
Designer as <b>Co-creator</b>	Relationship with users is to both 'design with' and 'design for'.  Co-design's approach is about: The participation of people; A development process; The creation of ownership; and being outcomes-based.	Empowering the socially isolated or lonely older adults by allowing them to choose and customise their service according to their own needs.

Table 19: Seven roles of a designer in developing loneliness interventions. (Adapted from Yee et al.'s 'Seven Roles of a Service Designer', 2009)

Although Table 19 presents seven distinct roles that designers can play in developing and deploying a variety of loneliness interventions, this research represents a combination of three roles mentioned above. During this study, the role of the designer can be described as that of a researcher, a strategist, and a facilitator to varying degrees, at various points in time. Design plays a very important role in 'activating, sustaining, and orienting processes of social change' towards a more sustainable future and is therefore deeply connected to social innovation (Manzini, 2015). The trialling with a SIFAA-based intervention suggests that design played a pivotal role in all stages of this research work. The early phase of identifying patterns in loneliness interventions required meticulous planning, and *designing* a template to sort the interventions into different comparable categories. In fact, the development of SIFAA itself was an outcome of 'creatively recombining' existing theoretical frameworks to address a gap in research that had been identified using the pattern analysis approach mentioned above. This ability to innovate, which is characteristic of design thinking (Brown, 2008, Manzini, 2014) played a major role in brainstorming

## 5.5 Identifying actionable insights

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SIFAA-based ideas that could be implemented during the trial. It required knowing what type of interventions were already operational, and needed crosspollination of creative ideas.

Design also played a vital role in the iterative prototyping approach that was adopted during the action research based trial. Through a constant focus on reflection and problem-solving, an existing loneliness intervention was transformed into a radical-digital one. However, the role of design does not stop with development and deployment of SIFAA-based interventions. By augmenting and reinforcing social interactions between older adults and ‘previously unimagined’ stakeholders, designers can help interventions become more accessible, effective, lasting, and replicable (Manzini, 2015). Thus, design can either help in conceiving novel modes of social innovation that address loneliness amongst older adults, or it can help in effectively upscaling, or *outscaling* existing social innovations that effectively tackle later life loneliness.

### *A shift in perspective*

Another major finding from this study comes in the form of a proposed shift of focus away from older adults, onto the context within which they might experience loneliness. Mitigating loneliness experienced by older adults is an emotional research and design context and can lead to concerted efforts aimed at helping older people. However, such dedicated efforts at ensuring the wellbeing of older adults can frame them as being central to the problem, rather than seeing them as being part of a possible solution. Analysis from this study suggests that while developing loneliness interventions, it is not only important to consider what older adults must gain out of participating in loneliness interventions, but also how other stakeholders such as volunteers, and service providers can benefit from such an engagement.

Other factors such as having very different lifestyles, physical abilities, and priorities deepen this chasm between older adults and the rest of the society, resulting in older adults being ‘disengaged’ and consequently losing their social roles in time. If we are to come close to alleviating loneliness experienced by older adults, we need to look at the wider social context within which this psychosocial problem

## 5.5 Identifying actionable insights

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exists. For example, apart from the facilities specifically dedicated to helping older adults, which are generally medical in nature, the wider range of products and services available in the market in highstreets or other shopping venues do not cater to the older demographic. Thus, highstreets or local markets in their present 'toxic form' (Townshend, 2017), do not offer older adults a motivation to engage with them, thereby excluding older adults from an opportunity to socialise. This disassociation can start a vicious cycle wherein older consumers' absence from the local market means that businesses do not see any value in catering to them, resulting in further marginalisation of older adults.

However, a closer look at some financial data can challenge this perception of older adults as being an economically unviable consumer segment. For instance, "the majority of the UK's personal wealth is now held by the over-55s, and a substantial portion of this comprises *unmortgaged* housing assets" (McKinsey & Company, 2010 p. 68). In addition to that if we compare the projected growth of the younger market (18-59 year old) which is likely to grow by 7% between 2005 to 2030, to the projected growth of the older market (60 years and older) for the same period, the latter is much higher at 81% (ActiveAge, 2012). These projections suggest that there is a massive opportunity for encouraging individuals and organisations interested in designing products and services, to develop innovative offerings that cater to the needs of older adults. Doing so can re-engage older adults with their local markets, the highstreets, and consequently, the rest of the society, easing some of the social isolation and loneliness experienced by them. However, necessary checks and balances need to be put into place to prevent older adults from being exploited in a bid to extract 'value' out of them.

### *Tracking the rise of radical-digital loneliness interventions*

Although radical-digital loneliness interventions are underrepresented, their deficiency cannot be considered directly or indirectly responsible for the persistence of loneliness and / or social isolation amongst older adults despite decades' worth of efforts devoted to alleviating them. Due to their low numbers in this area, much is yet to be known about the strengths and weaknesses of such interventions and this thesis

## 5.5 Identifying actionable insights

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represents an early exploration of this insight. An investigation of *contemporary* information (from the examination of grey literature) during this study however, indicated that the representation of radical ideas and digital technologies in loneliness interventions is on the rise. This offers an interesting opportunity for further research and experimentation in the area to understand the viability and sustainability of radical-digital loneliness interventions. More research into the ‘weak but positive’ correlation (Section 5.2.2) between radical innovation and the use of digital technologies in designing and implementing loneliness interventions that was found during this research, can establish a better understanding of this relationship. Such knowledge can then help stakeholders in making informed choices about dedicating their resources to either radical innovation, or digital technology, or both.

In addition to the conceptual learnings presented within this section, there were some reflective findings from using the bespoke research tools and techniques implemented in this study. These have been presented in the following section.

### 5.5.2 Methodological insights

As discussed previously (Chapter 1), due to the multifaceted (Murphy, 2006, Law, 2004) nature of the research problem, a unique investigation strategy had to be devised for this study. This procedural improvisation resulted in the development of novel techniques to gather and analyse data. Operationalising these experimental research methods yielded some insights which have been presented here as methodological findings from this research.

The decision to use three distinct research methods to probe the research questions (Section 1.2.1), provided a more *three-dimensional* view of the research problem at hand. In terms of Norman and Verganti’s (2012) hill climbing metaphor, this *triangulation* of methods allowed for not just assessing the height of the hill, but also helped in gauging the slope and mapping the terrain. By looking at loneliness amongst older adults from three *perspectives* (Nietzsche, 1968), this research was able to, 1. understand the ‘existing’ approaches to mitigating loneliness, 2. highlight a gap in the area worthy of further exploration, and 3. propose as well as empirically



## 5.5 Identifying actionable insights

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test the SIFAA framework to address the gap. Figure 31 demonstrates the value of having multiple perspectives in research. Depending on which angle or perspective a researcher takes, the findings from a research project looking at the same problem can appear to be very different. Therefore, a well-planned, multimethod study, that triangulates data can provide a holistic understanding of any given research problem.

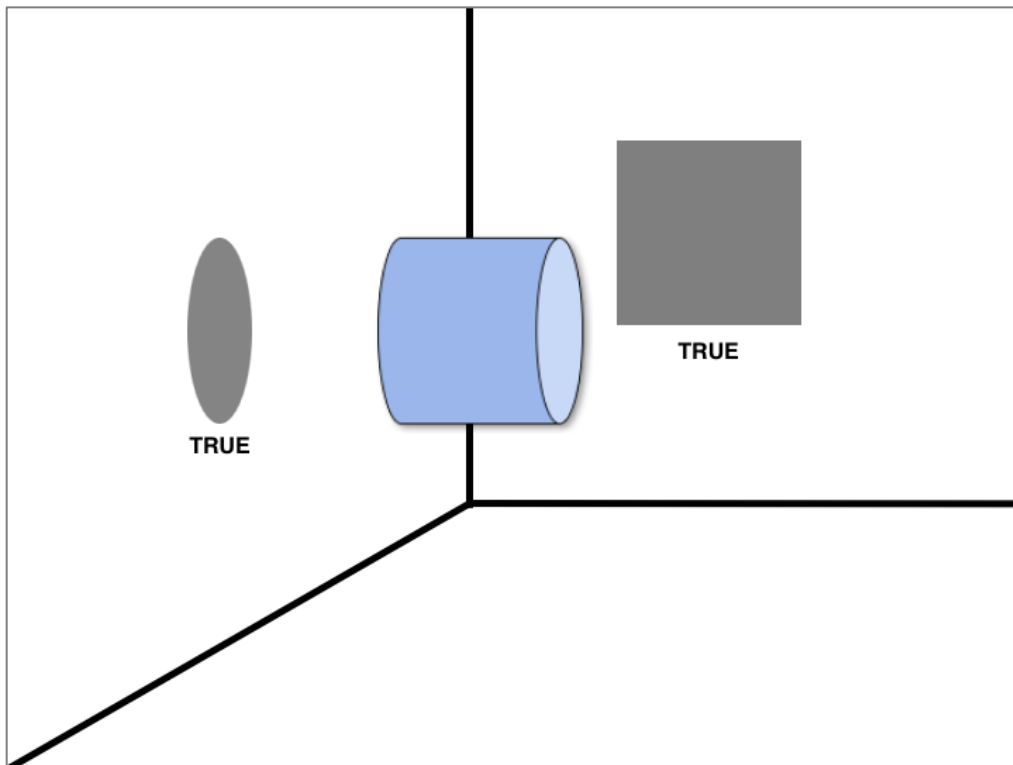


Figure 31: A representation of Nietzsche's 'Perspectivism'.

Although this research yielded insights related to various aspects of loneliness experienced by older adults, having three diverse research protocols within the time and resources allocated to academic research at Ph.D. level, posed certain *management* challenges. For instance, the trial could not be run for more than 6 sessions, due to a limited amount of time allocated to the action research based trial during the action planning stage. Perhaps the strengths of such a triangular methodology truly come to light when there is either more than one researcher involved, or the timeline is longer.

## 5.5 Identifying actionable insights

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Another methodological contribution of this thesis was the bespoke nature of the coding strategy developed to categorise data from the SLR. The classification method and the resultant visualisations were unique and enabled the comparison of different loneliness interventions. This pattern analysis approach can be adapted and applied to other settings expressing an interest in comparing and contrasting products and services. However, there were certain limitations to using this approach. For example, though the innovation scale (Section 4.7.1) was based on an existing classification proposed by Langrish et al. (1972), and *intercoder reliability* was established (Section 4.8), the system could be improved further especially because it was harder to distinguish between ‘incremental’ and ‘major innovation’. It was only upon reviewing a large number of interventions, that some of these issues were uncovered. Possibly, by reducing the innovation coding categories to 3 rather than 4 levels, the ambiguity between various levels of innovation could be limited in future.

Also, this study makes a case for including ‘grey literature’ from online sources such as *Twitter* within SLRs examining health interventions. This thesis demonstrates that by adapting strategies that introduce credibility into SLRs, grey literature can also be consulted systematically, and be included into such comprehensive reviews with credibility. Doing so requires referring to retrievable repositories of such data, as well as meticulous documentation of keywords and the step-by-step approach taken to finding and analysing such interventions so that the study can be replicated.

The template designed to brainstorm SIFAA-based intervention ideas (Table 13) is another key contribution of this study as it can be customised by intervention designers to conceive more radical-digital interventions. Alternatively, the template can even be used as a means to sense-check intervention ideas developed by designers using alternate creative approaches. It is important to note however, that SIFAA-based interventions are not the only way of developing radical-digital loneliness interventions. Even within the SLR there were examples of radical-digital loneliness interventions such as a documentary film, and a music album that were both radical, in that they aimed to raise awareness about loneliness issues on a societal level, rather than focussing on helping older adults directly, but they were not based on SIFAA because they did not look to find suitable replacement to older adults’

lost roles by combining two problems such that they addressed each other. This thesis maintains that SIFAA-based loneliness interventions are just one type of radical (and possibly digital) interventions and that the action research based trial in this research is just one possible example of that variety.

## 5.6 Summary

This chapter discusses individual as well as aggregated results from the three research methods deployed during this study; namely, the SLR, the expert interviews, and the action research based trial. The first section of the chapter presents a rationale behind involving 'grey literature' into the SLR and presents an overview of patterns discerned during the analysis of all interventions. An examination of the results showed that *one to one* interventions were the most popular type of services offered to older adults. Similarly, *remedial* services and *incremental* innovation represented more than half of the total interventions. Overall, the SLR provided empirical evidence behind the suggestion from the preliminary analysis (Chapter 1) that radical innovation and digital technologies were both underrepresented in the context of developing loneliness interventions for older adults. This chapter presented the results from the examination of loneliness interventions across the four levels of innovation i.e. improvement, incremental, major, and radical innovation, alongside examples from each category.

In the second part of the chapter, a commentary from experts in the area about possible explanations behind the lack of radical-digital loneliness interventions was analysed and presented. Experts consulted during this research represented a variety of stakeholders such as NHS staff, intervention providers, academic researchers, etc. Findings from the semi-structured interviews with these experts resulted in two complementary themes i.e. 'barriers' and 'bridges'. While barriers included five factors that inhibit the promulgation of radical-digital loneliness services, bridges signified the other set of five complementary factors that could enable their development and deployment. It was found that digital technologies could play a

## 5.6 Summary

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pivotal role in developing such bridges. The third section, detailed out the findings from the action research based trial that was commissioned as part of this study. This part of the chapter presented the journey that the intervention went through during its transformation from an incremental intervention with low usage of digital technologies, to one that was radical, and *depended* on the Internet to operate (Figure 30). By highlighting the entire process of this makeover, this section elucidated the various design choices that were made alongside the rationale behind those decisions. This knowledge can be useful for intervention designers interested in taking some of the propositions of this thesis forward.

The final segment of this chapter presented an aggregated analysis from the overall findings of this research. By discussing the overall findings of this study on two levels, namely, conceptual and methodological, this segment discussed some of the core contributions of this study. For example, the relationship between radical and digital technologies, the role that designers can play in this area, and the innovative tools and techniques developed to gather and analyse data from this study were discussed as core conceptual and methodological insights emerging from this thesis.

The following chapter will evaluate SIFAA as a framework in terms of its strengths and limitations in developing loneliness interventions aimed at mitigating later-life loneliness.



# Chapter 6. Social Innovation For Active Ageing: Evaluation and Future Potential

*"We must use time wisely and forever realize that the time is always ripe to do right".*

- Nelson Mandela



## 6.1 Overview

This chapter is dedicated to evaluating the core contribution of this thesis, i.e. a framework aimed at designing loneliness interventions for older adults, called *Social Innovation For Active Ageing* (SIFAA), as proposed in Chapter 1. In light of findings from Chapter 1, this chapter offers a discussion on SIFAA's role in developing radical-digital loneliness interventions, and attempts to address the specific questions that underpin this research work (Section 1.2.1). It offers a reflection on the development, and subsequent implementation of SIFAA and discusses its strengths and weaknesses learned during this study. It highlights SIFAA's flexibility as an approach by presenting a framework that can help in developing brand new radical-digital loneliness interventions, and allow for the upscaling / outscaling of existing radical (and digital) interventions that conform to the tenets of SIFAA. This chapter also highlights how this framework can be used to transform existing interventions' Standard Working Principles (SWP) such that they represent radical innovation. The chapter then concludes with a brief discussion about SIFAA's future, and how design knowledge produced from this study could be useful to stakeholders interested in developing loneliness interventions for older adults in the future. It also offers a closing commentary on the prospect of radical ideas and digital technologies in developing such loneliness interventions in future.

## 6.2 Developing radical-digital loneliness interventions using SIFAA

Having unpacked the theoretical underpinning of SIFAA in Chapter 1, the following section discusses how it can be utilised in developing loneliness interventions for an ageing population. This section proposes a novel framework that comprises the coding strategy developed during this study (Section 4.7.1), the template used to brainstorm SIFAA-based interventions (Table 13), and the action



## 6.2 Developing radical-digital loneliness interventions using SIFAA

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research approach adopted for this thesis (Section 4.5). Depending on requirements such as the availability of resources or the context within which a loneliness intervention needs to be deployed, it could be more appropriate to either upscale or outscale an existing radical-digital loneliness intervention, or to transform an existing intervention into a radical-digital one. Also, certain scenarios might require the creation of brand new loneliness interventions. Three different ways in which this framework can be used to develop and deploy SIFAA-based radical-digital loneliness interventions have been discussed as below.

### 6.2.1 Upscaling or outscaling existing SIFAA-based interventions

Being able to identify existing interventions that conform to the tenets of SIFAA, is the first step to upscaling or outscaling them. This thesis suggests that the original coding strategy developed for the SLR (Section 4.7.1), can be used to examine a host of loneliness interventions, in addition to the ones analysed in this thesis. Doing so can help in identifying those interventions that represent radical innovation. Once such interventions have been classified, the template designed to shortlist SIFAA-based interventions (Table 13) can be adapted to segregate those interventions that conform to key tenets of SIFAA (Section 3.3) from other radical loneliness interventions. Finally, to ensure that the shortlisted radical interventions are suited to the context within which they intend to be deployed, an action research approach (Susman and Evered, 1978) can be used to iteratively adjust the interventions to match their new context.

For example, results from the SLR carried out during this thesis identified *Writing Back Leeds* as a radical intervention (Section 5.2.1). Adapting the template developed previously (Table 13) can help ascertain that *Writing Back Leeds* conforms to the tenets of SIFAA as can be seen in Table 20. For researchers or intervention developers interested in upscaling this intervention, one possible route to take would be to find ways of fostering befriending relationships online. By using iterative prototyping techniques grounded in an action research methodology, a digital platform can be developed that allows a higher number of older adults as well as students to participate in the intervention, on a global scale. Similarly, if *Writing Back*

## 6.2 Developing radical-digital loneliness interventions using SIFAA

*Leeds* was to be replicated instead in another city, i.e. outscaled, an action research approach can help in developing appropriate strategies to recruit participants, or address other issues such as cultural differences.

Idea Name	Writing Back Leeds	
Problem 1	Older adults experiencing loneliness.	
Problem 2	University students experiencing isolation in a new city.	
Have they been 'creatively recombined' to address each other?	Yes (How?)	No (Why?)
	Older adults and younger students are involved in writing letters to each other such that they befriend each other.	
What is the role of the older adult?	Receiving help	Offering help (How?)
	By exchanging local knowledge, stories, etc. via letters, older adults help younger students adjust to their life in a new city.	
		Social Innovation
		Active Ageing

Table 20: Identifying whether *Writing Back Leeds* conforms to the tenets of SIFAA

### 6.2.2 Transforming existing interventions into SIFAA-based ones

In order to transform an existing intervention into one based on SIFAA, being immersed in the research context is the first natural step. This thesis suggests that using an action research methodology upfront can allow intervention designers or researchers to 'diagnose' the problem. For example, it can help in assessing the capacities and capabilities of older participants, which can be useful in ideating about finding suitable replacements to their lost roles. Also, using the coding approach can help determine the status of the intervention in terms of its current level of innovation, the extent of use of digital technologies, and its *Standard Working Principle (SWP)*. This is important because knowing the 'existing' scenario helps in setting goals for the 'preferred' situation (Simon, 1988). Once the action research cycle has been set into motion, and the status of the intervention has been determined

## 6.2 Developing radical-digital loneliness interventions using SIFAA

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using the coding approach, the template (Table 13) can help in brainstorming ideas to alter the intervention's SWP, such that older service users can remain actively engaged by offering help and support to those that need it. This mutability of existing interventions (improvement, incremental, or major) into radical ones has been demonstrated earlier through the action research based trial that was carried out during this study (Sections 4.7.3, 5.4, and 5.5.1).

### 6.2.3 Creating brand new SIFAA-based interventions

In order to create brand new SIFAA-based interventions, the template (Table 13) can be used early on in the process. Design thinking tools such as *IDEO method cards*<sup>30</sup> can be used to generate many potential ideas aimed at addressing later-life loneliness, and the template can then be used to shortlist those ideas that follow SIFAA principles. Once a SIFAA-based intervention idea has been shortlisted, an action research approach can be used to implement it. Multiple iterations of the action research cycle can help ensure that the intervention achieves the desired or *preferred* status in terms of level of innovation, and the use of digital technologies. The coding strategy can help in assessing whether further iterations of the action research cycle are required to ensure that the emergent intervention conforms to SIFAA principles.

For example, Table 21 demonstrates the use of the template to brainstorm a brand new SIFAA-based idea that looks to pair older adults living alone, who may find it difficult to cook, with users who have surplus home-cooked food that they can offer older users for a reasonable cost. Such an idea can allow users to host such older *customers* at the users' home, giving older users an opportunity to socialise and have a pleasant meal in a homely environment. To be able to implement this idea, intervention designers, or researchers will need to design a service that is easy to interact with for both parties, i.e. older adults living alone, as well as the food providers. The intervention should also allow both parties to carry out the transactions (social as well as financial) in a safe and secure manner. An action

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<sup>30</sup> *IDEO Method Cards* are a tool to facilitate design thinking and are meant to explore new approaches to addressing design challenges. They are often used to stimulate creative thinking by designers during brainstorming sessions.

## 6.2 Developing radical-digital loneliness interventions using SIFAA

research approach can help in achieving these objectives via iterative prototyping. Finally, the coding strategy developed for the SLR (Section 4.7.1), can be used to assess whether the intervention has achieved its desired radical-digital status.

Idea Name	<i>Meal Sharing</i>	
<b>Problem 1</b>	Older adults living alone experiencing loneliness and not being able to cook.	
<b>Problem 2</b>	Individuals / families cooking extra food that goes to waste.	
<b>Can they be 'creatively recombined' to address each other?</b>	<b>Yes (How?)</b>	No (Why?)
	Creating a platform that allows users to host older adults experiencing loneliness and poor nourishment to join them for food for a reasonable financial cost to the older person.	
<b>What is the role of the older adult?</b>	Receiving help	<b>Offering help (How?)</b>
	The older service user can financially help someone as well as help reduce waste.	
		<b>Social Innovation</b>
		<b>Active Ageing</b>

Table 21: An example of using the template to create a brand new SIFAA-based intervention

While identifying and upscaling or outscaling existing interventions that conform to the tenets of SIFAA can be perceived as the low hanging fruit, creating brand new interventions can be relatively more challenging. Depending on whether intervention designers are looking to scale or transform existing interventions, or whether they are interested in developing brand new SIFAA-based interventions, a combination of the coding approach, the design template, and action research approach adopted during this study can be used (Figure 32). As can be seen in Figure 32, in order to upscale/outscale an existing radical-digital intervention, the first step would be to use the coding strategy developed in this study to identify existing radical-digital interventions, followed by using the template discussed above to shortlist SIFAA-based interventions worthy of being *scaled*, and finally using an action research approach to ensure that the shortlisted interventions are suited to the

## 6.2 Developing radical-digital loneliness interventions using SIFAA

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context within which they are being deployed. Similarly, to transform an existing intervention into a radical-digital one, an action research approach could be used upfront as a 'requirement gathering' endeavour, followed by ascertaining the existing intervention's current propensity towards radical innovation and digital technologies using the coding strategy developed during this study. Finally, using the template (Table 13) can help in brainstorming ideas that would alter the *SWP* of the existing intervention to give it a more radical-digital outlook. For developing a brand new radical-digital intervention, the first step would be to brainstorm novel loneliness intervention ideas. The template discussed above could be used to facilitate this brainstorm, and once a suitable idea has been shortlisted, an action research approach can help in operationalising it. Finally, the coding strategy developed in this thesis (Section 4.7.1) can be used to check whether the intervention has achieved the desired radical-digital status. Further research and experimentation with this framework will result in the emergence of novel sequences, combinations, and other changes to the framework proposed in Figure 32.

## 6.2 Developing radical-digital loneliness interventions using SIFAA

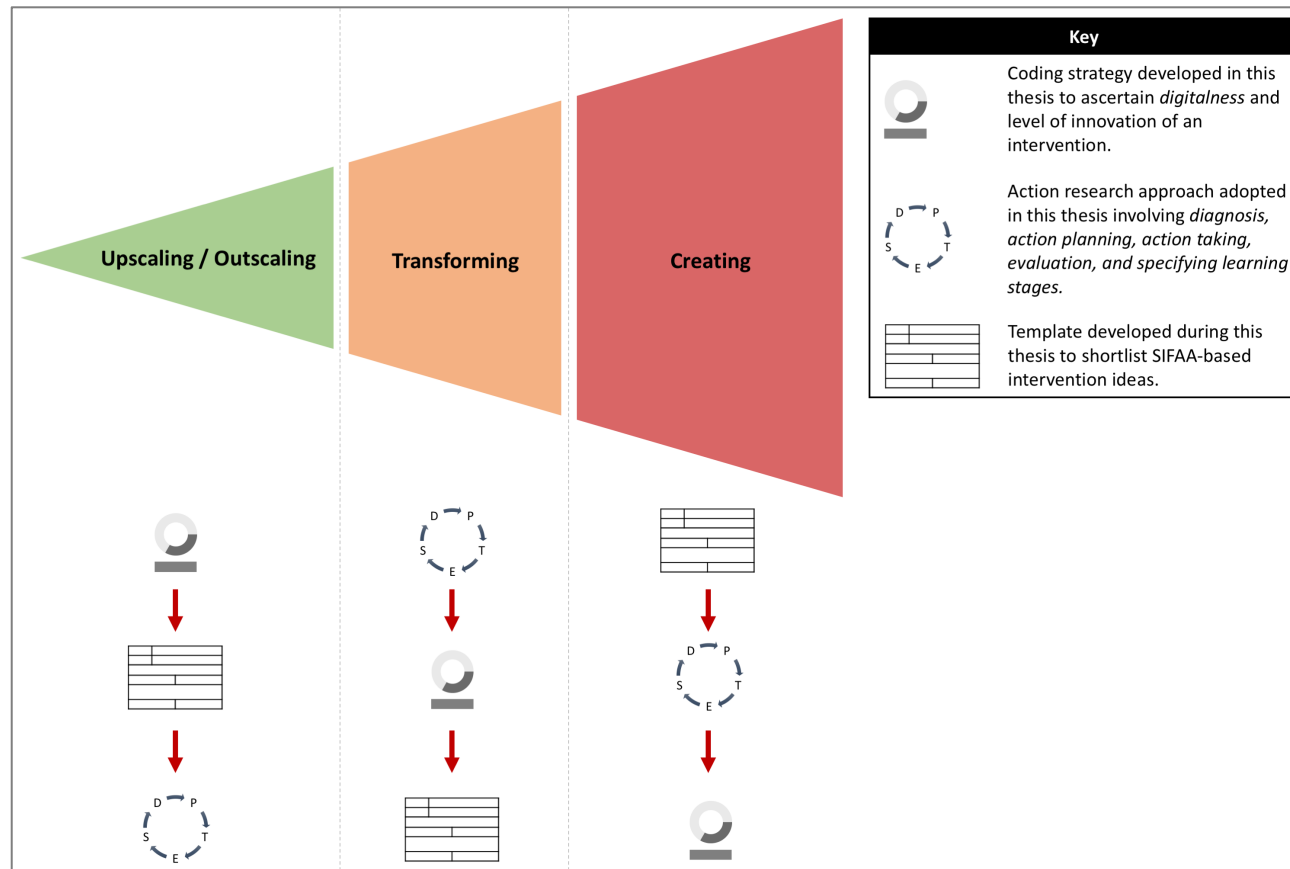


Figure 32: Using SIFAA to develop loneliness interventions

## **6.2 Developing radical-digital loneliness interventions using SIFAA**

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Having established SIFAA's capacity and capability for either developing new loneliness interventions, or transforming existing ones, this thesis proposes that designers have an important role to play in this area. Design's ability to leverage creative thinking, and finding novel recombination of existing knowledge and resources makes it an important aspect of innovation. In terms of social innovation (for active ageing), expert designers can help in facilitating the transmutation of existing loneliness interventions into radical-digital ones, but also aid the development of new interventions. The framework discussed above (Figure 32) can also allow non-expert designers to use the tools and techniques discussed in this thesis to develop SIFAA-based interventions. Thus, design itself, expert or diffuse, can play an important 'role' (Section 5.5) in finding suitable replacements for the potentially 'lost roles' of older adults. However, to be successful, intervention developers or researchers need to be cognisant of not just the potential strengths, but also of any known limitations SIFAA may have.

### **6.2.4 Limitations of SIFAA**

As pointed out previously (Section 5.2.2), brainstorming 'out of the box' ideas is not a straightforward process (Hage, 2011) and even though SIFAA can act as a framework to guide the generation of interventions based on radical innovation, firstly it does not guarantee the elimination of loneliness experienced by older adults, and secondly, it does not ensure the utilisation of digital technologies in running the intervention either. Also, due to the novelty of SIFAA and resulting 'radical' interventions, the overall process of conceiving, implementing and refining a SIFAA-based loneliness intervention can be more time consuming in comparison to implementing existing intervention ideas that have stood the test of time. This is because novel interventions need to go through an iterative prototyping phase before they become apposite for the context that they will eventually be deployed in.

It is important to reiterate that older adults are not a homogenous group (Section 2.3.3), and therefore not all older adults might be able to offer help and support to others who could benefit from their services. Also, while developing interventions that aim to make older adults more active, designers need to take biological,

## 6.2 Developing radical-digital loneliness interventions using SIFAA

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psychosocial, and economic factors into account to prevent exertion, exhaustion and exploitation respectively. For example, a SIFAA based intervention such as *Writing Back Leeds* may not be suitable for someone who might have an impaired vision, or dexterity issues – both conditions commonly associated with the ageing process. Similarly, not everyone might possess transferable skills such as the ability to interact in English successfully, or be capable of building wardrobes in a workshop.

For designers interested in developing loneliness interventions for older adults, comparing existing interventions to those that hold the same tenets as SIFAA, can provide meaningful insights. For example, it is important to note that SIFAA is not the only route to designing radical loneliness interventions. Ideas such as *Breaking The Spell Of Loneliness*, which is a music album, or *LinkAge Flashmob*, which is a spontaneous street dance performance by older adults, are both radical interventions but are not founded on SIFAA.

SIFAA's emphasis on radical innovation does not mean that there is no need for improvements, incremental, or major innovation. In some scenarios, an incremental approach might prove to be more useful than attempting to do things in a radically different way. For example, when trying to introduce the use of the Internet to someone who is not accustomed to using digital technologies, finding a *hook* (Section 5.3.2) and then incrementally supporting their capacity and need to use the Internet might be a more appropriate approach than trying to find completely novel ways exposing older adults to digital technologies. Similarly, incremental interventions can inspire solutions to problems encountered by radical ones. For example, in the case of the video-quality problem encountered during the trial (Section 5.4.1), inspiration can be sought from an incremental intervention such as *British Penpals*, to allow conversations to continue offline, and not necessarily in real-time. Thus, service designers interested in this area of research can benefit from comparing and contrasting different types of loneliness interventions.



### 6.3 The future use of SIFAA

Based on an extensive examination of literature concerning loneliness and ageing, a rich interaction with experts in the area, and an experimentation with a SIFAA-based loneliness intervention, it was found that the thrust of SIFAA's theoretical underpinning lies in making a radical shift in *working principles* of loneliness interventions, rather than altering their *modus operandi*. Once such a shift in perspective has taken place, digital technologies can help in expanding the reach of an intervention beyond its immediately physical context. In future, SIFAA will need to adapt and evolve in response to various sociotechnical stimuli it is likely to receive, during further exploration by researchers, designers, and other practitioners interested in mitigating loneliness experienced by an ageing population. These sociotechnical stimuli could range from the changing perception of older adults in society in the future given their increased share in global demographics, to a shift in information and communication technologies in future. The following points briefly address the considerations for the use of SIFAA.

#### 6.3.1 Contextualisation

Although it has been proposed in this thesis that once identified, SIFAA-based loneliness interventions can be upscaled or outscaled, this process is not as simple as transplanting them from one context to another. Due to the inherently 'social' nature of SIFAA-based interventions, it is important that they are suited to the sociocultural environment within which they need to operate. Thus, trying to implement existing (and effective) SIFAA-based interventions in new contexts is likely to have an element of exploration embedded within it, at least in the early stages. Research methodologies with a strong reflective focus such as Action Research can be useful in ensuring that such interventions adapt and evolve in response to their context and are relevant to the needs of their users.

### 6.3.2 Holism

Due to its name, it is easy to assume that SIFAA is only concerned with *Active Ageing*, and by association, only the older adults. However, because of the communal nature of SIFAA, it must be more holistic in nature and ensure that it provides some form of *value* to all stakeholders by empowering them in some way. For SIFAA-based interventions to be successful, mechanisms should be established that incorporate feedback from all participants such that *all* stakeholders are given an opportunity to shape the initiative. Also, because it represents an inclusive approach, interventions founded on SIFAA need not be prescriptive in nature, and participants should be able to adapt them to meet their needs. For instance, in case of the action research based trial carried out during this study, an English-speaking syllabus was not prescribed to allow participants on both sides, to let the conversations evolve *naturally*. In another context, perhaps having a prescribed syllabus or some prepared lesson might be more relevant.

### 6.3.3 Collaboration

The true potential of SIFAA lies in the effective collaboration of various stakeholders not just within the intervention, but also outside. For example, cooperation and collaboration amongst various interventions, can result in a cross-pollination of creative ideas to solve a common problem. Therefore, such collaboration can create a culture of generating ‘transferable knowledge’ which can be useful to anyone interested in developing SIFAA-based interventions. Collaborative endeavours can also support various other activities relevant to loneliness interventions related to funding opportunities, communicating the impact, or strategies to evaluate and refine loneliness interventions.

### 6.3.4 Communication

For researchers and designers to be able to experiment with SIFAA-based interventions, they need to be replicable in nature, and effective communication is key to ensuring that loneliness interventions are replicated successfully. In the

## 6.4 SIFAA in the sharing economy

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present day and age, digital technologies play a pivotal role in enhancing communication via dissemination, and can help make SIFAA-based interventions more visible. Also, being more visible or ‘observable’ (Rogers, 2010), can allow for the diffusion as well as evolution of SIFAA-based radical interventions. Therefore, the notion that SIFAA is only concerned with radical innovation is incomplete if not incorrect because digital technologies can play a vital role in operationalising SIFAA.

Carrying forward the discussion on the future of SIFAA, the following section highlights the rise of the sharing economy in recent years and points to it as a potentially fertile ground for experimentation with SIFAA. It further clarifies the role that digital technologies can play in preparing this land of opportunity for older adults and what new sets of tools and techniques will be required to reap the benefits of such an engagement.

## 6.4 SIFAA in the sharing economy

Given that SIFAA focuses on radical innovation as well as digital technologies, it can seek inspiration from other areas such as the rise of decentralised resource sharing networks popularly known as the ‘sharing economy’. Sharing economy ideas have proliferated in the last decade largely through the use of digital technologies. Thus, SIFAA can learn from the recent rise of such initiatives as they set a precedent for how existing innovations that have always occurred, can be amplified (*upscaled* and *outscaled*) via digital technologies and Web 2.0.

The rise of the ‘sharing economy’ is symbolised by the emergence of a number of distributed peer-to-peer (P2P) markets as alternative suppliers of goods and services traditionally provided by long-established industries (Zervas et al., 2014). Also known as ‘collaborative consumption’ (Botsman and Rogers, 2010), or ‘access based consumption’ (Bardhi and Eckhardt, 2012) sharing economy companies allow owners to rent out something that they are not using or something they can spare such as a house, a car, their *wifi* network, etc. to a stranger using these peer-to-peer

## 6.4 SIFAA in the sharing economy

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services. The sharing economy is transforming consumer behaviour by altering the relationship between consumption, possession, usage and ownership. “The old wisdom that we are what we own, needs modifying to consider forms of possession and uses that do not involve ownership” (Belk, 2014 p. 1595). Car rental giant Avis Budget’s takeover of peer-to-peer car sharing firm Zipcar, demonstrates that companies with traditional business models are also keen to establish footholds in the sharing economy. Moving into sharing economy appears to make business sense in terms of the “positive symbolic meaning” associated with sharing, the appeal of innovative digital technologies, and the rapid growth of sharing economy (Schor, 2014). Consultancy firm PwC estimates that by 2025, key sharing economy sectors may generate revenue opportunity worth \$335 billion (2014).

However, sharing of goods as well as services is something we have always been doing between families, between friends, through government and with infrastructures (Tonkinwise, 2015). Recent technological advances have spurred its growth by enabling networked platforms that allow sharing to operate at scale (Zervas et al., 2014). Belk highlights the importance of “the Internet, and especially Web 2.0” (2014 p. 1595) for sharing and collaborative consumption. Digitally enabled sharing economies facilitate connections between individuals and strangers allowing them to “connect, exchange, share information, and cooperate” (Schor, 2014) with ease.

As can be seen from the interventions reviewed during this study, SIFAA itself is primarily based on the principle of sharing resources. For example, sharing language in *School in the Cloud*, sharing local knowledge in *Writing Back Leeds*, sharing a house in *Homeshare*, etc. Therefore, like many successful ventures currently operating within the sharing economy, SIFAA nurtures shared experiences. While some of these sharing economy initiatives are commercial enterprises, others generate value in the form of social capital. For example, both *AirBnB* and *Couch Surfing* are sharing economy based initiatives that allow travellers to find suitable accommodations throughout the globe. While *AirBnB* involves a financial transaction between the services provider and the user, *Couchsurfing* on the other hand provides access to a

## 6.4 SIFAA in the sharing economy

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network of ‘free’ accommodations offered by the *Couchsurfing* community to anyone who hosts a guest via their website.

Perhaps finding ways of involving older adults in the sharing economy could help expand their social networks, whilst at the same time offering them suitable replacements to the social roles they may have lost in time? It is a question that has the potential to open up a discursive space about the future of the ageing population. For instance, if the *Meal Sharing* idea (Table 21) were to be implemented, then examining other initiatives within the sharing economy can help in gleaning out key actionable insights that can be used to deliver the *Meal Sharing* idea<sup>31</sup>. Doing so also places older adults at the heart of the consumer market, and could spark other business’ interest in the ‘ageing market’. Using sharing economy and the digital fabric that it utilises, upscaling or outscaling an idea such as *Homeshare* where an older person rents out a room within their house to a young student, could even give rise to a new type of entrepreneurs that did not exist before – the older adults. This can address the concerns around ‘financial viability’ of interventions raised by experts (Section 5.3). By asking such questions, this thesis attempts to move away from the pessimistic view of placing older adults at the epicentre of an imminent *Silver Tsunami*, and urges the research and design community to focus on the opportunities that this demographic shift is likely to generate.

By using the tools and techniques developed in this thesis (Section 6.2), intervention developers can create services that allow older adults to ‘share’ their knowledge, experiences, resources, etc. with someone else who can benefit from them. It is for the future researchers and designers to find out whether involving, and financially engaging older adults in the sharing economy can be a useful endeavour. For example, they need to consider whether such an engagement could ease some of the economic burden that healthcare services bear, or if sharing economy based

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<sup>31</sup> The *Meal Sharing* idea discussed here can seek inspiration from existing sharing economy ideas such as *Too Good To Go* that prevent the wastage of food by allowing restaurants to sell their surplus food to interested customers using a mobile phone application. See: <http://resource.co/article/new-app-hoping-revolutionise-restaurants-treatment-surplus-food-too-good-go-11292> (accessed 26/09/2017),

initiatives that involve older adults can become financially independent, etc. The monetary angle is just one possible aspect that can be explored and further research can uncover more such prospects.

## 6.5 Summary

This chapter highlighted how the tools and techniques developed during this study can be used to either upscale or outscale existing interventions conforming to SIFAA principles (Section 6.2.1), help in *radicalising* an existing loneliness intervention (Section 6.2.2), or create brand new radical SIFAA-based loneliness interventions (Section 6.2.3). The discussion herein also clarified that the focus on radical innovation does not undermine the value of improvements, incremental, or major innovation and that they can inspire various ideas to incorporate radical innovation and digital technologies in developing loneliness interventions. The chapter also highlighted some strengths and limitations of SIFAA, and suggested that to succeed in future SIFAA-based interventions will need to be contextually relevant, engage and involve all stakeholders in a holistic manner, collaborate with other interventions, and use digital technologies to communicate learnings and be increasingly visible.

In its concluding remarks, this chapter pointed at the rise of sharing economy, and the similarities between initiatives situated within the sharing economy network, and SIFAA-based interventions. It highlighted the possibility of looking at the sharing economy as a future site for operationalising SIFAA, and proposed older adults' involvement in the growing network of sharing economy as co-producers, and not just consumers. It argued that doing so could offer a strategic shift in the prevalent care environment, as well as address concerns around the financial viability of loneliness interventions.



# Chapter 7. Conclusion

*“And yet – and yet, this new road will some day be the old road too”.*

- (Munro, 1914)





## 7.1 Overview

This closing chapter of the thesis aims to summarise the key outcomes of this study, alongside highlighting its overall contribution to the advancement of knowledge in the area. The chapter starts by recapping the contents from each of the previous chapters, followed by discussing the key contributions of this study. On a conceptual level, it highlights how a proposed amalgamation of Activity Theory of Ageing (ATA) and social innovation extends the contemporary knowledge of both the theoretical frameworks. It also summarises the key practical offerings of this thesis such as the bespoke approach developed to identify and examine loneliness interventions. The social impact of this thesis is also discussed in the form of a call to reimagine our existing models of healthcare that are centred around older adults, such that they also incorporate the wellbeing of other stakeholders. This chapter also includes a reflective commentary on the current approaches to mitigating loneliness examined during this study, followed by insights related to the experimentation with SIFAA, and the role that designers can play in developing loneliness interventions for older adults based on radical innovation and digital technologies. This chapter concludes by highlighting the limitations of this work such as the possible temporal constraints of novelty in radical innovation, before pointing out the potential future trajectories that this research could take.

## 7.2 Thesis Summary

This thesis looked to answer the following question: *How can a hybridisation of Activity Theory of Ageing and Social Innovation i.e. SIFAA be used to develop loneliness interventions for older adults?* The answer to this question was sought by splitting it into 4 subsidiary research questions as follows:

1. What are the current approaches to addressing later life loneliness?

2. What are the strengths and limitations of using SIFAA in developing interventions aimed at reducing loneliness amongst older adults?
3. How do SIFAA-based interventions compare to other existing loneliness interventions?
4. What is the role of design in developing such interventions?

In pursuit of answers to these subsidiary questions, this research generated insights into how one may design, evaluate, and operationalise interventions aimed at mitigating loneliness experienced by older adults.

Chapter 1 of this thesis offered a synopsis of the overall study and introduced the aims and objectives of this investigation via the research questions mentioned above.

Chapter 2 presented a comprehensive review of literature that examined theories pertaining to loneliness, ageing, and their perceived association with each other. Doing so highlighted the complexities present in defining, identifying, as well as measuring loneliness. It highlighted that despite differences in how various scholars have attempted to define loneliness, they tend to be in agreement about its negative and undesirable effects on health. By reviewing various intrinsic, extrinsic, and combined factors that can cause loneliness, this chapter discussed the role of various psychosocial theories, such as the Activity Theory of Ageing (ATA), in developing loneliness interventions for older adults. This chapter also established the significance and timeliness of this research by presenting demographic data that forecasts an unprecedented rise in the population of older adults globally. In light of this unprecedented demographic transition, this chapter suggested the need to review our existing ways of mitigating later life loneliness.

Chapter 3 of this thesis served as a conduit between primary and secondary research in the sense that it channelled the flow of literature review from the theoretical realm, into the practical one. While the literature review in Chapter 2 focussed on framing the research *problem*, this chapter dealt with exploring the research space. This chapter examined 31 loneliness interventions and categorised them based on their scope (preventative, supportive, or remedial), objective (one to one, group-based, or community based), level of innovation (incremental or radical),

and the use digital technologies (physical or digital). This early review of loneliness interventions was crucial in identifying the gap in knowledge in the form of lack of radical-digital loneliness interventions, and underpinned the formulation of SIFAA as a possible way of addressing this gap. This chapter argued that the current socioeconomic environment that is under stress due to a global ageing phenomena is in fact, conducive to innovation and design thinking. It suggested that both activity theory of ageing and social innovation have mutually complementary qualities, and that ATA's limitations can be eased by hybridising it with social innovation. It argued that this hybrid idea can help in designing radically different loneliness interventions.

Having established a gap in knowledge worthy of further exploration, and developing a propositional framework (SIFAA) to address the gap in Chapter 1, Chapter 1 provided a detailed insight into the methodology that was chosen to undertake the study. This chapter of the thesis provided a rationale behind the chosen methods and clarified the influence of pragmatism on the overall approach that focussed on knowledge based on *thought* as well as *action*. It acknowledged the inherent *messiness* (Law, 2004) of social research of this kind, and suggested the blending of action research with action anthropology to devise an effective methodology to navigate this complexity. This chapter also established the credibility of this research work embedded in abductive reasoning-based data triangulation strategy. This chapter specified and rationalised the three research methods that were deemed appropriate and implemented during the study – The Systematic Literature Review (SLR), expert interviews, and the action research based trial.

Chapter 5 of this thesis represented the lengthiest segment of this thesis as it captured the outcomes of three distinct research protocols (the SLR, the expert interviews, and the action research based trial). Divided into three broad sections representing each of the research methods used in this study, the chapter captured, the main outcomes, analysis, and conclusions for each of the three research protocols. While a review of the 196 loneliness interventions in the SLR verified the early claim of this thesis that radical-digital loneliness interventions were in fact underrepresented, the 9 expert interviews pointed at impediments that could possibly be held responsible for this paucity of radical ideas and digital technologies

in developing loneliness interventions for older adults. The action research based trial produced useful, *practical* insights about the process of designing and implementing SIFAA-based radical-digital loneliness interventions. This chapter also included a meta-analysis of findings from all the research protocols.

Chapter 6 represented the evaluation of Social Innovation for Active Ageing (SIFAA), highlighting its strengths, limitations and the future directions this area of work can take. It discussed how SIFAA can be operationalised to either upscale/outscale existing radical interventions, transform an existing non-radical (improvement, incremental, or major) intervention into one based on SIFAA, and also develop novel SIFAA-based interventions. It considered the changes that SIFAA might have to undergo in its future iterations to be considered a successful way of designing loneliness interventions, and suggested seeking inspiration from the sharing economy for understanding how digital technologies can help in the scaling innovative ideas.

## 7.3 Contributions

The contributions of this thesis can be discussed on a theoretical, practical, as well as societal level as follows:

### 7.3.1 Theoretical contributions

This thesis highlights a gap in knowledge in the form of underrepresentation of radical innovation and digital technologies in developing loneliness interventions for older adults, and therefore provokes new grounds for further research into the area. An early exploration of this suggested gap in knowledge included within this study, also theorises the relationship between radical innovation and digital technologies for developing loneliness interventions, suggesting that digital technologies can play an important role as *bridges* to overcome the perceived *barriers* hindering the adoption of radical innovation in this area. In a bid to address the gap highlighted by

## 7.3 Contributions

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a lack of radical-digital loneliness interventions, this thesis proposes a creative recombination of activity theory of ageing and social innovation such that they are mutually beneficial. In doing so, this thesis advances existing knowledge for both theoretical concepts. The resultant proposed framework i.e. SIFAA, itself is a theoretical contribution of this thesis and offers a novel way of designing loneliness interventions for older adults. This thesis also offers an insight into the potential role that design, and designers, can play in combating loneliness experienced by older adults by facilitating the development, adoption, and evolution of SIFAA-based loneliness interventions.

### 7.3.2 Practical Contributions

This thesis acknowledges the multifarious nature of the research problem investigated during this study and makes a case for developing context-specific knowledge by combining the core principles of action research and action anthropology. To advance the *thought* as well as *action* in developing loneliness interventions for older adults, this thesis presents a unique three-dimensional approach utilising an SLR, expert interviews, as well as an action research based trial. Within the SLR, this thesis makes a practical manoeuvre by demonstrating the systematic inclusion of grey literature, i.e. interventions found by examining social media (*Twitter*) within the review. This strategy can be adopted, and adapted by other studies interested in SLRs. Also, the coding and visualising method developed for examining loneliness interventions in this thesis can be utilised in either extending this study by including more interventions, or can be tailored to suit other research contexts. Also, this thesis provides practical knowledge useful for developing loneliness interventions through tools such as the template for assessing SIFAA-based interventions (Table 13), and design insights emerging from the trial Table 18. This thesis offers a framework aimed at scaling existing radical-digital loneliness interventions, transforming existing interventions into radical-digital ones, or conceiving brand new radical-digital loneliness interventions using SIFAA.

### 7.3.3 Social Contributions

The theoretical and practical contributions of this research guide this study's pathway to social impact. By examining relevant literature, and engaging in primary research, this investigation uncovers the underlying issues of existing approaches to caring for older members of our society. This thesis argues for more consideration of interests of stakeholders other than older adults whilst developing loneliness interventions for older adults. Even when focussing on older adults, this thesis suggests a change in perspective in how intervention designers and providers look at older adults. This study argues that older adults can occupy a more prominent role in the solution space, rather than being considered as the genesis of socioeconomic problems. Finally, feedback from the participants in the trial suggests that although for a short period, the trial could make a positive contribution to their life.

## 7.4 Reflection

The series of sequential activities undertaken during this study (see Chapter 1) resulted in seeking answers to the subsidiary research questions this thesis sought to answer (Section 1.2.1). While research in the area of mitigating loneliness experienced by older adults is still ongoing, it is paramount for this thesis to offer reflective insights for the benefit of other researchers investigating similar research problems now, or in future. The following sections summarise key findings from this study followed by reflective commentaries. The chapter itself concludes with a discussion of the overall limitations of this study.

### 7.4.1 The current approaches to addressing later life loneliness

This study highlighted the similarity in the approaches used to tackle loneliness and clinical depression owing to the resemblances in their symptoms. However, this research only focussed on the non-pharmacological approaches to mitigating loneliness experienced by older adults, primarily operating as services. This study

demonstrated that existing loneliness interventions can be classified based on their objective, scope, their extent of use of digital technologies, and their level of innovation.

The examination of 196 loneliness interventions in this thesis highlighted the vast variety of services that operated to address later life loneliness. These interventions ranged from time-tested ideas such as befriending services and letter-writing projects, to novel ideas that paired older adults with keen runners as mentors, or services that attempted to replicate the known benefits of animal therapy through robotic soft-toys – all aimed at mitigating loneliness experienced by older adults. Even the extent to which various interventions utilised digital technologies varied considerably. A community-based, remedial service, based on incremental innovation that only utilised 1 out of 6 aspects of digital technologies (Section 3.4.2) represented the most common type of loneliness intervention amongst those reviewed in this thesis.

Upon reflection, it was found that capturing the diversity of loneliness interventions itself is useful in developing novel services. Apart from upscaling and outscaling attractive services, having a repository of various loneliness interventions, and how they work, can allow for crosspollination of ideas, potentially resulting in hybrid vigour. Also, though this research was concerned with radical innovation and hence discussed its underrepresentation in the solution space, it was found that *improvements*, and *major innovation* were also lacking in comparison to incremental innovation which accounted for more than half of the interventions examined. Further research into these types of interventions should contribute to a fairer comparison between loneliness interventions in future.

### 7.4.2 Using SIFAA in developing loneliness interventions for older adults

This thesis attempted to understand the strengths and limitations of SIFAA in developing loneliness interventions for older adults through experimentation. An action research based trial that paired older adults in the UK, with students from a University in India using *Skype* was conceived and implemented (Section 4.7.3 and Section 5.4). This trial indicated that SIFAA can be utilised to transform an existing



loneliness intervention, into a radical-digital one. The tools developed during this thesis to operationalise SIFAA (Section 6.2) also proved to be a useful way of suggesting suitable replacements for the social roles that older adults may have lost in time. Further research into other scenarios such as upscaling or outscaling an existing intervention that conforms to the tenets of SIFAA, or developing a brand new SIFAA-based intervention based on the strategies proposed in Section 6.2, can help determine if the proposed combination, and sequence of the tools developed during this study (Figure 32) are suitable.

Additionally, because SIFAA does not mandate the utilisation of digital technologies, it was noticed that SIFAA was more suited to designing radical interventions (Section 6.2.4), rather than radical-digital ones. This means that designers interested in utilising SIFAA for developing radical-digital interventions, could either distillate their ideation sessions in such a way that they only shortlist ideas that are both radical as well as digital in nature, or they could come up with interventions based on SIFAA that were radical (not necessarily digital), and utilise digital technologies to support various aspects of it, without attempting a *force-fit*. An example of how digital technologies can support ideas can be found in Tonkinwise's discussion on the rise of sharing economy (Section 6.4). Tonkinwise suggests that sharing as a phenomena has always been an integral part of our society and in its modern avatar, digital technologies have allowed it to acquire mass and momentum (2015).

### 7.4.3 Comparing SIFAA-based interventions to others

The SLR combined with the action research based trial carried out during this study allowed for comparison between SIFAA-based interventions and others. After reviewing 30 radical interventions (including the trial) that were explored during this study, it was found that although SIFAA was useful in developing radical (and potentially digital) loneliness interventions, it was not the exclusive route to designing such interventions. Some radical-digital interventions such as *PARO*, *Chat Mats*, *Man on the Moon Christmas Advert*, etc. were all radical interventions but did not demonstrate any aspects of SIFAA.

By trying to address other participating stakeholders' needs, in addition to loneliness experienced by older adults, SIFAA provided an alternative perspective to traditional models of care where the benefits of participating in a service tend to be higher for the older adults, in comparison to the volunteers. For example, benefitting the overall community in *Men in Sheds*, the schoolchildren in *Silver Stories*, or the keen runners in *Good Gym*. It is noteworthy that while 'other' interventions were primarily based around helping older users, some SIFAA-based interventions were more interested in helping the other party, and only happened to address loneliness experienced by older adults as a by-product of some other activity. Thus, SIFAA-based interventions challenged conventional models of caring for older adults where the older person occupies a central position. For example, *School in the Cloud* is more concerned with educating the schoolchildren and although they refer to their online teachers as *Grannies*, these grannies can be of any age, gender, nationality, etc. They concentrate on offering quality online education to the schoolchildren participating in their project.

### 7.4.4 The role of design in developing such interventions

This thesis highlights the role of design, and designers in developing, implementing and evaluating SIFAA-based loneliness interventions. It argues that both *expert design* and *diffuse design* (Section 3.2.1) play a very important role in addressing later life loneliness. While diffuse design nurtures local initiatives based on radical innovation, expert or professional design can help in upscaling, outscaling and sustaining such ideas (5.5.1). By devising a research strategy based on Simon's interpretation of design, this thesis also suggests dedicating more resources to understanding the *existing* problems in designing loneliness interventions before moving on to imagining *preferred* solutions to these problems (Section 1.2). Invoking the various roles that designers can play in developing loneliness interventions (Table 19), this study lays the foundation for the inclusion of designers and design thinking in developing novel loneliness interventions for older adults in future.

However, findings from this thesis also indicate that the current healthcare environment is somewhat resistant to deviations from the status quo (Section 5.3.2)

## 7.5 Limitations and future directions

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and therefore, it might hinder the involvement of designers in suggesting radically different ways of conceiving and implementing loneliness interventions. This itself can be a provocative challenge for designers to foster a cultural shift where they can facilitate openness to change and foster collaboration among relevant stakeholders.

In addition to offering reflective insights concurrent with the objectives of this research, the following discussion also offers a brief introspective discussion on the perceived limitations of this study overall.

## 7.5 Limitations and future directions

This section highlights some of the key limitations of this thesis and offers suggestions as to how to overcome these through further research. It is important to note that this section only deals with limitations of the *overall* thesis. Limitations that correspond to specific research tools and techniques deployed in this study, have been discussed previously in (Sections 5.2.2, 5.3.3, 5.4.4, and 5.5).

This thesis highlighted SIFAA's strength in designing radical loneliness interventions aimed at older adults. However, it also indicated that by bringing in new and previously unimagined stakeholders, SIFAA produces a context that is shared amongst diverse stakeholders. The noticeable distinctions between the participating groups can potentially cause difficulties in designing, researching, or operating such interventions. For instance, although the action research based trial developed during this study was designed to be mutually beneficial to the older participants as well as the Indian students, the thrust of insights from this research activity were based on participation of older adults. Therefore, in future, a comprehensive research strategy aimed at capturing the contexts, and perspectives of all stakeholders involved will be helpful in painting a holistic picture of SIFAA.

Another somewhat associated limitation of this thesis relates to the use of action research as the methodology guiding the overall study. Although Kock's insinuation that the data produced by action research can be 'broad and shallow' was carefully considered, and multiple iterations of action research cycle were planned to tackle

## 7.5 Limitations and future directions

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this ‘threat’ (2004), findings from this thesis can appear to be broad if not shallow due to the use of three different methods of data collection. Further research interested in extending this work can consider being *narrower* in scope and exploring fewer aspects of this research area in more depth and detail. For example, carrying out an end-to-end action research based trial aimed at developing and deploying a sustainable SIFAA-based loneliness intervention, can help in identifying specific best practices that can be replicated or adapted for other contexts.

One of the major limitations of this study, and therefore also a potential candidate for future research, is its advocacy for radical innovation. This thesis predominantly frames radical innovation around the ‘novelty’ of ideas. However, because our understanding of newness is permanently wedded to the notion of time, what might be considered radical at a particular time and space, may not be so in another. Bessant et al. have also highlighted how varying perspectives can influence one’s opinion on whether an innovation should be classed as radical or not. According to them, “‘radical’ is in the eye of the beholder” (2014 p. 1285).

Though this shifting definition of radical innovation that always seems to be at an arm’s length is a limitation of this study, it needs to be acknowledged due to its centrality to the overall thesis. It does however sit well with this thesis’ pragmatic claim of all knowledge (including that produced in this thesis) being context-specific and holding true for a given time and space. Therefore, further research into clarifying the temporal affiliation of radical innovation could help in understanding its role in this area. Pragmatically speaking, keeping an eye on latest trends in the technology sector could be helpful in introducing radical innovation to loneliness interventions via ‘technology change’. Alternatively, finding new research tools and techniques to understand the existing *meaning* of interventions, to be able to devise ways of altering the existing meaning into a preferred one, could help design radically different loneliness interventions.

## 7.6 Conclusion

This thesis demonstrated that existing models of mitigating loneliness and social isolation experienced by older adults are not sufficiently equipped to handle the projected rise in the population of older adults globally in near future. It proposed a theoretical framework called Social Innovation for Active Ageing (SIFAA) to develop innovative loneliness interventions for older adults.

By examining key literature, this thesis highlighted a gap in our current knowledge in the form of lack of radical innovation, and digital technologies in developing loneliness interventions for the ageing population. It proposed to address the gap by developing loneliness interventions founded on a hybridisation of Social Innovation and Active Ageing. A three-fold approach comprising the SLR, expert interviews, and an action research based trial was planned and executed to explore the potential strengths and weaknesses of SIFAA. By systematically reviewing loneliness interventions, followed by a successful action research based trial of an intervention conforming to SIFAA principles, this thesis reported its strengths and weaknesses in developing loneliness interventions for older adults. It also offered insights into the potential reasons for the lack of radical-digital loneliness interventions by engaging with experts in the area.

This thesis argued for a strategic shift in how we, as a society, currently perceive older adults as someone in need of help and support. It suggested that by including them in ideas where they can offer help, support, or guidance to someone else who might benefit from engaging with them, suitable replacements to the roles they may have lost in time may be conceived, making them less lonely and isolated.

This thesis considers itself a part of the overall research endeavour in this area and aims to spark ideas for further research into the future of SIFAA.

# References

- ACTIVEAGE. 2012. *The ageing marketplace: how some companies are successfully addressing the needs of the older consumer, whilst others are struggling to access this expanding market.* [Online]. Available: <http://www.activeage.org/publications> [Accessed 6 December 2016].
- ADAMS, K. B., LEIBBRANDT, S. & MOON, H. 2011. A critical review of the literature on social and leisure activity and wellbeing in later life. *Ageing and Society*, 31, 683-712.
- ADAMS, S. 2011. *The Prophet of the Coming Aging Boom* [Online]. Forbes. Available: <http://www.forbes.com/forbes/2011/1107/focus-prophet-coming-aging-boom-ken-dychtwald-age-wave-adams.html> [Accessed 16 September 2014].
- AGAH, N., AHACIC, K. & PARKER, M. G. 2006. Continuity of leisure participation from middle age to old age. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 61, S340-S346.
- AGE UK 2011. Safeguarding the Convoy. A call to action from the Campaign to End Loneliness.
- AGE UK 2012. Loneliness - the state we're in: A report of evidence compiled for the Campaign to End Loneliness. UK.
- AGE UK. 2013a. *Digital inclusion evidence review* [Online]. Available: [http://www.ageuk.org.uk/Documents/EN-GB/For-professionals/Research/Age\\_UK\\_Digital\\_Inclusion\\_Evidence\\_Review\\_2013.pdf?dtrk=true](http://www.ageuk.org.uk/Documents/EN-GB/For-professionals/Research/Age_UK_Digital_Inclusion_Evidence_Review_2013.pdf?dtrk=true) [Accessed 16 February 2015].
- AGE UK. 2013b. *Rural living - a challenge for many of England's older people* [Online]. Available: <http://ageukblog.org.uk/2013/07/22/rural-living-a-challenge-for-many-of-englands-older-people/> [Accessed 01 September 2014].
- AGE UK 2014. Later life in rural England.
- AGE UK. 2016. Later Life in the United Kingdom. Available: [http://www.ageuk.org.uk/Documents/EN-GB/Factsheets/Later\\_Life\\_UK\\_factsheet.pdf?dtrk=true](http://www.ageuk.org.uk/Documents/EN-GB/Factsheets/Later_Life_UK_factsheet.pdf?dtrk=true) [Accessed 12 February 2017].
- AGRININ, M. 2011. *How we age: A doctor's journey into the heart of growing old*, Da Capo Press.
- AGRININ, M. E. 2013. From Cicero to Cohen: developmental theories of aging, from antiquity to the present. *The Gerontologist*, gnt032.
- ALEXANDER, C., ISHIKAWA, S. & SILVERSTEIN, M. 1977. Pattern languages. *Center for Environmental Structure*, 2.

## References

---

- ANDERSON, H. & GARDNER, F. A. 1997. *Living alone*, Westminster John Knox Press.
- ANDERSSON, L. 1998. Loneliness research and interventions: a review of the literature. *Aging & Mental Health*, 2, 264-274.
- ARAGON, T. J. & GARCIA, B. A. 2017. Population Health Lean: An overview. Available: <http://escholarship.org/uc/item/825430qn> [Accessed 16 May 2017].
- ARNETT, G. 2013. *UK population: how will it change over the next few decades?* [Online]. Available: <http://www.theguardian.com/news/datablog/2013/nov/06/uk-population-increase-births-migration> [Accessed 23 August 2014].
- ARNOTT, S. 2015. *Mindings: Our story* [Online]. Available: <http://www.mindings.com/ourstory/> [Accessed 30 December 2015].
- ATCHLEY, R. C. 1980. *The social forces in later life: An introduction to social gerontology*, Wadsworth Publishing Company Belmont.
- ATCHLEY, R. C. 1989. A continuity theory of normal aging. *The gerontologist*, 29, 183-190.
- AUSLANDER, G. K. & LITWIN, H. 1987. The parameters of network intervention: A social work application. *The Social Service Review*, 305-318.
- AUSTAD, S. N. 1997. *Why we age: what science is discovering about the body's journey through life*, J. Wiley & Sons.
- BAEKER, R. M., GRUDIN, J., BUXTON, W. & GREENBERG, S. 1995. Readings in human-computer interaction: Toward the year 2000. *Morgan Kaufmann Publishers Inc., USA*.
- BANCROFT, J., SKRIMSHIRE, A. & SIMKIN, S. 1976. The reasons people give for taking overdoses. *The British Journal of Psychiatry*, 128, 538-548.
- BAPIR, M. A. 2010. Is it possible for qualitative research to be properly valid and reliable. Available: [https://www.academia.edu/997438/Validity and Reliability in Qualitative Research](https://www.academia.edu/997438/Validity_and_Reliability_in_Qualitative_Research) [Accessed 21 August 2016].
- BARDHI, F. & ECKHARDT, G. M. 2012. Access-based consumption: the case of car sharing. *Journal of Consumer Research*, 39, 881-898.
- BARFORD, V. 2013. *Is modern life making us lonely?* [Online]. Available: <http://www.bbc.co.uk/news/magazine-22012957> [Accessed 11 November 2014].
- BARKHAM, P. 2012. *How joggers can help the household* [Online]. The Guardian. Available: <http://www.theguardian.com/lifeandstyle/2012/mar/04/good-gym-exercise-community-work> [Accessed 21 January 2014].
- BASKERVILLE, R. L. & WOOD-HARPER, A. T. 1996. A critical perspective on action research as a method for information systems research. *Journal of Information Technology*, 11, 235-246.

## References

---

- BATES, T. 2016. *Why digital technology is not necessarily the answer to your problem* [Online]. Available: <http://www.tonybates.ca/2016/01/30/why-digital-technology-is-not-necessarily-the-answer-to-your-problem/> [Accessed 08 March 2016].
- BAXTER-REYNOLDS, M. 2014. *Everyone is 'going digital' but just what does that mean?* [Online]. Available: <http://www.zdnet.com/article/everyone-is-going-digital-but-just-what-does-that-mean/> [Accessed 25 October 2015].
- BBC NEWS. 2014. *Loneliness: Beating the curse of old age* [Online]. Available: <http://www.bbc.co.uk/news/health-27208532> [Accessed 25 September 2014].
- BEAUMONT, J. 2013. *Measuring National Well-being - Older people and loneliness*. Office for National Statistics, UK.
- BELK, R. 2014. You are what you can access: Sharing and collaborative consumption online. *Journal of Business Research*, 67, 1595-1600.
- BENGSTON, V. L. & PUTNEY, N. 2009. *Handbook of theories on aging*, Springer Publishing Company.
- BENNETT, J. W. 1996. Applied and action anthropology: Ideological and conceptual aspects. *Current anthropology*, 37, S23-S53.
- BERG, B. L. & LUNE, H. 2004. *Qualitative research methods for the social sciences*, Pearson Boston.
- BERNARD, S. & PERRY, H. 2013. Loneliness and Social Isolation Among Older People in North Yorkshire. *Social Policy Research Unit, University of York: York. Loneliness Survey Team A*, 3.
- BERNSTEIN, E. 2013. *When Being Alone Turns Into Loneliness, There Are Ways to Fight Back* [Online]. The Wall Street Journal. Available: <http://online.wsj.com/news/articles/SB10001424052702303936904579177700699367092> [Accessed 29 September 2014].
- BESSANT, J., ÖBERG, C. & TRIFILOVA, A. 2014. Framing problems in radical innovation. *Industrial Marketing Management*, 43, 1284-1292.
- BEST, C. 2013. *Living Alone Doesn't Mean You're Lonely* [Online]. Available: [http://www.huffingtonpost.co.uk/chloe-best/living-alone-doesnt-mean-lonely\\_b\\_2906260.html](http://www.huffingtonpost.co.uk/chloe-best/living-alone-doesnt-mean-lonely_b_2906260.html) [Accessed 28 September 2014].
- BINGHAM, J. 2012. *Record numbers reach retirement age as baby boomers turn 65* [Online]. Telegraph. Available: <http://www.telegraph.co.uk/finance/personalfinance/pensions/9563647/Record-numbers-reach-retirement-age-as-baby-boomers-turn-65.html> [Accessed 15 September 2014].
- BOOTH, A., PAPAIOANNOU, D. & SUTTON, A. 2012. Systematic approaches to a successful literature review. Available: [https://www.researchgate.net/profile/Andrew\\_Booth/publication/235930](https://www.researchgate.net/profile/Andrew_Booth/publication/235930)



## References

---

- [866 Systematic Approaches to a Successful Literature Review/links/55f89fae08aec948c4837066/Systematic-Approaches-to-a-Successful-Literature-Review.pdf](#) [Accessed 31 May 2017].
- BOTSMAN, R. & ROGERS, R. 2010. What's mine is yours. *The Rise of Collaborative Consumption*, Collins.
- BOUNDLESS WEBSITE. 2014. *Disengagement Theory* [Online]. Available: <https://www.boundless.com/sociology/textbooks/boundless-sociology-textbook/aging-18/the-functionalist-perspective-128/disengagement-theory-721-9147/> [Accessed 22 September 2014].
- BOWEN, R. L. & ATWOOD, C. S. 2004. Living and dying for sex. *Gerontology*, 50, 265-290.
- BOWLBY, J. 1973. *Attachment and loss: Vol. 2: Separation*, Hogarth Press and the Institute of Psycho-Analysis.
- BOWMAN, C. C. 1955. Loneliness and social change. *American Journal of Psychiatry*, 112, 194-198.
- BROWN, T. 2008. *Design Thinking* [Online]. Harvard Business Review. Available: <https://hbr.org/2008/06/design-thinking> [Accessed 14 July 2015].
- BROWN, T. 2009. Change by design.
- BROWN, T. 2018. *Design Thinking* [Online]. IDEO U: IDEO. Available: <https://www.ideo.com/pages/design-thinking> [Accessed 10 February 2018].
- BROWN, T. & KATZ, B. 2011. Change by Design. Available: <http://onlinelibrary.wiley.com.ezproxy.lancs.ac.uk/doi/10.1111/j.1540-5885.2011.00806.x/epdf> [Accessed 09 May 2017].
- BROWN, T. & ROGER, M. L. 2015. Design for Action. *Harvard Business Review: Change Management* [Online]. Available: <https://hbr.org/2015/09/design-for-action> [Accessed 22 July 2017].
- BRYDON-MILLER, M., GREENWOOD, D. & MAGUIRE, P. 2003. Why action research? *Action research*, 1, 9-28.
- BURELL, G. & MORGAN, G. 1979. Sociological paradigms and organisational analysis. *Elements of the Sociology of Corporate Life*.
- BURHOLT, V. & SCHARF, T. 2014. Poor health and loneliness in later life: the role of depressive symptoms, social resources, and rural environments. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 69, 311-324.
- BURN-CALLANDER, R. 2013. *Bye Bye, Baby Boomers. Hello, Workplace Chaos* [Online]. Available: <http://www.managementtoday.co.uk/news/1181643/bye-bye-baby-boomers-hello-workplace-chaos/> [Accessed 15 September 2014].
- BURNS, R. B. 1990. *Introduction to research methods in education*, Longman Cheshire.

## References

---

- BUTLER, P. 2013. *Jeremy Hunt: UK should adopt Asian culture of caring for the elderly* [Online]. The Guardian. Available: <http://www.theguardian.com/politics/2013/oct/18/jeremy-hunt-uk-families-asia-elderly> [Accessed 25 September 2014].
- BUTLER, S. 2012. *Homeshare: Meet the unlikely housemates* [Online]. The Guardian. Available: <http://www.theguardian.com/lifeandstyle/2012/mar/16/homeshare-unlikely-housemates> [Accessed 24 March 2016].
- CACIOPPO, J. T., HAWKLEY, L. C. & THISTED, R. A. 2010. Perceived social isolation makes me sad: 5-year cross-lagged analyses of loneliness and depressive symptomatology in the Chicago Health, Aging, and Social Relations Study. *Psychology and aging*, 25, 453.
- CACIOPPO, J. T., HUGHES, M. E., WAITE, L. J., HAWKLEY, L. C. & THISTED, R. A. 2006. Loneliness as a specific risk factor for depressive symptoms: cross-sectional and longitudinal analyses. *Psychology and aging*, 21, 140.
- CACIOPPO, J. T. & PATRICK, W. 2008. *Loneliness: Human nature and the need for social connection*, WW Norton & Company.
- CAMPAIGN TO END LONELINESS 2014a. *Alone in the Crowd: Loneliness and diversity*.
- CAMPAIGN TO END LONELINESS 2014b. *Measuring Your Impact on Loneliness in Later Life*. London.
- CAMPAIGN TO END LONELINESS. 2016. *The Campaign to End Loneliness Learning Network* [Online]. Available: <http://www.campaigntoendloneliness.org/campaigns/learning-network/> [Accessed 5 October 2016].
- CAMPAIGN TO END LONELINESS WEBSITE. 2013. *Castle Point Association of Voluntary Services Befriending Scheme* [Online]. Available: <http://campaigntoendloneliness.org/toolkit/casestudy/cavs/> [Accessed 16 September 2014].
- CAMPAIGN TO END LONELINESS WEBSITE. 2014. *All Examples* [Online]. Available: <http://campaigntoendloneliness.org/toolkit/casestudy/> [Accessed 24 August 2014].
- CARPENTER, H. 2009. *The Four Quadrants of Innovation: Disruptive vs Incremental* [Online]. Available: <http://bhc3.com/2009/12/01/the-four-quadrants-of-innovation-disruptive-vs-incremental/> [Accessed 28 August 2014].
- CASCIANI, D. 2003. *Fear of crime 'trapping elderly'* [Online]. BBC. Available: <http://news.bbc.co.uk/1/hi/uk/3044625.stm> [Accessed 29 September 2014].

## References

---

- CATTAN, M., NEWELL, C., BOND, J. & WHITE, M. 2003. Alleviating social isolation and loneliness among older people. *International Journal of Mental Health Promotion*, 5, 20-30.
- CATTAN, M., WHITE, M., BOND, J. & LEARMOUTH, A. 2005. Preventing social isolation and loneliness among older people: a systematic review of health promotion interventions. *Ageing and society*, 25, 41-67.
- CHAKRABARTI, A. & KHADILKAR, P. A measure for assessing product novelty. DS 31: Proceedings of ICED 03, the 14th International Conference on Engineering Design, Stockholm, 2003.
- CHURTON, M. & BROWN, A. 2009. *Theory and method*, Palgrave Macmillan.
- CIPOLLA, C., JOLY, M. P., WATANABE, B. & ZANELA, F. Service Design for Social Innovation: the Promotion of Active Aging in Rio De Janeiro. Service Design Geographies. Proceedings of the ServDes2016 Conference, 2016. Linköping University Electronic Press, 365-375.
- CLUNE, S. 2009. *Developing sustainable literacy in industrial design education*. University of Western Sydney.
- COGHLAN, D. & BRANNICK, T. 2014. *Doing action research in your own organization*, Sage.
- COGHLAN, D. & BRYDON-MILLER, M. 2014. *The SAGE encyclopedia of action research*, Sage.
- COHEN, L., MANION, L. & MORRISON, K. 2013. *Research methods in education*, Routledge.
- COMMISSION FOR RURAL COMMUNITIES. 2012. *Social isolation experienced by older people in rural communities* [Online]. Available: <http://www.agenda-efa.org.uk/site/wp-content/uploads/2012/09/Executive-Summary-Social-isolation-experienced-by-older-people-in-rural-communities.pdf> [Accessed 16 February 2015].
- CONN, V. S., VALENTINE, J. C., COOPER, H. M. & RANTZ, M. J. 2003. Grey literature in meta-analyses. *Nursing research*, 52, 256-261.
- CONNORS, C., MARITA, K., BLOCH, A., BAMFORD, S.-M. & KNEALE, D. 2013. 2013 Rural Ageing Research Summary Report of Findings. London, UK: Department for Environment Food & Rural Affairs.
- CORNWELL, E. Y. & WAITE, L. J. 2009. Measuring social isolation among older adults using multiple indicators from the NSHAP study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 64, i38-i46.
- CROCKER, J. & MAJOR, B. 1989. Social stigma and self-esteem: The self-protective properties of stigma. *Psychological review*, 96, 608.

## References

---

- CROSSAN, M. M. & APAYDIN, M. 2010. A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of management studies*, 47, 1154-1191.
- CUMMING, E. & HENRY, W. E. 1961. *Crowing old*. New York.
- DAM, R. F. & YU, S. T. 2017. *5 Stages in the Design Thinking Process* [Online]. Interaction Design Foundation. Available: <https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process> [Accessed 17 May 2017].
- DANNEFER, D. 2011. Age, the life course and the sociological imagination: prospects for theory. In: BINSTOCK, R. H. & GEORGE, L. K. (eds.) *Handbook of aging and the social sciences*.
- DAOUST, P. 2010. *The joys of solitude* [Online]. The Guardian. Available: <http://www.theguardian.com/lifeandstyle/2010/feb/02/joys-of-solitude-lonely> [Accessed 2 September 2013].
- DE JONG GIERVELD, J. 1998. A review of loneliness: concept and definitions, determinants and consequences. *Reviews in Clinical Gerontology*, 8, 73-80.
- DE JONG GIERVELD, J. & VAN TILBURG, T. 2006. A 6-item scale for overall, emotional, and social loneliness confirmatory tests on survey data. *Research on Aging*, 28, 582-598.
- DE JONG-GIERVELD, J. & KAMPHULS, F. 1985. The development of a Rasch-type loneliness scale. *Applied Psychological Measurement*, 9, 289-299.
- DE JONG-GIERVELD, J. & RAADSCHELDERS, J. 1982. Types of loneliness. *Loneliness: A sourcebook of current theory, research and therapy*, 105-119.
- DE WAAL, F. B. M. 2006. *Our Inner Ape: The Best and Worst of Human Nature*, Granta.
- DEAN, A. & LIN, N. 1977. The stress-buffering role of social support: Problems and prospects for systematic investigation. *The Journal of Nervous and Mental Disease*, 165, 403-417.
- DEMAKAKOS, P., NUNN, S. & NAZROO, J. 2006. 10. Loneliness, relative deprivation and life satisfaction. *Retirement, health and relationships of the older population in England*, 297.
- DENRELL, J., FANG, C. & LEVINTHAL, D. A. 2004. From T-mazes to labyrinths: Learning from model-based feedback. *Management Science*, 50, 1366-1378.
- DENZIN, N. K. & LINCOLN, Y. S. 2011. *The SAGE handbook of qualitative research*, Sage.
- DERLEGA, V. J. & MARGULIS, S. T. 1982. Why loneliness occurs: The interrelationship of social-psychological and privacy concepts. *Loneliness: A sourcebook of current theory, research and therapy*, 152-165.
- DEWITT, T. J. & SCHEINER, S. M. 2004. *Phenotypic plasticity: functional and conceptual approaches*, Oxford University Press.

## References

---

- DIGGS, J. 2007. Activity Theory of Aging. In: LOUE, S. & SAJATOVIC, M. (eds.) *Encyclopedia of aging and public health*. Springer.
- DIXON-WOODS, M., BONAS, S., BOOTH, A., JONES, D. R., MILLER, T., SUTTON, A. J., SHAW, R. L., SMITH, J. A. & YOUNG, B. 2006. How can systematic reviews incorporate qualitative research? A critical perspective. *Qualitative research*, 6, 27-44.
- DOMAN, L. & LE ROUX, A. 2010. The causes of loneliness and the factors that contribute towards it: a literature review. *Tydskrif Vir Geesteswetenskappe*, 50, 216-228.
- DRYZEK, J. S. 2005. *The politics of the earth: Environmental discourses*, Oxford University Press.
- DUNNE, A. & RABY, F. 2010. Between reality and the impossible.
- DUNNE, D. D. & DOUGHERTY, D. 2015. Abductive Reasoning: How Innovators Navigate in the Labyrinth of Complex Product Innovation. *Organization Studies*, 0170840615604501.
- DYCHTOWALD, K. & FLOWER, J. 1989. *Age wave: The challenges and opportunities of an aging America*, Bantam Books.
- DYKSTRA, P. A. 2009. Older adult loneliness: myths and realities. *European journal of ageing*, 6, 91-100.
- DYKSTRA, P. A. & DE JONG GIERVELD, J. 2004. Gender and marital-history differences in emotional and social loneliness among Dutch older adults. *Canadian Journal on Aging/La revue canadienne du vieillissement*, 23, 141-155.
- DYKSTRA, P. A., VAN TILBURG, T. G. & DE JONG GIERVELD, J. 2005. Changes in Older Adult Loneliness Results From a Seven-Year Longitudinal Study. *Research on aging*, 27, 725-747.
- EDDY, P. D. 1961. *Loneliness: A discrepancy within the phenomenological self*.
- EDDY, W. B., PAAP, S. M. & GLAD, D. 1970. Solving problems in living: The citizen's viewpoint. *Mental Hygiene*, 54, 64-72.
- EDWARDS, C. C. 2016. *The SAGE Encyclopedia of Marriage, Family, and Couples Counseling*, SAGE Publications.
- EKWALL, A. K., SIVBERG, B. & HALLBERG, I. R. 2005. Loneliness as a predictor of quality of life among older caregivers. *Journal of advanced nursing*, 49, 23-32.
- ELLIOTT, R. & TIMULAK, L. 2005. Descriptive and interpretive approaches to qualitative research. *A handbook of research methods for clinical and health psychology*, 1, 147-159.
- ENGLISH, S. Design thinking–Value innovation–Deductive reason and the designers choice. Design Research Society Conference, Lisbon, 2006. 1-4.
- ERIKSON, E. 1950. Childhood and society. *New York: Northern*.

## References

---

- ERIKSON, E. & ERIKSON, J. 1982. *The Life Cycle Completed*. New York, New York: Norton.
- ERIKSON, E. H. & ERIKSON, J. M. 1997. *The life cycle completed (extended version)*, WW Norton & Company.
- EUROPEAN COMMISSION. 2014. *Policy* [Online]. Available: [http://ec.europa.eu/health/ageing/policy/index\\_en.htm](http://ec.europa.eu/health/ageing/policy/index_en.htm) [Accessed 14 September 2014].
- FEES, B. S., MARTIN, P. & POON, L. W. 1999. A model of loneliness in older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 54, P231-P239.
- FERREIRA-ALVES, J., MAGALHÃES, P., VIOLA, L. & SIMOES, R. 2014. Loneliness in middle and old age: Demographics, perceived health, and social satisfaction as predictors. *Archives of gerontology and geriatrics*, 59, 613-623.
- FINLAY, L. 2002. "Outing" the researcher: The provenance, process, and practice of reflexivity. *Qualitative health research*, 12, 531-545.
- FLANDERS, J. 1976. From loneliness to intimacy. *Practical Psychology*, 16, 241-244.
- FLANDERS, J. P. 1982. A general systems approach to loneliness. *Loneliness: A sourcebook of current theory, research and therapy*, 166-182.
- FREY, T. 2012. *Replacing Our Physical Infrastructure with Digital Infrastructure* [Online]. Available: <http://www.futuristspeaker.com/2012/11/replacing-our-physical-infrastructure-with-digital-infrastructure/> [Accessed 16 February 2015].
- FRIDERES, J. S. 1992. Participatory research: an illusionary perspective. *A world of communities: Participatory research perspectives*, 7-13.
- FROMM-REICHMANN, F. 1959. Loneliness. *Psychiatry*, 22, 1-15.
- GEORGE, J. L. 1984. A Comparison of Chronic and Transient Loneliness on the Variables of Anxiety, Depression and Self-Esteem.
- GIDDENS, A. 1994. *Beyond left and right: The future of radical politics*, Stanford University Press.
- GODIN, B. 2008. Innovation: the History of a Category. *Project on the Intellectual History of Innovation Working Paper*, 1.
- GORMAN, M. 1999. Development and the rights of older people.
- GRIFFIN, J. 2010. *The lonely society?*, Mental Health Foundation.
- GRUNDY, E. 2006. Population Ageing: Causes and Consequences. *Interdisciplinary Communications*, 87.
- HAGE, J. 2011. *Restoring the innovative Edge: Driving the evolution of science and technology*, Stanford University Press.

## References

---

- HAIR, J. F., WOLFINBARGER, M. F., ORTINAU, D. J. & BUSH, R. P. 2008. *Essentials of marketing research*, McGraw-Hill/Higher Education.
- HALMOS, P. 1998. *Solitude and privacy: a study of social isolation its causes and therapy*, Psychology Press.
- HAN, D. & BRAUN, K. L. 2010. Promoting Active Ageing through Technology Training in Korea. *Intelligent Technologies for Bridging the Grey Digital Divide*, 141.
- HARWOOD, J. 2007. *Perspectives on Aging* [Online]. Available: [http://www.sagepub.com/upm-data/15090\\_Chapter1.pdf](http://www.sagepub.com/upm-data/15090_Chapter1.pdf) [Accessed 22 September 2014].
- HASSAN, Q. 2011. Demystifying cloud computing. *The Journal of Defense Software Engineering*, 1, 16-21.
- HAVENS, B. J. 1968. An investigation of activity patterns and adjustment in an aging population. *The gerontologist*, 8, 201-206.
- HAVIGHURST, R. J. 1948. *Developmental tasks and education*.
- HAVIGHURST, R. J. 1961. Successful aging. *The Gerontologist*.
- HAVINGHURST, R. 1978. Ageing in western society. *The Social Challenge of Ageing*. London: Croom Helm, 15-44.
- HAWKLEY, L. C. & CACIOPPO, J. T. 2009. Encyclopedia of human relationships. In: REIS, H. T. & SPRECHER, S. (eds.). Sage Publications.
- HAWKLEY, L. C., MASI, C. M., BERRY, J. D. & CACIOPPO, J. T. 2006. Loneliness is a unique predictor of age-related differences in systolic blood pressure. *Psychology and aging*, 21, 152.
- HAWKLEY, L. C., THISTED, R. A., MASI, C. M. & CACIOPPO, J. T. 2010. Loneliness predicts increased blood pressure: 5-year cross-lagged analyses in middle-aged and older adults. *Psychology and aging*, 25, 132.
- HERMANS, F., STUIVER, M., BEERS, P. & KOK, K. 2013. The distribution of roles and functions for upscaling and outscaling innovations in agricultural innovation systems. *Agricultural Systems*, 115, 117-128.
- HUANG, H. B. 2010. What is good action research. *Action Research*, 8, 93-109.
- HUBER, J. & SKIDMORE, P. 2003. *The new old: Why baby boomers won't be pensioned off*, Demos.
- HUGHES, J., KING, V., RODDEN, T. & ANDERSEN, H. Moving out from the control room: ethnography in system design. Proceedings of the 1994 ACM conference on Computer supported cooperative work, 1994. ACM, 429-439.
- HUGHES, M. E., WAITE, L. J., HAWKLEY, L. C. & CACIOPPO, J. T. 2004. A Short Scale for Measuring Loneliness in Large Surveys Results From Two Population-Based Studies. *Research on Aging*, 26, 655-672.



## References

---

- HUNT, A. 1978. *The Elderly at Home-a Study of People Aged 65 and Over Living in the Community in England 1976*, HM Stationery Office.
- INDEPENDENT AGE. 2010. *Older People, Technology and Community: The Potential of Technology to Help Older People Renew or Develop Social Contacts and to Actively Engage in Their Communities* [Online]. Available: <http://www.cisco.com/web/about/ac79/docs/wp/ps/Report.pdf> [Accessed 16 February 2015].
- JOHANSEN, R. 1988. *Groupware: Computer support for business teams*, The Free Press.
- JONES, D. A., VICTOR, C. R. & VETTER, N. J. 1985. The problem of loneliness in the elderly in the community: characteristics of those who are lonely and the factors related to loneliness. *The Journal of the Royal College of General Practitioners*, 35, 136-139.
- KAASA, K. 1998. Loneliness in old age: Psychosocial and health predictors. *Norsk epidemiologi*, 8.
- KAGAN, C., BURTON, M. & SIDDIQUEE, A. 2007. Action Research. In: WILLIG, C. & STANTON-ROGERS, W. (eds.) *The SAGE handbook of qualitative research in psychology*. Sage.
- KALACHE, A. 2012. *The longevity revolution: Creating a society for all ages* [Online]. Available: [https://www.flinders.edu.au/sabs/fcas-files/Publications/The Longevity Revolution.pdf](https://www.flinders.edu.au/sabs/fcas-files/Publications/The%20Longevity%20Revolution.pdf) [Accessed 5 January 2017].
- KELEMEN, M. L. & RUMENS, N. 2008. *An introduction to critical management research*, Sage.
- KILLEEN, C. 1998. Loneliness: an epidemic in modern society. *Journal of Advanced Nursing*, 28, 762-770.
- KLEINHUBBERT, G. & WINDMANN, A. 2013. *Alone by the Millions: Isolation Crisis Threatens German Seniors* [Online]. Spiegel Online International. Available: <http://www.spiegel.de/international/germany/germany-faces-epidemic-of-lonely-and-isolated-seniors-a-876635.html> [Accessed 15 September 2014].
- KOCK, N. 2004. The three threats of action research: a discussion of methodological antidotes in the context of an information systems study. *Decision support systems*, 37, 265-286.
- KRAFT, P. & YARDLEY, L. 2009. Current issues and new directions in Psychology and Health: What is the future of digital interventions for health behaviour change?
- KRIPPENDORFF, K. 2004. *Content analysis: An introduction to its methodology*, Sage.
- KUYPER, L. & FOKKEMA, T. 2010. Loneliness among older lesbian, gay, and bisexual adults: The role of minority stress. *Archives of sexual behavior*, 39, 1171-1180.
- LANDIS, J. R. & KOCH, G. G. 1977. The measurement of observer agreement for categorical data. *biometrics*, 159-174.



## References

---

- LANGRISH, J., GIBBONS, M., EVANS, W. G. & JEVONS, F. R. 1972. *Wealth from knowledge: Studies of innovation in industry*, Springer.
- LARSON, R., ZUZANEK, J. & MANNELL, R. 1985. Being alone versus being with people: Disengagement in the daily experience of older adults. *Journal of Gerontology*, 40, 375-381.
- LAU, S. & GRUEN, G. E. 1992. The social stigma of loneliness: Effect of target person's and perceiver's sex. *Personality and Social Psychology Bulletin*, 18, 182-189.
- LAW, J. 2004. *After method: Mess in social science research*, Routledge.
- LAW, J. 2007. *Making a mess with method*, Sage.
- LEIFER, R., MCDERMOTT, C. M., O'CONNOR, G. C., PETERS, L. S., RICE, M. & VERYZER, R. W. 2000. *Radical innovation: How mature companies can outsmart upstarts*, Harvard Business School Press.
- LEIKAS, J., SAARILUOMA, P., ROUSI, R., KUISMA, E. & VILPPONEN, H. 2012. Life-based design to combat loneliness among older people. *The Journal of Community Informatics*, 8.
- LEMON, B. W., BENGTON, V. L. & PETERSON, J. A. 1972. An exploration of the activity theory of aging: Activity types and life satisfaction among in-movers to a retirement community. *Journal of gerontology*, 27, 511-523.
- LEWIN, K. 1946. Action research and minority problems. *Journal of social issues*, 2, 34-46.
- LINTON, R. 1936. *The study of man: an introduction*.
- LIPSCOMB, M. 2012. Abductive reasoning and qualitative research. *Nursing Philosophy*, 13, 244-256.
- LOCAL GOVERNMENT ASSOCIATION. 2012. *Combating Loneliness - A guide for local authorities* [Online]. Available: <http://campaigntoendloneliness.org/wp-content/uploads/downloads/2012/03/A-guide-for-local-authorities-combating-loneliness.pdf> [Accessed 29 September 2014].
- LONG, K., BAKEWELL, L. L., MCNANEY, R. C., VASILEIOU, K., ATKINSON, M., BARRETO, M., BARNETT, J., WILSON, M., LAWSON, S. & VINES, J. Connecting Those That Care: Designing for Transitioning, Talking, Belonging and Escaping. Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems, 2017. ACM, 1339-1351.
- LOOS, E. Designing meaningful intergenerational digital games. International Conference on Communication, Media, Technology and Design, 2014. 46-51.
- LOPATA, H. Z. 1969. Loneliness: Forms and components. *Social Problems*, 17, 248-262.
- LUKACS, J. 2003. *At the End of an Age*, Yale University Press.

## References

---

- LUO, Y., HAWKLEY, L. C., WAITE, L. J. & CACIOPPO, J. T. 2012. Loneliness, health, and mortality in old age: A national longitudinal study. *Social science & medicine*, 74, 907-914.
- LYNCH, J. J. 1977. *The broken heart: The medical consequences of loneliness*, Basic Books New York.
- MACKLER, L. 2009. *Solemate*, Hay House, Inc.
- MAHOOD, Q., VAN EERD, D. & IRVIN, E. 2014. Searching for grey literature for systematic reviews: challenges and benefits. *Research synthesis methods*, 5, 221-234.
- MANZINI, E. 2014. Making things happen: Social Innovation and Design. *Design Issues*, 30, 57-66.
- MANZINI, E. 2015. *Design, when everybody designs: An introduction to design for social innovation*, Cambridge, MA: The MIT Press.
- MANZINI, E. & DESIS NETWORK 2014. Making things happen. *DesignIssues*, 30, 57-66.
- MARANGONI, C. & ICKES, W. 1989. Loneliness: A theoretical review with implications for measurement. *Journal of Social and Personal Relationships*, 6, 93-128.
- MARCUS, G. & DAVIS, E. 2014. *Eight (No, Nine!) Problems with Big Data* [Online]. The New York Times. Available: <https://www.nytimes.com/2014/04/07/opinion/eight-no-nine-problems-with-big-data.html? r=0> [Accessed 20 May 2017].
- MARSH, S. 2014a. *Fourteen ways councils can help combat loneliness* [Online]. The Guardian. Available: <http://www.theguardian.com/local-government-network/2014/apr/14/fourteen-ways-councils-can-help-combat-loneliness> [Accessed 14 September 2014].
- MARSH, S. 2014b. *Good Gym: running with a mission* [Online]. The Guardian. Available: <http://www.theguardian.com/lifeandstyle/the-running-blog/2014/jan/03/good-gym-running-mission-community> [Accessed 3 January 2014].
- MARSHALL, P. 2013. *More than half of elderly over 75 now live alone* [Online]. ITV News. Available: <http://www.itv.com/news/2013-03-07/more-than-half-of-elderly-over-75-now-live-alone/> [Accessed 29 September 2014].
- MARTIN, D. 2015. *Families urged to hire 'nannies for grannies' so the State doesn't have to look after the elderly* [Online]. Available: <http://www.dailymail.co.uk/news/article-3267238/Families-urged-hire-nannies-grannies-State-doesn-t-look-elderly.html> [Accessed 29 October 2015].
- MARTIN, L. G. 2011. Age, the life course and the sociological imagination: prospects for theory. In: BINSTOCK, R. H. & GEORGE, L. K. (eds.) *Handbook of aging and the social sciences*.

## References

---

- MARWICK, A. 1998. The sixties. *Cultural Revolution in Britain, France, Italy, and the United States, c.*
- MASI, C. M., CHEN, H.-Y., HAWKLEY, L. C. & CACIOPPO, J. T. 2011. A meta-analysis of interventions to reduce loneliness. *Personality and Social Psychology Review*, 15, 219-266.
- MASLOW, A. H. 1966. *The psychology of science: A reconnaissance*, Maurice Bassett.
- MATHUR, A. & MOSCHIS, G. P. 2005. Antecedents of cognitive age: a replication and extension. *Psychology & Marketing*, 22, 969-994.
- MCCLELLAND, K. A. 1982. Self-conception and life satisfaction: Integrating aged subculture and activity theory. *Journal of Gerontology*, 37, 723-732.
- MCDONALD, M. 2013. *Defining digital, technology's current tower of Babel* [Online]. Accenture. Available: <https://www.accenture.com/us-en/blogs/blogs-defining-digital-technologys-tower-babel> [Accessed 25 October 2015].
- MCKINSEY & COMPANY 2010. From Austerity to Prosperity: seven priorities for the long term. London, UK: McKinsey Global Institute.
- MCNIFF, J., LOMAX, P. & WHITEHEAD, J. 2003. *You and your action research project*, London, Routledge.
- MEAD, N., LESTER, H., CHEW-GRAHAM, C., GASK, L. & BOWER, P. 2010. Effects of befriending on depressive symptoms and distress: systematic review and meta-analysis. *The British Journal of Psychiatry*, 196, 96-101.
- MEHTA, S. 2015. Unit 18: Participatory Method. *Course: MEC-109 Research Methods in economics. M.A. Economics (part II)*. Chandigarh, India: Panjab University, Chandigarh.
- MEISEL, M. 2014. *Realizations: Narrative, Pictorial, and Theatrical Arts in Nineteenth-Century England*, Princeton University Press.
- MELL, P. & GRANCE, T. 2011. The NIST definition of cloud computing.
- MENTAL HEALTH FOUNDATION 2013. Getting On... with life: Baby boomers, mental health and ageing well. Mental Health Foundation, UK.
- MILES, M. B., HUBERMAN, A. M. & SALDANA, J. 2013. *Qualitative data analysis: A methods sourcebook*, SAGE Publications, Incorporated.
- MILLIGAN, C. & PASSEY, D. 2011. *Ageing and the use of the internet: Current engagement and future trends* [Online]. Nominet Trust. Available: [http://www.nominettrust.org.uk/sites/default/files/NT\\_SoA\\_-\\_Ageing\\_and\\_the\\_use\\_of\\_the\\_internet\\_0.pdf](http://www.nominettrust.org.uk/sites/default/files/NT_SoA_-_Ageing_and_the_use_of_the_internet_0.pdf) [Accessed 16 February 2015 2015].
- MOORE, J. A. 1976. Loneliness: Self-discrepancy and sociological variables. *Canadian Counsellor*, 10, 133-135.
- MOSCHIS, G. P. 1992. *Marketing to older consumers: A handbook of information for strategy development*, Greenwood Publishing Group.

## References

---

- MOUSTAKAS, C. E. 1961. *Loneliness*, Prentice Hall.
- MOUSTAKAS, C. E. 1972. *Loneliness and love*, Prentice Hall.
- MULGAN, G., TUCKER, S., ALI, R. & SANDERS, B. 2007. Social innovation: what it is, why it matters and how it can be accelerated.
- MUNRO, N. 1914. *The New Road*, Edinburgh and London, UK, William Blackwood and Sons Ltd.
- MURPHY, F. 2006. Loneliness: a challenge for nurses caring for older people. *Nursing older people*, 18, 22-25.
- MURPHY, S. & SHEVLIN, M. 2012. *Loneliness in Northern Ireland Adolescents* [Online]. Northern Ireland: Economic and Social Research Council. Available: <http://www.ark.ac.uk/publications/updates/update81.pdf> [Accessed 29 September 2014].
- MURRAY, K. 2013. *Cocktail parties in care homes help tackle loneliness* [Online]. The Guardian. Available: <http://www.theguardian.com/society/2013/mar/28/cocktail-parties-care-homes-loneliness> [Accessed 29 September 2014].
- NEUMAN, L. W. 2002. Social research methods: Qualitative and quantitative approaches.
- NIETZSCHE, F. 1968. *The Will to Power*, trans. Walter Kaufmann and RJ Hollingdale. New York, NY: Vintage.
- NORMAN, D. A. & VERGANTI, R. 2012. Incremental and Radical Innovation: Design Research vs. Technology and Meaning Change. *Design Issues*, 30, 78-96.
- NUDD, T. 2014. *Perfect Match: Brazilian Kids Learn English by Video Chatting With Lonely Elderly Americans*. FCB's touching work for a language school [Online]. Available: <http://www.adweek.com/adfreak/perfect-match-brazilian-kids-learn-english-video-chatting-lonely-elderly-americans-157523> [Accessed 15 September 2014].
- O'CONNOR, J. 2014. *Age-related loneliness is a ticking time bomb waiting to explode* [Online]. Available: [http://insidetime.co.uk/articleview.asp?a=1773&c=agerelated loneliness is a ticking time bomb waiting to explode](http://insidetime.co.uk/articleview.asp?a=1773&c=agerelated%20loneliness%20is%20a%20ticking%20time%20bomb%20waiting%20to%20explode) [Accessed 25 September 2014].
- O'REILLY, P. 2008. *Use of Internet Banking by the Elderly - time to rise to the challenge* [Online]. Financial Services Innovation Centre. Available: [https://www.researchgate.net/researcher/2014977975 Paidi OReilly](https://www.researchgate.net/researcher/2014977975_Paidi_OReilly) [Accessed 16 February 2015].
- OFFICE FOR NATIONAL STATISTICS 2012. Population Ageing in the United Kingdom, its Constituent Countries and the European Union.

## References

---

- OFFICE FOR NATIONAL STATISTICS 2013. Recorded crime data at Community Safety Partnership / Local Authority level from 2002/03' – Supplementary Excel tables to 'Crime Statistics, period ending March 2013.
- OFFICE FOR NATIONAL STATISTICS 2014. 2011 Census Analysis: Do the Demographic and Socio-Economic Characteristics of those Living Alone in England and Wales Differ from the General Population. Office for National Statistics.
- OLIVEIRA, L. C. 2013. *Designing and evaluating a behaviour change intervention that introduces modification of time perceptions as a solution to promote sustainable behaviours*. © Luis Carlos Rubino de Oliveira.
- ORTMAN, J. M., VELKOFF, V. A. & HOGAN, H. 2014. An Aging Nation: The Older Population in the United States. *Population Estimates and Projections*. Current Population Reports.
- PEPLAU, L. A. 1982. *Loneliness: A sourcebook of current theory, research, and therapy*, John Wiley & Sons Inc.
- PERÄKYLÄ, A. 2004. Reliability and Validity in Research based on Neutrality Occurring Social Interaction. *Qualitative Research: Theory, Method and Practice*. London: Sage.
- PERLMAN, D. & PEPLAU, L. A. 1981. Toward a social psychology of loneliness. *Personal relationships*, 3, 31-56.
- PERLMAN, D. & PEPLAU, L. A. 1982. *Loneliness: A sourcebook of current theory, research, and therapy*, John Wiley & Sons Inc.
- PERLMAN, D. & PEPLAU, L. A. 1998. Loneliness. Available: [http://www.peplaulab.ucla.edu/Peplau\\_Lab/Publications\\_files/Perlman%26 Peplau 98.pdf](http://www.peplaulab.ucla.edu/Peplau_Lab/Publications_files/Perlman%26%20Peplau%2098.pdf) [Accessed 24 September].
- PHILLIPS, E. & PUGH, D. 2010. *How to get a PhD: A handbook for students and their supervisors*, McGraw-Hill Education (UK).
- PINQUART, M. 2003. Loneliness in married, widowed, divorced, and never-married older adults. *Journal of Social and personal relationships*, 20, 31-53.
- PINQUART, M. & SÖRENSEN, S. 2003. *Risk factors for loneliness in adulthood and old age--a meta-analysis*, Nova Science Publishers.
- POPPLEWELL, R. & HAYMAN, R. 2012. Where, how and why are action research approaches used by international development non-governmental organisations. *INTRAC-International NGO Training and Research Centre, Briefing Paper*, 32.
- POPULATION REFERENCE BUREAU. 2006. *Europe's Population Aging Will Accelerate* [Online]. Available:

## References

---

- <http://www.prb.org/Publications/Datasheets/2006/EuropesPopulationAgingWillAccelerateSaysDataSheet.aspx> [Accessed 14 September 2014].
- POTTS, R., SHARMA, D. & LINDLEY, J. 2015. Shared Ethnography for Shared Cities. *EPIC 2015: Building Bridges*. Sao Paulo, Brazil.
- PRESCOTT, C. & POLAK, D. J. 2010. *The Delivery of Regenerative Medicines and Their Impact on Healthcare*, CRC Press.
- PWC. 2014. *The sharing economy – sizing the revenue opportunity* [Online]. Price Water House Coopers. Available: <http://www.pwc.co.uk/issues/megatrends/collisions/sharingeconomy/the-sharing-economy-sizing-the-revenue-opportunity.jhtml> [Accessed 12 March 2015].
- QUADAGNO, J. S. 1999. *Aging and the life course: An introduction to social gerontology*, McGraw-Hill College Boston.
- RANDALL, D., HARPER, R. & ROUNCEFIELD, M. 2007. *Fieldwork for design: theory and practice*, Springer Science & Business Media.
- RASCH, G. 1993. *Probabilistic models for some intelligence and attainment tests*, ERIC.
- RIESMAN, D., GLAZER, N. & DENNEY, R. 1961. *The Lonely Crowd: A Study of the Changing American Character*. 1950. New Haven: Yale UP.
- ROBSON, C. & MCCARTAN, K. 2016. *Real world research*, John Wiley & Sons.
- ROGERS, C. 1973. The lonely person and his experiences in an encounter group. *Teoksessa Carl Rogers, On encounter groups*. New York: Harper & Row (originally published 1970. Ref. Perlman & Peplau 1982).
- ROGERS, E. M. 2010. *Diffusion of innovations*, Simon and Schuster.
- ROMME, A. G. L. 2003. Making a difference: Organization as design. *Organization science*, 14, 558-573.
- ROTENBERG, K. J. 1998. Stigmatization of transitions in loneliness. *Journal of Social and Personal Relationships*, 15, 565-576.
- ROUTASALO, P. & PITKALA, K. H. 2003. Loneliness among older people. *Reviews in Clinical Gerontology*, 13, 303-311.
- ROWE, J. W. & KAHN, R. L. 1997. Successful aging. *The gerontologist*, 37, 433-440.
- ROXBY, P. 2012. Loneliness is 'major health issue' [Online]. BBC News. Available: <http://www.bbc.co.uk/news/health-18737560> [Accessed 29 September 2014].
- RUSSEL, D., PEPLAU, L. A. & CUTRONA, C. E. 1980. The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of personality and social psychology*, 39, 472-480.

## References

---

- RUTHERFORD, T. 2012. Population ageing: statistics. *House of Commons library (Standard not. Retrieved Jan 2, 2013, from: www.parliament.uk/topics/PopulationArchive*. Social and General Statistics.
- RYU, M.-H., KIM, S. & LEE, E. 2009. Understanding the factors affecting online elderly user's participation in video UCC services. *Computers in Human Behavior*, 25, 619-632.
- SABANOVIC, S., BENNETT, C. C., CHANG, W.-L. & HUBER, L. PARO robot affects diverse interaction modalities in group sensory therapy for older adults with dementia. *Rehabilitation Robotics (ICORR)*, 2013 IEEE International Conference on, 2013. IEEE, 1-6.
- SADLER, W. A. & JOHNSON, T. B. 1980. From loneliness to anomia. *The anatomy of loneliness*, 34-64.
- SAGOR, R. 2000. *Data Collection: Building a Valid and Reliable Data Collection Plan* [Online]. Association for Supervision and Curriculum Development. Available: <http://www.ascd.org/about-ascd.aspx> [Accessed 28 August 2016].
- SAMPLE, I. 2014. *Loneliness twice as unhealthy as obesity for older people, study finds* [Online]. Available: <http://www.theguardian.com/science/2014/feb/16/loneliness-twice-as-unhealthy-as-obesity-older-people> [Accessed 14 September 2014].
- SANDBACH, R. 2015. *Importance of Innovation by Roy Sandbach* [Online]. Business and IP Centre Newcastle. Available: <https://www.youtube.com/watch?v=GF2n8nqk8eY> [Accessed 03 January 2017].
- SAUNDERS, M., LEWIS, P. & THORNHILL, A. 2016. *Research Methods for Business Students*, Harlow, England, Pearson.
- SAVIKKO, N. 2008. Loneliness of older people and elements of an intervention for its alleviation [PhD thesis]. *Turku, Finland, University of Turku*.
- SCHARF, T. & DE JONG GIERVELD, J. 2008. Loneliness in urban neighbourhoods: an Anglo-Dutch comparison. *European Journal of Ageing*, 5, 103.
- SCHARF, T., PHILLIPSON, C., KINGSTON, P. & SMITH, A. 2003. *Older people in deprived neighbourhoods: social exclusion and quality of life in old age*, Economic and Social Research Council.
- SCHARF, T., PHILLIPSON, C., SMITH, A. E. & KINGSTON, P. 2002. Growing older in socially deprived areas: Social exclusion in later life. *Help the Aged*.
- SCHÖN, D. A. 1983. *The reflective practitioner: How professionals think in action*, Basic books.
- SCHOR, J. 2014. *Debating the Sharing Economy* [Online]. Available: <http://greattransition.org/publication/debating-the-sharing-economy> [Accessed 17 February 2015].

## References

---

- SCHROOTS, J. J. 1996a. Theoretical developments in the psychology of aging. *The Gerontologist*, 36, 742-748.
- SCHROOTS, J. J. 1996b. Theories of Ageing: Psychological. In: BIRREN, J. E. (ed.) *Encyclopedia of Gerontology*. San Diego, CA: Academic Press.
- SCHULZ, R. 2006. *The Encyclopedia of Aging: A Comprehensive Resource in Gerontology and Geriatrics*, Springer Publishing Company.
- SENGERS, P. & GAVER, B. Staying open to interpretation: engaging multiple meanings in design and evaluation. Proceedings of the 6th conference on Designing Interactive systems, 2006. ACM, 99-108.
- SHARMA, D., CLUNE, S. J. & BLAIR, L. 2016. Fostering social innovation for active ageing. *The 20th Academic Design Management Conference: Inflection Point, Design Research Meets Design Practice*. Massachusetts College of Art and Design, Boston: DMI: Design Management Institute.
- SHELDON, J. H. 1948. The Social Medicine of Old Age. Report of an Enquiry in Wolverhampton. *The Social Medicine of Old Age. Report of an Enquiry in Wolverhampton*.
- SHIOVITZ-EZRA, S. & AYALON, L. 2012. Use of Direct Versus Indirect Approaches to Measure Loneliness in Later Life. *Research on Aging*, 34, 572-591.
- SHOSTACK, G. L. 1982. How to design a service. *European Journal of Marketing*, 16, 49-63.
- SICCAMA, C. J. & PENNA, S. 2008. Enhancing validity of a qualitative dissertation research study by using NVivo. *Qualitative research journal*, 8, 91-103.
- SILVERMAN, D. 2006. *Interpreting qualitative data: Methods for analyzing talk, text and interaction*, Sage.
- SIMON, H. A. 1988. The science of design: Creating the artificial. *Design Issues*, 67-82.
- SINGH, A. & MISRA, N. 2009. Loneliness, depression and sociability in old age. *Industrial psychiatry journal*, 18, 51.
- SKILLICORN, N. 2016. *What is innovation? 15 experts share their innovation definition* [Online]. Available: <https://www.ideatovalue.com/inno/nickskillicorn/2016/03/innovation-15-experts-share-innovation-definition/> [Accessed 05 December 2016].
- SLATER, P. 1976. The pursuit of loneliness (Rev. Ed.). *Boston: BeaconPress*.
- SMEETON, N. C. 1985. Early history of the kappa statistic. JSTOR.
- SOCIAL INNOVATION GENERATION. 2012. *Ezio Manzini on Creative Communities and Sustainable Qualities* [Online]. SIG. Available: <http://vimeo.com/42288455> [Accessed 01 December 2014].
- STEEN, M. 2011. Tensions in human-centred design. *CoDesign*, 7, 45-60.



## References

---

- STEPTOE, A., OWEN, N., KUNZ-EBRECHT, S. R. & BRYDON, L. 2004. Loneliness and neuroendocrine, cardiovascular, and inflammatory stress responses in middle-aged men and women. *Psychoneuroendocrinology*, 29, 593-611.
- STOJCEVSKI, A. 2014. Learning to solve 'design problems' in engineering education. Melbourne, Australia: Victoria University, Faculty of Health, Engineering & Science. Retrieved January.
- STRAVYNSKI, A. & BOYER, R. 2001. Loneliness in Relation to Suicide Ideation and Parasuicide: A Population-Wide Study. *Suicide and Life-Threatening Behavior*, 31, 32-40.
- STUART-HAMILTON, I. 2012. *The psychology of ageing: An introduction*, Jessica Kingsley Publishers.
- SUCHMAN, L. A. 1987. *Plans and situated actions: the problem of human-machine communication*, Cambridge university press.
- SUDDABY, R. 2006. From the editors: What grounded theory is not. *Academy of management journal*, 49, 633-642.
- SULLIVAN, H. S. 1953. *The interpersonal theory of psychiatry: edited by HS Perry and ML Gawel*.
- SUSMAN, G. I. & EVERED, R. D. 1978. An assessment of the scientific merits of action research. *Administrative science quarterly*, 582-603.
- TAX, S. 1975. Action anthropology. *Current Anthropology*, 16, 514-517.
- TELLIS, G. J., PRABHU, J. C. & CHANDY, R. K. 2009. Radical innovation across nations: The preeminence of corporate culture. *Journal of Marketing*, 73, 3-23.
- THAGARD, P. & SHELLEY, C. 1997. Abductive reasoning: Logic, visual thinking, and coherence. *Logic and scientific methods*. Springer.
- THE BEATLES 1966. Elanor Rigby. *Revolver*.
- THE CENTRE FOR KNOWLEDGE SOCIETIES 2006. Mobile Development Report. India.
- THE ECONOMIST NEWSPAPER. 2010. *The silver tsunami* [Online]. The Economist. Available: <http://www.economist.com/node/15450864> [Accessed 14 September 2014].
- THE WORLD BANK 2016. Digital Dividends: World Development Report 2016. Washington DC: International Bank for Reconstruction and Development / The World Bank.
- THOMAS, M. 2011. *Deconstructing digital natives: Young people, technology, and the new literacies*, Taylor & Francis.
- TIJHUIS, M., DE JONG-GIERVELD, J., FESKENS, E. & KROMHOUT, D. 1999. Changes in and factors related to loneliness in older men. The Zutphen Elderly Study. *Age and ageing*, 28, 491-495.
- TIWARI, S. C. 2013. Loneliness: A disease? *Indian journal of psychiatry*, 55, 320.

## References

---

- TONKINWISE, C. 2015. *Unpredictable Conveniently Awkward Sharing* [Online]. Available: [https://www.academia.edu/10605747/What\\_Futurists\\_should\\_learn\\_from\\_the\\_Inconvenience\\_of\\_Sharing](https://www.academia.edu/10605747/What_Futurists_should_learn_from_the_Inconvenience_of_Sharing) [Accessed 15 February 2015 2015].
- TORNSTAM, L. 1989. Gero-transcendncnc: A reformulation of the disengagement theory. *Aging Clinical and Experimental Research*, 1, 55-63.
- TORNSTAM, L. 1992. The quo vadis of gerontology: On the scientific paradigm of gerontology. *The Gerontologist*, 32, 318-326.
- TORNSTAM, L. 1994. Gerotranscendence-a theoretical and empirical exploration.
- TOWNSHEND, T. G. 2017. Toxic high streets. *Journal of Urban Design*, 22, 167-186.
- TSEKLEVES, E., BINGLEY, A., ESCALANTE, M. M. L. & GRADINAR, M. A. 2015. Ageing Playfully: Summary Report.
- TSEKLEVES, E., DARBY, A., WHICHER, A. & SWIATEK, P. 2017. Design fictions: a tool for debating societal, legal and ethical aspects of personal and pervasive health systems. *eHealth 360°*. Springer.
- TURNALI, K. 2015. What is design thinking? *Forbes Brand Voice* [Online]. Available: <https://www.forbes.com/sites/sap/2015/05/10/what-is-design-thinking/#48ce0b7d471f> [Accessed 10 February 2018].
- TURNER, P. 2013. How We Cope with Digital Technology. *Synthesis Lectures on Human-Centered Informatics*, 6, 1-109.
- TWIGG, J. & MARTIN, W. 2015. *Routledge handbook of cultural gerontology*, Routledge.
- UNDERWOOD, J. D. 2009. The impact of digital technology: a review of the evidence of the impact of digital technologies on formal education.
- UNITED STATES CENSUS BUREAU 2011. The Older Population: 2010. *2010 Census Briefs*.
- VAN BAARSEN, B., SNIJDERS, T. A., SMIT, J. H. & VAN DUIJN, M. A. 2001. Lonely but not alone: Emotional isolation and social isolation as two distinct dimensions of loneliness in older people. *Educational and Psychological Measurement*, 61, 119-135.
- VAN DE WATERING, M. 2005. The impact of computer technology on the elderly. *Retrieved June, 29, 2008*.
- VAN LANGEN, P. H. G. 2002. The anatomy of design: foundations, models and applications.
- VANDERWEELE, T. J., HAWKLEY, L. C., THISTED, R. A. & CACIOPPO, J. T. 2011. A marginal structural model analysis for loneliness: implications for intervention trials and clinical practice. *Journal of consulting and clinical psychology*, 79, 225.

## References

- VASILEIOU, K., BARNETT, J., BARRETO, M., VINES, J., ATKINSON, M., LAWSON, S. & WILSON, M. 2017. Experiences of Loneliness Associated with Being an Informal Caregiver: A Qualitative Investigation. *Frontiers in Psychology*, 8.
- VICTOR, C., GRENADE, L. & BOLDY, D. 2005a. Measuring loneliness in later life: A comparison of differing measures. *Reviews in Clinical Gerontology*, 15, 63-70.
- VICTOR, C. R., SCAMBLER, S. J., BOWLING, A. & BOND, J. 2005b. The prevalence of, and risk factors for, loneliness in later life: a survey of older people in Great Britain. *Ageing and Society*, 25, 357-375.
- WADENSTEN, B. 2006. An analysis of psychosocial theories of ageing and their relevance to practical gerontological nursing in Sweden. *Scandinavian journal of caring sciences*, 20, 347-354.
- WALKER, A. 2006. Active ageing in employment: Its meaning and potential. *Asia-Pacific Review*, 13, 78-93.
- WALKER, A. & MALTBY, T. 2012. Active ageing: A strategic policy solution to demographic ageing in the European Union. *International Journal of Social Welfare*, 21, S117-S130.
- WANLESS REVIEW TEAM 2005. Social Care Needs and Outcomes: A background paper for the Wanless Social Care Review. London: King's Fund.
- WASHINGTON, O., MOXLEY, D., GARRIOTT, L. & CRYSTAL, J. 2009. Building a responsive network of support and advocacy for older African American homeless women through developmental action research. *Contemporary nurse*, 33, 140-160.
- WATERSON, H. 2014. *No more lonely deaths: our promise to the older people of Adachi in Japan* [Online]. The Guardian. Available: <http://www.theguardian.com/local-government-network/2014/apr/29/no-more-lonely-deaths-older-people-adachi-japan> [Accessed 15 September 2014].
- WEISS, R. S. 1973. Loneliness: The experience of emotional and social isolation.
- WEISS, R. S. 2005. *The experience of retirement*, Cornell University Press.
- WENGER, G. C. 1983. Loneliness: a problem of measurement. *Ageing in modern society*, 145-167.
- WENGER, G. C., DAVIES, R., SHAHTAHMASEBI, S. & SCOTT, A. 1996. Social isolation and loneliness in old age: Review and model refinement. *Ageing and Society*, 16, 333-358.
- WERNER, C. A. 2011. *The older population: 2010*, US Department of Commerce, Economics and Statistics Administration, US Census Bureau.
- WILKES, R. 1978. General philosophy and attitude to ageing. *Soc Work Today*, 9, 14-6.
- WILLEY, J. 2011. *Campaign to fight secret killer of the elderly...loneliness* [Online]. Express. Available: <http://www.express.co.uk/news/uk/226456/Campaign->

## References

---

- to-fight-secret-killer-of-the-elderly-loneliness [Accessed 29 September 2014].
- WINDLE, K., FRANCIS, J. & COOMBER, C. 2011. Preventing loneliness and social isolation: interventions and outcomes. *London: Social Care Institute for Excellence*, 1-16.
- WOODWARD, J. C., ZABEL, J. & DECOSTA, C. 1981. Loneliness and divorce. *Journal of Divorce*, 4, 73-82.
- WORLD HEALTH ORGANIZATION. 2002. *Active Ageing: A Policy Framework* [Online]. World Health Organisation. Available: [http://apps.who.int/iris/bitstream/10665/67215/1/WHO\\_NMH\\_NPH\\_02.8.pdf](http://apps.who.int/iris/bitstream/10665/67215/1/WHO_NMH_NPH_02.8.pdf) [Accessed 5 January 2017].
- WORLD HEALTH ORGANIZATION 2015. World Report on Ageing and Health. World Health Organization.
- YEE, J., TAN, L. & MEREDITH, P. 2009. The emergent roles of a designer in the development of an e learning service.
- ZERVAS, G., PROSERPIO, D. & BYERS, J. 2014. The rise of the sharing economy: Estimating the impact of Airbnb on the hotel industry. *Boston U. School of Management Research Paper*.
- ZILBOORG, G. 1938. Loneliness. *Atlantic Monthly*, 45-54.

# Appendix

## Ethics approval

The following is a copy of the approval granted by Lancaster University's Ethics Committee via email dated 3<sup>rd</sup> June 2015 for the action research based trial. The ethics forms and information sheets used during the study have also been attached below. Amendments suggested by the ethics committee have been incorporated and highlighted in yellow.

**Ethics application approved UREC REFERENCE:RS2014/10**

**Ethics (RSO) Enquiries**

To: [Sharma, Dhruv](#)  
Cc: [Clune, Stephen](#)

Inbox 03 June 2015 16:10

Dear Dhruv

Thank you for submitting your completed stage 1 self assessment form and additional information for **Digital Schools**. The Part B information has been reviewed by members of the University Research Ethics Committee and I can confirm that approval has been granted for this project.

As principal investigator your responsibilities include:


- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress) to the Research Ethics Officer;
- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

To note, as your ethics application indicates that this research will involve making a prototype please contact Gavin Smith, Research and Enterprise Services Division (tel. 01524 593298). Please contact the Research Ethics Officer, Debbie Knight ([ethics@lancaster.ac.uk](mailto:ethics@lancaster.ac.uk) 01542 592605) if you have any queries or require further information.

Kind regards,

*Debbie*

Debbie Knight | Research Ethics Officer | Email: [ethics@lancaster.ac.uk](mailto:ethics@lancaster.ac.uk) | Phone (01524) 592605 | Research Support Office, B58 Bowland Main, Lancaster University, LA1 4YT  
Web: Ethical Research at Lancaster: <http://www.lancaster.ac.uk/depts/research/ethics.html>

**Lancaster University** 

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This e-mail and any attachment is for authorised use by the intended recipient(s) only. It may contain proprietary material, confidential information and/or be subject to legal privilege. It should not be copied, disclosed to, retained or used by, any other party. If you are not an intended recipient then please promptly delete this e-mail and any attachment and all copies and inform the sender. Thank you.



## Consent Form – UK Participants

### Aim of the Study

This study is aimed at reducing the feeling of loneliness amongst the older adults (65 years and over) by using digital technologies. For the sake of this study, participants over the age of 65 years will be referred to as older adults.

This page describes what you will be asked to do for the study. Please read through it and then sign at the bottom to say that you understand and accept the conditions of this study. If you have questions, please feel free to ask the researcher.

### What you will be required to do?

The researcher will begin by asking some general information about yourself and your daily activity. You will be asked to fill in a questionnaire based on a few lifestyle questions. You may be asked to elaborate on some of your personal experiences. You will then be introduced to an internet-based system and will be instructed on how to use it to communicate with young adult students (18 years and over) in India. These students are learning the English language and you will communicate with them in English to help them practice their spoken English skills. A list of possible topics to discuss with them will be provided to you beforehand to facilitate interactions. If you feel uncomfortable, you can opt out of these sessions at any point without needing to provide any reasons to the researcher. Likewise the participants in India will be given the same option; if they feel uncomfortable they have the right to withdraw from the session without providing any explanations..

### How will your information be recorded, stored and used?

These sessions and interviews may be recorded using a voice recorder, video camera or software that records the activity on your computer-screens as this will allow the researcher to revisit the information if required. Important points from the recordings may be used in future presentations at research conferences



and meetings. At all points your identity will be kept anonymous. All the information that you give, and the recordings (that is all data), will be stored securely and kept separate from information about your identity. Access to your data is minimised to the people involved in this research and this data will be stored for the duration of the research work only. Further consent will be sought from yourselves in case some parts of this data is planned to be made public – for instance creating short videos to be shared online.

Wherever possible, recorders will be encrypted; however since some recorders can not be encrypted, any identifiable data will be transferred to a secure (password protected) computer as quickly as possible and the data (including recordings of your voices) will be deleted from such recorders. In the meantime the recorders will be stored securely.

### **What if you decide to change your mind?**

Your participation in this study is voluntary and you can omit any questions in any questionnaires, or you can leave the study at any time without penalty or giving reasons. If you choose to do so, your data will be destroyed and not be used in the study. It is also important to note that if you also have the option of withdrawing up to 2 weeks after your participation. If you withdraw within 2 weeks after your participation, then your data will not be used and will be destroyed; but after this point the data will remain in the study. No undue risk arises from the participation in this study.

### **What to do if you have concerns/complaints?**

If you have any questions, concerns, queries or complaints you can contact project supervisors on the following details:



<b>Dr. Lynne Blair</b>	<b>Dr. Stephen Clune</b>
Office C40	Imagination Lancaster
Infolab21	LICA Building
Lancaster University	Lancaster University
Lancaster LA1 4WA	Lancaster LA1 4YW
United Kingdom	United Kingdom
Email: <a href="mailto:l.blair@lancaster.ac.uk">l.blair@lancaster.ac.uk</a>	Email: <a href="mailto:s.clune@lancaster.ac.uk">s.clune@lancaster.ac.uk</a>
Phone: +441524510360	Phone: +441524510792

Please note that you are helping the researchers to develop an understanding of what it is like to be lonely in the later years of life. You are not being tested and your job is not being evaluated. There are therefore no right or wrong answers to the questions you will be asked. The researcher is very grateful for your help. If you are willing to take part, please sign the consent form below. **The principle researcher can be contacted on the following details:**

## **Dhruv Sharma**

HighWire Centre for Doctoral Training, LICA Building  
Lancaster University, Lancaster LA1 4YW (United Kingdom)  
Email: [d.sharma2@lancaster.ac.uk](mailto:d.sharma2@lancaster.ac.uk)  
Phone: +447875322935

## **Confirmation of participation**

I have read the project Information (above), & I consent to taking part in this exercise.

Signed: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

Witness by the Researcher: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_





## Consent Form – India Participants

(This form will be translated in the local language)

### Aim of the study

This study is aimed at reducing the feeling of loneliness amongst older adults by using digital technologies. For the sake of this study, participants over the age of 65 years will be referred to as older adults.

This page describes what you will be asked to do for the study. Please read through it and then sign at the bottom to say that you understand and accept the conditions of this study. If you have questions, please feel free to ask the researcher.

### What you will be required to do?

The researcher will begin by asking some general information about yourself and your daily activity. You will be asked to fill in a questionnaire based on a few lifestyle questions. You may be asked to elaborate on some of your personal experiences. You will then be introduced to an internet-based system and will be instructed on how to use it to communicate with older adults (65 years and over) in the UK. These participants are involved in this study to understand if digital technologies such as this platform can prevent or reduce the feeling of loneliness amongst older adults. They will communicate with you in English language to help you practice your spoken English skills. A list of possible topics to discuss with them will be provided to you beforehand to facilitate interactions. If you feel uncomfortable, you can opt out of these sessions at any point without needing to provide any reasons to the researcher. Likewise the older adults in the UK will be given the same option; if they feel uncomfortable they have the right to withdraw from the session without providing any explanations.

### How will your information be recorded, stored and used?



These sessions and interviews may be recorded using a voice recorder, video camera or software that records the activity on your computer-screens as this will allow the researcher to revisit the information if required. Important points from the recordings may be used in future presentations at research conferences and meetings. At all points your identity will be kept anonymous. All the information that you give, and the recordings (that is all data), will be stored securely and kept separate from information about your identity. Access to your data is minimised to the people involved in this research and this data will be stored for the duration of the research work only. Further consent will be sought from yourselves in case some parts of this data is planned to be made public – for instance creating short videos to be shared online.

Wherever possible, recorders will be encrypted; however since some recorders can not be encrypted, any identifiable data will be transferred to a secure (password protected) computer as quickly as possible and the data (including recordings of your voices) will be deleted from such recorders. In the meantime the recorders will be stored securely.

### **What if you decide to change your mind?**

Your participation in this study is voluntary and you can omit any questions in any questionnaires, or you can leave the study at any time without penalty or giving reasons. If you choose to do so, your data will be destroyed and not be used in the study. It is also important to note that if you also have the option of withdrawing up to 2 weeks after your participation. If you withdraw within 2 weeks after your participation, then your data will not be used and will be destroyed; but after this point the data will remain in the study. No undue risk arises from the participation in this study.

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**Dr. Lynne Blair**

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Phone: +441524510792

Please note that you are helping the researchers to develop an understanding of what it is like to be lonely in the later years of life. You are not being tested and your job is not being evaluated. There are therefore no right or wrong answers to the questions you will be asked. The researcher is very grateful for your help. If you are willing to take part, please sign the consent form below. **The principle researcher can be contacted on the following details:**

**Dhruv Sharma**

HighWire Centre for Doctoral Training, LICA Building

Lancaster University, Lancaster LA1 4YW (United Kingdom)

Email: [d.sharma2@lancaster.ac.uk](mailto:d.sharma2@lancaster.ac.uk)

Phone: +447875322935

**Confirmation of participation**

I have read the project Information (above), & I consent to taking part in this exercise.

Signed: \_\_\_\_\_

Printed Name: \_\_\_\_\_

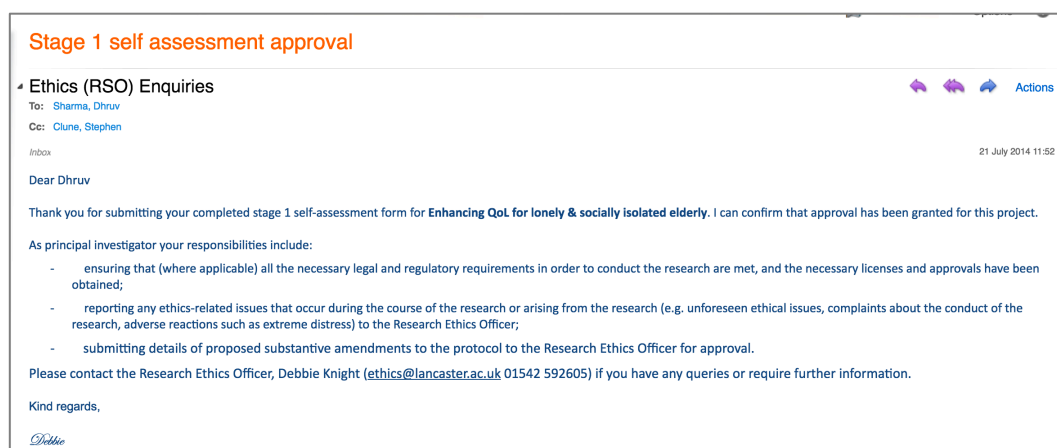
Date: \_\_\_\_\_

Witness by the Researcher: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

The following is a copy of the approval granted by Lancaster University's Ethics Committee via email dated 21<sup>st</sup> July 2014 for the expert interviews. The ethics forms and information sheets used during the study have also been attached below. Amendments suggested by the ethics committee have been incorporated and highlighted in yellow<sup>32</sup>.



<sup>32</sup> Please note that these forms contain Lancaster University's previous logo. Lancaster University's 'swoosh logo' was replaced by the current crest in April 2014.



### *Information Sheet*

# Enhancing QoL for Lonely and Socially Isolated Elderly

I would like to invite you to take part in a research study on “Enhancing Quality of Life for Lonely and Socially Isolated Elderly”. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Once you have read the information below you can decide if you would like to take part in the study.

‘Measuring Loneliness’ is a part of my on going PhD work at HighWire Doctoral Training Centre in Lancaster University, UK.

#### **Background**

Loneliness is often perceived as a problem because it is known to have detrimental effects on a person’s health and quality of life. It is known to be socially prevalent among older adults especially in higher age groups. Because it is a ‘subjective feeling’, it is difficult to identify and measure. Researchers usually rely on self-reported measures of loneliness by administering questionnaires and surveys in order to categorise and classify people based on whether they feel lonely or not. In order to develop interventions to reduce loneliness, it is very important to be able to measure it effectively to gauge the success or failure of the intervention. Therefore measuring loneliness effectively is very important and this study aims to understand whether technology can play a role in measuring it effectively.

#### **Overall Project and Purpose of this Study**

The project aims to gather insights from experts in the area. It looks to understand the problems and opportunities posed by existing methods of identifying and measuring loneliness. This study aims to discuss with experts whether technology has a role to play in helping us measure loneliness successfully.

Dhruv Sharma  
HighWire DTC, LICA Building, Lancaster University, Lancaster, LA1 4YW | t +44 (0)7875322935 | e d.sharma2@lancaster.ac.uk



### Why have I been invited?

You have been identified as an expert - someone with the experience of working with the elderly. We would like you to share your experiences of working with the elderly to help us understand the context and facilitate our research work. We would also like you to share your thoughts and perceptions about the potential of technology to assist in identifying and in measuring loneliness.

### Do I have to take part?

Participation in this study is entirely voluntary and you are free to refuse to take part or to withdraw from the study at any time without having to give a reason and without this affecting your work. You can withdraw from the study within 14 days after participation if you change your mind. If you choose to do so, then all data associated with you will be destroyed and not used for the study; but after this point the data will remain in the study. You can get in touch with us via post, email or phone numbers provided below if you wish to withdraw from the study.

### What is involved?

You can help this project by telling me your thoughts and opinions on loneliness in general. This will take place at a time and place convenient to you. In order for me to develop a thorough understanding of your work I may ask you to complete a questionnaire and/or an informal interview.

You will be asked to sign a form saying that you are willing to participate in the research. The consent form will explain what will be asked and what will happen to any information which is collected. You will be given a copy of this form to keep.

If you would like to know more about this research please contact the researcher, Mr. Dhruv Sharma, (Ph: 07875322935, E: [d.sharma2@lancaster.ac.uk](mailto:d.sharma2@lancaster.ac.uk)) or if you have questions that cannot be answered by the researcher, please feel free to contact the Project Supervisors:

[Dr. Lynne Blair](#)

School of Computing and Communications, Lancaster University, Lancaster LA1 4YW.

Phone: +44 (0) 1524 510302

Email: [l.blair@lancaster.ac.uk](mailto:l.blair@lancaster.ac.uk)

Dhruv Sharma

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Dr. Stephen Clune

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Phone: +44 (0) 1524 10792

Email: [s.clune@lancaster.ac.uk](mailto:s.clune@lancaster.ac.uk)



### *Consent Form*

# Enhancing QoL for Lonely and Socially Isolated Elderly

This study is aimed at understanding the most effective ways of measuring 'loneliness' amongst the elderly people (65 years and over).

This page describes what you will be asked to do for the study. Please read through it and then sign at the bottom to say that you understand and accept the conditions of this study. If you have questions, please feel free to ask the researcher.

The researcher will begin by asking some general information about yourself and your job. You will be asked your opinion and thoughts to gain a better understanding of what it is like to work with someone who feels or has felt lonely. These thoughts and opinions may be elicited through interviews and questionnaires. You may be asked to share your personal experiences, context and nature of your engagement with the elderly, and also your feelings and observations while working with them.

These interview sessions may be recorded using a voice recorder or video camera, as this will allow the researcher to revisit the information if required. Important points from the recording may be used in future presentations at research conferences and meetings.

Your participation in this study is voluntary and you can omit any questions in any questionnaires, or you can leave the study at any time without penalty or giving reasons. No undue risk arises from the participation in this study.

All the information, which you give, and the recordings (that is all data) will be stored safely and kept separate from information about your identity. Access to your data is minimised to the people involved in this research and this data will be stored for the duration of the research work only.

Please note that you are helping the researchers to develop an understanding of what it is like to be lonely in the later years of life. You are not being tested and your job is not being evaluated. There are therefore no right or wrong answers to the questions you will be asked. The researcher is very grateful for your help. If you are willing to take part, please sign the consent form below.

I have read the project Information (above), & I consent to taking part in this exercise.

Signed: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

Witness by the Researcher: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_



### Action Research Based Trial Notes

The following Contact Summary Forms (see Table 17) were used to document the key themes, questions, and information emerging from each ethnographic visit during the trial. The contact summary form for the fourth videocalling session has been presented in Table 17. The following tables summarise the other sessions.

<b>Contact Type:</b> Ethnographic visit	<b>Site:</b> The XYZ Pub, Greater Manchester (UK)
	<b>Contact Date:</b> 24/09/15
	<b>Today's Date:</b> 26/09/15
<b>What were the main issues or themes that struck you in this contact / visit?</b>	
<p><u>Moderation:</u> 6 students gathered around laptop didn't seem like the ideal approach. Both parties were struggling to understand each other. Even when Sameer's earphones were used, only Geeta could speak to them. Geeta and Mohit tried sharing the pair of earphones by plugging it into one ear each, but that didn't seem to solve any problems. For most part when the network wasn't dropping, Geeta was trying to tell them about their University, but it was mostly inaudible.</p> <p><u>Touchscreen:</u> I had started noticing this issue earlier but I thought if we could get Mollie to sign into Skype once, then she wouldn't have to worry about it. However, each time the call dropped, Mollie was struggling to either take the call by pressing the correct icon, or trying to ring them back, but the iPad wasn't registering her response. While Hillary and Mollie joked about it every time the call dropped saying things like "Ah! Here we go again!", I could sense that their facial expressions changing when it happened about 4 or 5 times. They appeared a bit frustrated but didn't say that outright. Mollie had mentioned to me in an earlier interaction that she has an iPad that was given to her by her family, and that she has to press the buttons a few times for it to work.</p> <p><u>Interaction:</u> The information that was being shared, or was being attempted to be shared, was very basic in the sense that Mollie was asking each of the students their names. Hillary was mostly smiling to the students and waving to them to say hello. The students asked Mollie and Hillary's name but neither Mollie, nor Hillary could hear them. Mollie even tried to cup her hand behind her ear in an attempt to amplify her hearing, but that did not work. There were times when the students were talking to each other in Hindi saying "What are they asking?", "I can't hear anything", "Tell them about our city, and the University". Because I could hear, and understand them, I decided to become the interpreter and the trouble-shooter during the call. This resulted in some information being communicated effectively after the earphones were plugged in (at students' end) such as names, and the fact that Kurukshetra (where the students were calling from) was a city in the North of India.</p>	

Summarise the information you got (or failed to get) on each of the target questions you had (from the previous session) for this contact.	
Question	Information
What types of things can they talk about?	Very basic information conveyed. The researcher acted as an interpreter, and also helped in operating the iPad to minimise the challenge of operating technology and the constantly dropping network.
What are the key challenges and opportunities?	Noise level in the pub, and in India (outdoors) compounded by hearing problems.  Network issues (Free Wifi). There is Broadband in the pub though.  Operating iPad – finger response not registering, resulting in frustration.
<b>Anything else that struck you as salient, interesting, illuminating or important in this contact / visit?</b>	
It was interesting to note that Derek and Patrick came over to say hello to the Indian students by waving at them. They did not say anything but were stood close to me (although out of the video feed) as they were curious and were observing us run the session – possibly didn't talk to us to avoid any disruption to our 'work'.	
<b>What new (or remaining) target questions do you have in considering the next contact (with this site) / visit?</b>	
<p><i>How can operating the touchscreen interface (iPad) be improved?</i>  <u>Options:</u> Letting the researcher / volunteer control it, trying out a stylus (relying on muscle memory), using alternate software (searching online for options)</p> <p><i>How to improve communication (hearing problems)?</i>  <u>Options:</u> External speakers with amplification, making earphones a standard feature of the sessions on either side (India and UK).</p> <p><i>How to involve more participants in the UK?</i>  <u>Options:</u> Speak to Derek and Patrick and request them to join in. Get Mollie and Hillary to find more participants.</p> <p><i>How to prevent disconnecting from the Internet time and again?</i>  <u>Options:</u> Speak to the pub manager to gain access to the broadband. Scout the pub for 'sweetspots'. From memory – the corner near the stage has a nice seating area, and the network there wasn't too bad when I used to sit there during my early visits. The lighting is a bit dim but that can be fixed.</p>	

Notes from Session 1

<b>Contact Type:</b> Ethnographic visit	<b>Site:</b> The XYZ Pub, Greater Manchester (UK)
	<b>Contact Date:</b> 15/10/15
	<b>Today's Date:</b> 16/10/15
<b>What were the main issues or themes that struck you in this contact / visit?</b>	
<p><u>Supported environment:</u> After spending a couple of weeks with UK participants, trying to teach them the basics of using an iPad, I noticed that I was mostly finding myself troubleshooting, rather than them learning anything new. There was also reluctance in using the iPad. Isabelle, who is in her late 90s had mentioned last week that she has been shown how to log onto an iPad "a million times" by her family members when they visited, but she still made mistakes.</p> <p><u>Adapting to the situation:</u> Although I had planned to use earphones for this session, and I had bought a 5-way earphone splitter online to allow multiple participants to listen into the call, it was only when I was about to hand out the earphones I noticed that all three of my UK participants (Molly, Derek, and Roger) were wearing hearing aids. Having had no previous experience in handling this situation before, I decided against using earphones, as it might have come across as being rude, or it might inconvenience them. I just told them that we would get two of them to talk to the students, whilst the rest could observe how the session goes so they could participate next time.</p> <p><u>Familiarity:</u> When I told them of the plan, Mollie and Hillary immediately volunteered to be the callers. They had participated in the first session from a few weeks ago, and were familiar with the process. It felt like they wanted to take another shot at it. Craig, Derek, and Roger decided to stay by the side to see how the session went just to familiarise themselves with what was happening.</p> <p><u>Single users:</u> There was hardly any conversation (dialogue) between both the parties. On the UK side Mollie, who was holding the iPad did most of the talking, and on the Indian side, it was Aashima who dominated the conversation. This was partly because she had the earphones on initially, and even when she removed them, she had control of the phone that they were using to make the Skype call. Vineet and Piyush hardly interacted but were smiling throughout the call. They only responded to questions such as what their names were, and what degree they were studying.</p>	
<b>Summarise the information you got (or failed to get) on each of the target questions you had (from the previous session) for this contact.</b>	
Question	Information
Can using a Stylus improve the interaction with the iPad?	Using a stylus was an experiment that seemed to work. Mollie said she found it really easy to operate the iPad with the stylus. She also told me that because she had been a typist before, she did not have too many problems finding what to type, but that her main

	frustration was that she was finding it hard to press the buttons, or icons with her fingers. I knew that Mollie owned a personal iPad too, and I told her that she could keep the Stylus and I would just buy a new one as it wasn't too expensive. She hesitated but insisted and she thanked me for it.
Can earphones be used to improve audio-quality, and mitigate hearing problems?	This idea did not work as I noticed that some of the older participants had hearing aids and it wasn't appropriate of me to ask them to remove their hearing aids to use the earphones. At the start of the project I had decided to make it an easy experience for them and I did not want them to go out of their way to help me out so I decided against it. Even on the Indian side, Aashima who had the earphones on at the start of the call seemed to control most of the conversation following on from that point onwards. I did not have the budget or resources to get a 5-way earphone splitter to India so I decided to rule it out completely.
Can finding a sweetspot improve the video quality?	I had found a few areas in the pub where the network strength was better than the area where we were doing the session last time. It felt like most of the pub had decent connectivity but there were a few corners where the network kept dropping. The silent area near the stage was where the best wifi network was available.
<b>Anything else that struck you as salient, interesting, illuminating or important in this contact / visit?</b>	
Although the call didn't drop or get disconnected as frequently as the previous attempt, possibly due to the wifi sweetspot, the video quality was still poor in the sense that Mollie was holding the iPad and trying to talk to the students. Every now and then the iPad would gradually tilt in her hands and the camera would point to either her hair, or the ceiling. Mollie was correcting herself as and when she realised but I could see that her hands were shaky. Hillary was saying things like "Ask the boys to say something too" to Mollie, rather than asking the questions directly.	
<b>What new (or remaining) target questions do you have in considering the next contact (with this site) / visit?</b>	

*How can the video quality be improved?*

Options: using an iPad stand, sitting with the participants and holding the iPad myself, using a laptop or PC, using the pub's TV.

*How can the audio quality be improved?*

Options: Using external speakers, if access to pub's TV can be granted, using its internal speakers (with amplification), trying out one-to-one conversations.

<b>Contact Type:</b> Ethnographic visit	<b>Site:</b> The XYZ Pub, Greater Manchester (UK)
	<b>Contact Date:</b> 5/11/15
	<b>Today's Date:</b> 5/11/15
<b>What were the main issues or themes that struck you in this contact / visit?</b>	
<p><u>Laptop:</u> Introducing the laptop certainly reduced the shakiness of the video as it was a more stable device. I was using a chair to place the laptop on closer to the Television. Where I could place the laptop was dictated by two main factors. Firstly, the length of the HDMI cable (2 m) that I had bought online last week. Secondly, the laptop had to be in the 'sweetspot' area to be able to have a stable Wifi connection. However, the videoquality was better because Vineet (3<sup>rd</sup> caller of the day) could identify that Isabelle was doing something sitting in the front chair. He thought she was knitting, but she told him that she was doing crochet. Vineet said he knew about crochet, as his sister also did it.</p> <p><u>Mediation:</u> Piyush tried to speak to the participants but he could not hear anyone clearly. In addition to the video quality improving, the other positive from this call was that the Television's speakers had a good amplification on them so it was easier for UK participants to understand Piyush. This also meant that having 10 minute slots for each of the Indian callers to speak individually was proving to be effective in some ways. When it came to the second call (with Aashima), Sarah and Michelle (volunteers) had gone up to the laptop, and Sarah was holding it in her hand. At this point I was taking pictures, and speaking to Diane. I told everyone that Aashima has a dog. To this Diane told us that when she was growing up, she always had a dog. When the UK participants told Aashima that they wanted to see the dog, Aashima couldn't hear the properly – just like Piyush in the previous call. Sarah, who was holding the laptop in her hands at this point, was closer to the microphone (in-built) and therefore said "Everybody here wants to see your dog". At this point the UK participants were smiling and saying "the dog, dog... we want to see the dog!" After failing to understand them a few times, she got the message via Sarah and said "Oh! You want to see the dog?" There was a collective "Yes!" from the UK participants and when Aashima pointed her camera to the dog, the UK participants welcomed it with a loud cheer and clapping.</p>	
<b>Summarise the information you got (or failed to get) on each of the target questions you had (from the previous session) for this contact.</b>	
<b>Question</b>	<b>Information</b>

Would using a laptop and pub's TV improve the audio-video quality of the calls?	<p>Having the laptop reduced the shakiness of the video and was definitely useful in improving the video quality. This was evidenced by Vineet being able to recognise Isabelle's activity.</p> <p>Also, utilising the TV's speakers significantly improved the audio quality for UK participants as they did not have to do away with their hearing-aids, but were able to understand the students.</p>
<b>Anything else that struck you as salient, interesting, illuminating or important in this contact / visit?</b>	
<p><u>The lived experience of loneliness:</u> During this visit after the calls I was speaking to Felicity while she went out for a smoke. Felicity was Michelle's next-door neighbour, and used to drive Michelle to, and from these lunch-sessions. They had lived close to each other for quite some years, and had become good friends. Michelle had recently (about a year ago) lost her husband, who also used to attend these sessions with her when he was alive. Most of Michelle's family lived away from her. One of her daughters was in Australia. Felicity's family however, lived close-by, within Greater Manchester area, and her children used to visit her over the weekends. Felicity mentioned that she loves her grandchildren but "they can be a real pain sometimes (laughingly)". She said they can be really noisy sometimes but she said that Michelle had mentioned to her that she likes it when Felicity's grandchildren are playing the back garden because she can hear them talking, and shouting. Felicity also told me that Michelle makes it a point to visit when Felicity's family is around, just because she gets to see and hear people as she can't go out and about since she has a hip-replacement surgery due soon. "She is in a lot of pain you see!" said Felicity about Michelle.</p> <p><u>Engagement:</u> It was interesting to see that Craig, who had been a computer teacher back in the 1980s, had said to me in one of our early interactions that "Technology is not for me". When I had initially asked him whether he would like to participate in the sessions, he had declined the offer. However, he was 'hovering' around in the previous session, and stayed by our side for pretty much the entire duration, and this time he decided to shout out from the crowd "Which football team do you support?" to Vineet who was calling from India. When Vineet mentioned that he didn't watch as much football, and was more into cricket, Craig was quick to ask him a follow-up question. Craig wanted to know if football was as popular a sport in India, as cricket? Vineet told Craig that cricket was more popular at the moment but football was increasingly gaining popularity too.</p>	
<b>What new (or remaining) target questions do you have in considering the next contact (with this site) / visit?</b>	
<i>How can I improve the sound quality such that Indian students can hear and understand UK participants more clearly?</i>	

## Appendix

Options: Try an external microphone, increase the lengths of the HDMI cable so that the laptop could be placed closer to the UK participants.

<b>Contact Type:</b> Ethnographic visit	<b>Site:</b> The XYZ Pub, Greater Manchester (UK)
	<b>Contact Date:</b> 12/11/15
	<b>Today's Date:</b> 12/11/15
<b>What were the main issues or themes that struck you in this contact / visit?</b>	
<p><u>Technical challenges</u></p> <p>No calls were set up for this session. This is partly because I hadn't managed to get the technology to work. I spent most of my time trying to get the new (longer) HDMI cable to work at home but every now and then it would make a sparking sound and I was worried that it might damage my laptop. I had therefore ordered a replacement to be sent which hadn't yet arrived. I had also spent time trying to work out how to get an external microphone working with my laptop (<i>Macbook Pro</i>). I had consulted online forums to figure out how to transmit the audio to an external screen via HDMI whilst using the audio-jack to connect an external microphone. Because microphones seemed to be quite expensive, I decided to buy one that was designed for smartphones but the online reviews mentioned that it would work with laptops and DSLRs too. This is due to arrive in a day or two – hopefully in time for the next session.</p> <p><u>Michelle's enthusiasm</u></p> <p>I felt like after my conversation with Felicity last week, I needed to spend some time with Michelle to thank her, and also to offer an apology. During the session with Piyush, where he was unable to hear the UK participants properly, I had noticed that Michelle got up from her seat and walked closer to the laptop to try and speak to Piyush. She had also tried to speak loudly, her voice cracking up a bit on a few instances. Those observations, coupled with what Felicity had told me, made me feel a bit guilty for putting Michelle through a lot of trouble. After my tinkering with the technology, when Michelle had eaten, I went up to her to speak to her and apologised. She laughed and said that she had hadn't been inconvenienced at all. She said that she likes helping people, and was "always up for something new. It keeps this (pointed to her head) going. One needs to keep their brain occupied with new things" she said. She also mentioned that she knew that by participating in these sessions, she was helping me in some way, and because I was helping her out in learning how to use her iPad, she was very happy.</p>	

<b>Contact Type:</b> Ethnographic visit	<b>Site:</b> The XYZ Pub, Greater Manchester (UK)
	<b>Contact Date:</b> 03/12/15
	<b>Today's Date:</b> 05/12/15
<b>What were the main issues or themes that struck you in this contact / visit?</b>	

**Drop out:** Only Vineet and Mohit were available for the session. Aashima had conveyed to me that her exams were approaching, and that she couldn't participate in the sessions although she "really enjoyed the sessions". I tried contacting Piyush on whatsapp, but he did not get back to me. At the time of doing the session, I was partly worried if Piyush had dropped out because of the long wait-time in the previous session? However, we have been in touch since and he has assured me that he was just busy managing his internship and studies. It was easier for Vineet to attend as he was a PhD scholar and therefore had no exams. Mohit on the other hand suggested that he was utilising these 10 minutes or so as a break between his studies.

**Global reach:** Whilst we were speaking to Hillary about how she felt about the sessions, she said "Technology is great now you know. We never had this when I was young and it's really lovely that we can speak to people all over (the world). That's something that we couldn't do before".

**Richness of Conversations:** By this time Vineet had started to become a familiar face. Craig, recognised Vineet as well, as he had spoken to him before about sports. When he saw that Vineet's room was a bit untidy, Craig asked him loudly "Has someone broken-in to your room? Has there been a burglary?" Everybody including Vineet laughed at the joke and Vineet explained that he hadn't had time to clean his room recently. There were a lot of things lying around on Vineet's bed, that could be seen clearly in the videocall. This also indicated that the video quality of the calls had improved significantly since the first session. On the other hand, Mohit was telling us about things he enjoyed doing, and said that he really liked to cook. To this Derek, a man who had dawned many hats in the past, ranging from a lorry driver for a large bread-maker, to being a door-to-door salesman told Mohit that he had been a baker before and still likes to bake occasionally. He said if Mohit was interested in Baking, then he could teach him a "trick or two" about it. Derek had mentioned to me previously, during my early conversations with him that he had learned his baking from professional bakers, who were his colleagues, when he used to drive a lorry to deliver their bread to various shops.

**Summarise the information you got (or failed to get) on each of the target questions you had (from the previous session) for this contact.**

Question	Information
Can limiting the sessions to indoor conversations improve the video quality?	Requesting students to make the videocalls from indoor premises also significantly improved the video quality. This was specifically evident in the phone call with Vineet where participants could see stuff lying on his bed in the background. During the previous session, Vineet had tried to show us how people on his street had put up decorations and lighting for



## Appendix

	Diwali. As soon as he had stepped out, the video quality had dropped.
<b>Anything else that struck you as salient, interesting, illuminating or important in this contact / visit?</b>	
Michelle would have been great at this session due to her enthusiasm. However, sadly she was taken to the hospital for her hip-replacement surgery and due to some complications she had to stay there a bit longer. I was told by others that she would have to move closer to Manchester town, and would be going to a care-home, so she might not be coming back to these sessions. I was a bit disheartened at that news because leaving all the research aside, I had forged a bond of sorts with Michelle, and used to look forward to seeing her on Thursdays. Others were feeling her absence too. My immediate thoughts were to see if we could facilitate Michelle's participation in these sessions, but I did not have the ethical approval for that as I could not guarantee if I would be putting Michelle under stress, so I had to put that idea on hold.	
<b>What new (or remaining) target questions do you have in considering the next contact (with this site) / visit?</b>	
None. I have decided to discontinue the sessions until the second week of January to allow students to focus on their examinations. The attendance at the lunch sessions was also reducing as Christmas was approaching and some UK participants' family members were visiting. The cold weather had also impacted attendance.	

<b>Contact Type:</b> Ethnographic visit	<b>Site:</b> The XYZ Pub, Greater Manchester (UK)
	<b>Contact Date:</b> 14/01/15
	<b>Today's Date:</b> 14/01/15
<b>What were the main issues or themes that struck you in this contact / visit?</b>	
<p><u>Conclusion:</u> Even before the session, I knew this was going to be the final videocalling session as I need time to concentrate on my analysis, and thesis writing. Geeta and Sameer had been unreachable and because they had not responded to my emails, I had to respect their privacy, and not pursue them any further. Unfortunately, Aashima and Piyush had gone home after their exams, and hence could not participate in this session. They had informed me of their unavailability during our last conversation.</p> <p><u>New Conversations:</u> Many UK participants were missing today, possibly due to the bad weather. This meant that neither Craig, with whom Vineet had shared a joke last time, nor Isabelle and Heather, who had greeted him cheerfully, were around. So when Vineet came on to the screen, Eduardo proactively took the microphone and spoke to him about his visits to India. He even told Vineet about a spiritual guru that Eduardo had in India, and told him about the place he used to visit. Vineet had never heard of the place. During the call with Mohit, Derek spoke to him and they talked about what they did over the Christmas period. Derek told Mohit that his family visited them for Christmas and that he is very fond of his</p>	

<p>grandchildren, so he was very happy that he got to spend some quality time with them. Mohit told him, that he had been quite busy with the exams, and that they went well. He also told Derek that he had gone home, which wasn't too far for a few days after his exams.</p> <p><u>Quality:</u> I felt as if although the overall audio-video quality had improved significantly, the quality of interactions weren't the same. There were far less people in the pub, so the noise level was generally low, but both the calls lasted about 5 minutes each. Especially when Mohit and Derek were talking, it felt like it was a very formal interaction.</p>	
<p><b>Summarise the information you got (or failed to get) on each of the target questions you had (from the previous session) for this contact.</b></p>	
<b>Question</b>	<b>Information</b>
None	None
None	None
<p><b>Anything else that struck you as salient, interesting, illuminating or important in this contact / visit?</b></p>	
<p>Although everybody was aware that today was the final session, the good-byes sounded fairly 'normal'. Also, I felt as if I could have postponed the session to get more callers on either side, but I had already extended my overall timeline for these sessions, and I needed to begin finishing other parts of my PhD so I had decided to go ahead with just 2 callers.</p>	
<p><b>What new (or remaining) target questions do you have in considering the next contact (with this site) / visit?</b></p>	
<p>None. However, for future iterations, I have been thinking of exploring the option of pairing these guys with local schools that teach English to foreign nationals as an option, or countries where the time-difference isn't that much.</p>	

### Coding categories

The following Standard Working Principle (SWP) statements were used to code the interventions:

Standard Working Principle (SWP)	Level of Innovation
If someone is lonely, get someone to interact with them.	Improvement
If someone's lonely, get them to participate in an activity with others who might experience the same thing.	Incremental

## Appendix

If someone's lonely, get someone to interact with them and signpost help and services.	Incremental
If someone's lonely, get someone to interact with them in a mentoring position.	Incremental
If someone's lonely, get someone to interact with them and upskill them so they can explore options for help and other relevant services.	Major
If someone's lonely, get them to focus on their inner self by practicing mindfulness and meditation.	Major
If someone's lonely, get them to use alternate ways of interacting with others.	Major
If someone's lonely, they need various kinds of support (intrinsic and extrinsic) - a cluster of interventions.	Major
If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.	Radical
If someone's lonely, recreate the experience of owning a pet using technology.	Radical

Table showing all interventions reviewed in the SLR

No.	Name	Source (SLR, CTCL website, Twitter, or Other)	Scope of the Intervention (One to one, Group based, or Community based)	Objective of the Intervention (Preventative, Supportive, or Remedial)	Level of Innovation (Improvement, Incremental, Major, or Radical)	Extent of Usage of Digital Technologies (Scores out of 6)
1	Homelessness Intervention Programme	SLR	One to one	Supportive	Improvement	0
2	No name: Cognitive Enhancement Programme	SLR	Group based	Remedial	Incremental	1
3	Connect for Care	SLR	Group based	Remedial	Improvement	3
4	PARO	SLR	One to one	Remedial	Radical	2
5	No name: Comprehensive Educational Programme	SLR	Group based	Supportive	Incremental	0
6	No name: Peer Counselling Programme	SLR	Community based	Supportive	Incremental	0
7	No name: Wellness Guide for Older Adults	SLR	Community based	Supportive	Incremental	2
8	Healthy Living Centre (HLC)	SLR	Community based	Remedial	Incremental	1
9	Dementia Café	SLR	Group based	Remedial	Incremental	2
10	Partners in Dementia Care	SLR	One to one	Supportive	Incremental	0

## Appendix

11	No name: Tai Chi Exercise Programme	SLR	One to one	Remedial	Incremental	0
12	No name: Videoconferencing Programme	SLR	One to one	Remedial	Major	3
13	Community Living in Place, Advancing Better Living for Elders (CAPABLE)	SLR	Community based	Preventative	Incremental	1
14	No name: Comprehensive Geriatric Assessment	SLR	One to one	Remedial	Improvement	1
15	No name: Widow to Widow Programme	SLR	One to one	Remedial	Incremental	0
16	Young@Heart	SLR	Community based	Remedial	Incremental	1
17	Healthy Ageing	SLR	Community based	Supportive	Major	1
18	No name: Comprehensive educational group intervention for older women	SLR	Group based	Preventative	Incremental	1
19	No name: Home visit programme for older people with poor health status	SLR	One to one	Preventative	Improvement	0
20	No name: Psychosocial group rehabilitation	SLR	Group based	Remedial	Incremental	0
21	No name: Senior school	SLR	Group based	Preventative	Incremental	0
22	A Matter of Balance (AMB)	SLR	Group based	Supportive	Incremental	1

## Appendix

23	Vital Aging-M	SLR	One to one	Remedial	Major	3
24	ELDERSHINE	SLR	Community based	Remedial	Major	1
25	No name: Day care	SLR	Group based	Remedial	Incremental	0
26	Spring Retirees Activity Centre (RAC)	SLR	Community based	Preventative	Incremental	0
27	Community-based Early Psychiatric Interventional Strategy (CEPIS)	SLR	Community based	Preventative	Incremental	0
28	No name: Ladies' Club and Gentlemen's Club	SLR	Community based	Remedial	Incremental	0
29	The Homebound Unit of Burden Center	SLR	One to one	Preventative	Incremental	0
30	Homeward Bound	SLR	One to one	Preventative	Major	0
31	No name: Psychosocial group rehabilitation	SLR	Group based	Remedial	Incremental	0
32	Helping Older People Experience Success (HOPES)	SLR	One to one	Preventative	Incremental	0
33	No name: Nurse-led interprofessional mental health promotion intervention	SLR	One to one	Supportive	Major	0
34	Chorale	SLR	Community based	Remedial	Incremental	0
35	No name: Volunteering	SLR	Community based	Remedial	Radical	1

## Appendix

36	No name: Web-based intervention on Psychosocial well-being	SLR	One to one	Supportive	Incremental	2
37	Esc@pe	SLR	One to one	Remedial	Major	2
38	No name: Computer based intervention	SLR	Community based	Remedial	Incremental	2
39	No name: playing Wii	SLR	One to one	Remedial	Incremental	2
40	No name: Computer training and Internet usage	SLR	Group based	Supportive	Major	2
41	Assisting Carers using Telematics Interventions to meet Older Persons' Needs (ACTION)	SLR	One to one	Supportive	Major	3
42	Seniornet	SLR	Community based	Supportive	Major	6
43	No name: Home visits by commissioned welfare volunteers	SLR	One to one	Supportive	Improvement	0
44	The Open Universities for Senior Citizens (UnATI)	SLR	Group based	Preventative	Major	4
45	Third Age University Program	SLR	Group based	Preventative	Major	2
46	Senior Diploma	SLR	Group based	Preventative	Radical	2
47	Fitness and Arthritis in Seniors Trial (FAST)	SLR	Group based	Preventative	Incremental	0
48	ANU Wellbeing Study: Internet Support Group	SLR	Group based	Remedial	Major	2

## Appendix

49	ANU Wellbeing Study: Internet Training Program	SLR	Group based	Remedial	Major	3
50	Lifestyle Engagement Activity Program (LEAP)	SLR	One to one	Remedial	Improvement	1
51	Interpersonal Psychotherapy (IPT)	SLR	Group based	Remedial	Improvement	0
52	Healthy IDEAS	SLR	One to one	Remedial	Improvement	2
53	REPRINTS (Research of Productivity by Intergenerational Sympathy)	SLR	Community based	Supportive	Radical	0
54	The Enriched Opportunities Programme (EOP)	SLR	Group based	Remedial	Improvement	1
55	Specialist health and social care team	SLR	Group based	Remedial	Improvement	2
56	Peaceful Mind	SLR	One to one	Remedial	Major	0
57	"No name: family-mediated personalised activities"	SLR	Community based	Supportive	Incremental	0
58	No name: Indoor gardening programme	SLR	Community based	Remedial	Incremental	0
59	Active Mentoring	SLR	Community based	Remedial	Improvement	0
60	No name: Cognitive Behavioral Therapy (CBT)	SLR	One to one	Supportive	Improvement	0
61	No name: Physical and leisure activity programme	SLR	Group based	Remedial	Incremental	0



## Appendix

62	No name: Videoconferencing programme	SLR	One to one	Remedial	Major	2
63	Water Club	SLR	Group based	Preventative	Incremental	1
64	Badenoch & Strathspey Community Transport Company (BSCTC)	CTEL Website	Community based	Remedial	Incremental	2
65	Age Scotland "Still Waiting" Campaign	CTEL Website	Community based	Supportive	Incremental	1
66	Impacts Arts Crafts Café	CTEL Website	Community based	Remedial	Incremental	3
67	Equal Arts' Hen Power	CTEL Website	Community based	Remedial	Radical	1
68	Engage with Age (HOPE)	CTEL Website	Community based	Remedial	Incremental	1
69	Age UK County Durham's Come Eat Together project	CTEL Website	Group based	Supportive	Radical	1
70	North Yorkshire Trading Standards	CTEL Website	One to one	Remedial	Improvement	1
71	Joseph Rowntree Foundation's Can Do Guide	CTEL Website	Community based	Remedial	Incremental	1
72	Better Shed Than Dead	CTEL Website	Community based	Preventative	Radical	1
73	Yorkshire and Humber Social Prescribing Project	CTEL Website	One to one	Remedial	Incremental	0
74	Rochdale Circle	CTEL Website	One to one	Preventative	Incremental	1

## Appendix

75	LifeTime Warrington	CTEL Website	Group based	Preventative	Incremental	2
76	Age Cymru Gwynedd a Môn – Age Well Project	CTEL Website	Community based	Supportive	Incremental	2
77	Stoke-on-Trent Age Friendly City programme	CTEL Website	Community based	Supportive	Incremental	2
78	Casserole Club	CTEL Website	Community based	Supportive	Improvement	2
79	Contact the Elderly	CTEL Website	Group based	Remedial	Incremental	1
80	Rural Coffee Caravan Information Project	CTEL Website	Community based	Supportive	Incremental	1
81	Care Network Cambridgeshire	CTEL Website	Community based	Supportive	Incremental	2
82	Bristol Link Age	CTEL Website	Community based	Remedial	Incremental	3
83	Furry Tales	CTEL Website	Group based	Remedial	Radical	1
84	The Calthorpe Project	CTEL Website	Community based	Remedial	Incremental	1
85	The Second Half Centre	CTEL Website	Group based	Preventative	Major	2
86	21st Century Tea Party	CTEL Website	Community based	Remedial	Incremental	2
87	The Furzedown Project - Community Transport Scheme	CTEL Website	One to one	Remedial	Incremental	3

## Appendix

88	Counselling Directory	CTEL Website	One to one	Supportive	Incremental	4
89	Royal Borough of Kingston	CTEL Website	Community based	Preventative	Incremental	1
90	Surrey Heat's Walking Basketball	CTEL Website	Group based	Preventative	Incremental	1
91	DropBy	CTEL Website	Community based	Remedial	Major	5
92	Bredndon Clubs	CTEL Website	Group based	Preventative	Incremental	1
93	Adur & Worthing Wellbeing	CTEL Website	One to one	Supportive	Incremental	2
94	Dorset Wayfinders	CTEL Website	One to one	Supportive	Incremental	1
95	Southwest Wellbeing Programme	CTEL Website	Community based	Remedial	Incremental	0
96	Project Equinox	CTEL Website	Community based	Preventative	Radical	1
97	Breaking the spell of loneliness	Twitter	Community based	Preventative	Radical	4
98	Stuart Halbert Elderberries Drop In Centre	Twitter	Community based	Remedial	Incremental	1
99	Reconnections	Twitter	One to one	Remedial	Incremental	2
100	Breathe Life	Twitter	One to one	Remedial	Radical	3
101	Voyage	Twitter	Group based	Remedial	Incremental	1
102	For Disability Mobility Bus (FDM)	Twitter	Community based	Supportive	Improvement	1

## Appendix

103	Walking Football (Manchester)	Twitter	Group based	Preventative	Incremental	1
104	Reading Friends	Twitter	Group based	Remedial	Incremental	1
105	The People Walker	Twitter	One to one	Supportive	Improvement	1
106	Finding Your Funny: Discover Standup Comedy	Twitter	Group based	Supportive	Incremental	4
107	Older Women's Cohousing (OWCH)	Twitter	Community based	Preventative	Incremental	1
108	Shared Lives	Twitter	One to one	Remedial	Radical	1
109	Chat Mats	Twitter	One to one	Supportive	Radical	1
110	Green Prescribing	Twitter	Group based	Remedial	Incremental	1
111	Call & Check	Twitter	Community based	Remedial	Incremental	1
112	Silverline	Twitter	One to one	Remedial	Incremental	2
113	Reach Out	Twitter	Community based	Remedial	Incremental	1
114	Jewish Care	Twitter	One to one	Remedial	Incremental	1
115	Association of Jewish Refugees (Computer Help Project)	Twitter	One to one	Supportive	Major	4
116	Good Company	Twitter	One to one	Remedial	Improvement	1
117	Friendship Lunches	Twitter	Group based	Remedial	Incremental	1
118	Homeshare Oxford	Twitter	One to one	Remedial	Radical	1
119	Time to Shine, Leeds	Twitter	Community based	Remedial	Major	3
120	Every Visit Counts	Twitter	Community based	Remedial	Incremental	2

## Appendix

121	Know My Neighbour, Brighton	Twitter	Community based	Remedial	Incremental	1
122	Man on the Moon Christmas Advert	Twitter	Community based	Remedial	Radical	1
123	Vintage Vibes	Twitter	One to one	Remedial	Improvement	1
124	Silver Stories	Twitter	One to one	Remedial	Radical	0
125	Writing Back, Leeds	Twitter	One to one	Remedial	Radical	1
126	Get Connected	Twitter	Community based	Supportive	Incremental	1
127	Pepper	Twitter	One to one	Remedial	Major	4
128	North London Cares	Twitter	Community based	Supportive	Incremental	1
129	Manchester Children's Book Festival	Twitter	One to one	Preventative	Radical	1
130	Buddy Hub	Twitter	Group based	Remedial	Incremental	1
131	Link Up	Twitter	Community based	Supportive	Incremental	1
132	Newquay Pathfinder	Twitter	One to one	Remedial	Improvement	1
133	Brightlife Social Prescribing	Twitter	One to one	Supportive	Incremental	1
134	Spice Time Credits	Twitter	Community based	Supportive	Radical	1
135	The Sporting Memories	Twitter	Group based	Remedial	Incremental	1
136	Magic Me Arts	Twitter	Group based	Remedial	Incremental	1
137	The Age of Loneliness documentary	Twitter	Community based	Supportive	Radical	1
138	British Penpals	Twitter	One to one	Remedial	Improvement	1
139	Our Loneliness Guide (whentheygrowolder.co.uk)	Twitter	Community based	Supportive	Incremental	3

## Appendix

140	Community Christmas	Twitter	Community based	Remedial	Incremental	1
141	Friends of the Elderly (Befriending)	Twitter	One to one	Remedial	Improvement	1
142	Community Network	Twitter	One to one	Remedial	Improvement	4
143	Age UK (Befriending)	Twitter	One to one	Remedial	Improvement	1
144	Friends of the Elderly (Christmas gift guide)	Twitter	Community based	Remedial	Radical	1
145	Independent Age (Befriending)	Twitter	One to one	Remedial	Improvement	1
146	Silver Robin	Twitter	Community based	Remedial	Incremental	3
147	PJ's Pals	Twitter	One to one	Remedial	Improvement	0
148	Treasure House	Twitter	Group based	Remedial	Incremental	1
149	International Learning Center	Twitter	Group based	Remedial	Radical	1
150	Stand Together	Twitter	Group based	Remedial	Incremental	1
151	Chorlton Good Neighbours	Twitter	Community based	Remedial	Incremental	1
152	Prime 75+	Twitter	One to one	Remedial	Incremental	1
153	Bristol LinkAge FlashMob	Twitter	Group based	Supportive	Radical	2
154	Old School	Twitter	Group based	Remedial	Radical	2
155	Royal Voluntary Service Grandfest	Twitter	Community based	Preventative	Radical	1
156	Rural Coffee Caravan	Twitter	Community based	Remedial	Incremental	1
157	The Community Library Service	Twitter	One to one	Supportive	Incremental	1

## Appendix

158	Active Online	Other Sources	One to one	Preventative	Major	3
159	Brendoncare clubs	Other Sources	Group based	Preventative	Incremental	1
160	Call in Time	Other Sources	One to one	Remedial	Incremental	1
161	Community Wellbeing Practices	Other Sources	One to one	Supportive	Incremental	0
162	Culture Champions, Manchester	Other Sources	Community based	Remedial	Radical	1
163	Dementia Friendship Scheme	Other Sources	One to one	Remedial	Improvement	0
164	Dorset Befriending Services	Other Sources	One to one	Remedial	Improvement	0
165	Fit for Future	Other Sources	One to one	Remedial	Improvement	1
166	Leeds Seniors Networks	Other Sources	Group based	Remedial	Major	3
167	Living Well	Other Sources	Community based	Remedial	Incremental	1
168	New Beginnings	Other Sources	One to one	Remedial	Incremental	1
169	Open Age	Other Sources	Group based	Remedial	Incremental	2
170	Opening Doors	Other Sources	One to one	Remedial	Improvement	1
171	Rotherham Social Prescribing Scheme	Other Sources	One to one	Remedial	Incremental	1

## Appendix

172	Shopping Service	Other Sources	Group based	Preventative	Incremental	1
173	Time for Life (TfL)	Other Sources	Community based	Remedial	Incremental	1
174	Touchstones	Other Sources	Community based	Remedial	Major	2
175	Village and Community Agents	Other Sources	One to one	Supportive	Incremental	1
176	TRIL: Building Bridges	Other Sources	Group based	Remedial	Incremental	3
177	The Good Gym	Other Sources	Community based	Preventative	Radical	3
178	Mindings	Other Sources	One to one	Remedial	Major	4
179	Speaking Exchange	Other Sources	One to one	Remedial	Radical	3
180	Devon Community	Other Sources	One to one	Remedial	Improvement	1
181	Upstream	Other Sources	Community based	Remedial	Incremental	1
182	Nubian Life	Other Sources	Community based	Remedial	Major	2
183	Sefton Partnership for Older Citizens (SPOC)	Other Sources	Group based	Preventative	Incremental	1
184	Castlepoint Association of Voluntary Services	Other Sources	Community based	Remedial	Incremental	1
185	London Circle	Other Sources	Group based	Remedial	Incremental	0



## Appendix

186	Springboard	Other Sources	One to one	Supportive	Incremental	1
187	Healthy Ardwick	Other Sources	One to one	Remedial	Improvement	0
188	Craft Café	Other Sources	Group based	Preventative	Incremental	1
189	Social Care Direct	Other Sources	One to one	Preventative	Incremental	1
190	Well Aware Website	Other Sources	One to one	Supportive	Incremental	3
191	Phone a friend	Other Sources	One to one	Remedial	Improvement	1
192	NE Lincolnshire Older People's Health and Wellbeing Programme	Other Sources	Group based	Remedial	Incremental	1
193	Be Active	Other Sources	Group based	Preventative	Incremental	1
194	Speakset	Other Sources	One to one	Supportive	Major	4
195	School in the cloud	Other Sources	One to one	Preventative	Radical	6
196	Sideboard	Other Sources	One to one	Supportive	Major	3

Table 22: Characteristics of loneliness interventions

## Pattern Analysis Template

The following is a screenshot of the online template that was developed and used to log all interventions found during the preliminary coding (Chapter 1).

Loneliness Intervention Patterns	
Form description	
<b>What's it called?</b> Name of the Intervention <input type="text"/>	<b>What is the core problem this intervention identifies and targets?</b> <input type="text"/>
<b>Who made it?</b> Name of the creator(s) <input type="text"/>	<b>What is the solution suggested by this intervention?</b> Think of these questions in terms of ideology and not just the practicality of the solution. <input type="text"/>
<b>Target Age Group?</b> <input type="text"/>	<b>Has anyone measured impact? How?</b> <input type="text"/>
<b>Academic Reference (APA)</b> <input type="text"/>	<b>Is it similar or related to some other intervention?</b> <input type="text"/>
<b>Where is this intervention based?</b> Name all geographies starting with where it originated <input type="text"/>	<b>How?</b> Elaborate on the previous question as the relation might be an indirect one or Manzini style. <input type="text"/>
<b>What does it do?</b> A brief description of how it works <input type="text"/>	<b>What level does it work on?</b> Individual / Group? <input type="text"/>
<b>What is its core philosophy?</b> Think about what is at the heart of this intervention <input type="text"/>	<b>How does it find lonely people?</b> Does it reach out to them? Do they Reach out to it? How does that happen? <input type="text"/>
<b>Can it be linked to a Design Movement?</b> Socian Innovation etc. Look for keywords in papers <input type="text"/>	<b>Keywords associated with this intervention</b> <input type="text"/>
	<b>Additional Comments</b> <input type="text"/>

## Appendix

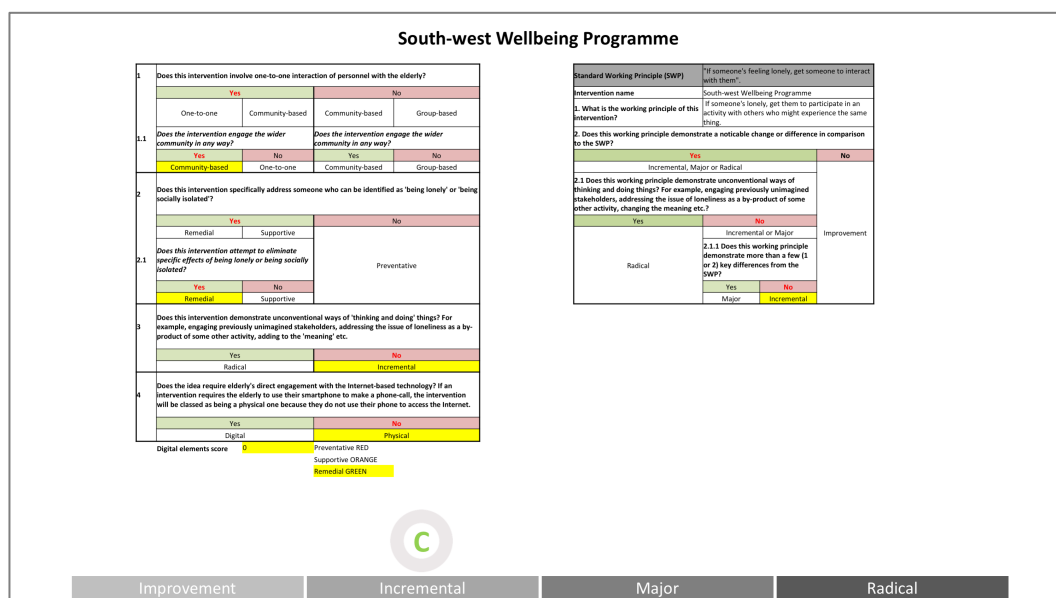
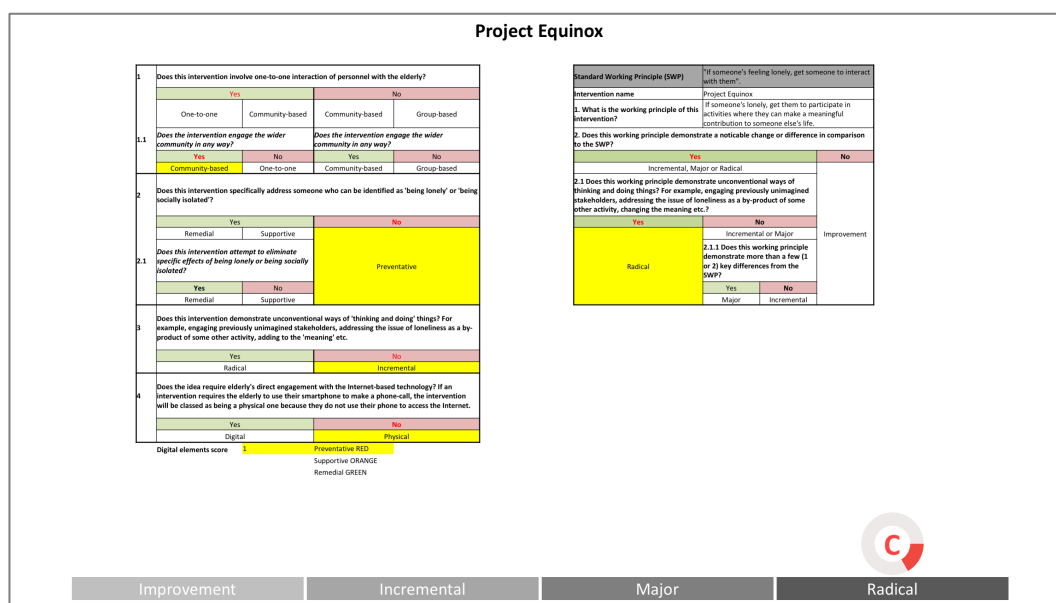
### Pattern Analysis – logged interventions

The following is a screenshot of the log showing responses to the questions asked in the pattern analysis template presented above.

	A	B	C	D	E	F	G	H	I	J	K
1	Timestamp	What's it called?	Who made it?	Academic Reference (APA)	Target Age Group?	Where is this intervention based?	What does it do?	What is its core philosophy?	Can it be linked to a Design Movement?	What is the core problem this intervention identifies and targets?	What is the solution suggested by this intervention?
2	7/15/2014 10:57:46	The Silver Line	Esther Rantzen	<a href="http://www.thesilverline.org">http://www.thesilverline.org</a>	No Age Restriction. Users mostly over 65 years	UK	Telephone helpline number. Offers information, friendship and advice. Links callers to local groups and services. Offers regular befriending calls. Protect and support those who are suffering neglect and abuse.	In a poll conducted to mark the national launch of The Silver Line on 25 November 2013, 9 out of 10 older people told researchers that "a chat on the phone" is the most helpful solution when they feel lonely but 1 in 4 older people say they never or seldom have someone to chat to on the phone.		Lack of "support" and "sign-posting" for the elderly	Using telephone's penetration to provide first point of contact support by offering range of services such as befriending, information on local support etc.
3	7/22/2014 15:32:35	PARO	Takanori Shibata of the Intelligent System Research Institute of Japan's AIST	Shibata, T., Mitsui, T., Wada, K., & Tanie, K. (2002). Subjective evaluation of seal robot: Paro-tabulation and analysis of questionnaire results. Journal of Robotics and Mechatronics, 14(1), 13-19.	All	Japan - Europe, USA	Replicates appearance of a baby Harp Seal. Responds to stroking, petting, movement and "coos". Electricity can be fed from the mouth using a charger plug.	To bring the 'known benefits' of animal therapy using advanced robotic technology.		Not easy to bring the benefits of petting in all medical care environments.	To develop an alternative technology-based that can be used in sensitive environments
							Works on VoIP (Voice over internet protocol) to facilitate communication with other users of the same platform (family members as well as strangers). Users can listen to daily broadcasts, make calls and write messages to				

## Pattern Analysis – coding interventions

The following images represent how each of the intervention was coded, and visualised using the coding strategy described in Section 4.7.1. Higher resolution versions can be provided upon request.



## Appendix

### Dorset Wayfinders

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	Community-based	Community-based	No
			Group-based	
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	Remedial	Supportive	No
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No	Yes	No
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No	Yes	No
	Radical	Incremental	Major	Radical
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No	Yes	No
	Digital	Preventative RED	Supportive ORANGE	Physical
Digital elements score 1				

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.	
Intervention name	Dorset Wayfinders	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement

Incremental

Major

Radical

### Adur & Worthing Wellbeing

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	Community-based	Community-based	No
			Group-based	
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	Remedial	Supportive	No
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No	Yes	No
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No	Yes	No
	Radical	Incremental	Major	Radical
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No	Yes	No
	Digital	Preventative RED	Supportive ORANGE	Physical
Digital elements score 2				

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.	
Intervention name	Adur & Worthing Wellbeing	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement

Incremental

Major

Radical

## Brendoncare Clubs

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Brendoncare Clubs
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

## DropBy

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

## Appendix

### Surrey Heat's Walking Basketball

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
1 Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them."	
Intervention name		Surrey Heat's Walking Basketball	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes No	
Radical		Major Incremental	
		Improvement	



Improvement

Incremental

Major

Radical

### Royal Borough of Kingston

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
1 Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them."	
Intervention name		Royal Borough of Kingston	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes No	
Radical		Major Incremental	
		Improvement	



Improvement

Incremental

Major

Radical

## Appendix

### Counselling Directory

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
		Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
	Digital elements score	8	Preventative RED Supportive ORANGE Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Counselling Directory
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

### The Furzedown Project - Community Transport Scheme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
		Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
	Digital elements score	8	Preventative RED Supportive ORANGE Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	The Furzedown Project - Community Transport Scheme
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical



## 21st Century Tea Dance

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?			
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	21 <sup>st</sup> Century Tea Dance
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes No
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes No
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes No
	Major Incremental

## The Second Half Centre

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?			
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	The Second Half Centre
1. What is the working principle of this intervention?	If someone's lonely, they need various kinds of support (intrinsic and extrinsic) - a cluster of interventions.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes No
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes No
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes No
	Major Incremental

## The Calthorpe Project

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?			
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
1 Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."	
Intervention name	The Calthorpe Project	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement

Incremental

Major

Radical

## Furry Tales

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?			
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
1 Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."	
Intervention name	Furry Tales	
1. What is the working principle of this intervention?	If someone's lonely, introduce benefits of pet therapy and get people to interact around the topic of animal care.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement

Incremental

Major

Radical

## Appendix

### Bristol Link Age

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them"	
Intervention name		Bristol Link Age	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	



Improvement

Incremental

Major

Radical

### Care Network Cambridgeshire

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them"	
Intervention name		Care Network Cambridgeshire	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	



Improvement

Incremental

Major

Radical

## Appendix

### Rural Coffee Caravan Information Project

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
1 Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them"	
Intervention name		Rural Coffee Caravan Information Project	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		Major	
		Incremental	



Improvement

Incremental

Major

Radical

### Contact the Elderly

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
1 Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them"	
Intervention name		Contact the Elderly	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		Major	
		Incremental	



Improvement

Incremental

Major

Radical

## Appendix

### Casserole Club

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them."
Intervention name		Casserole Club
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes
		Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc?		Yes
		Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes
		Major
		Improvement

### Stoke-on-Trent Age Friendly City programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them."
Intervention name		Stoke-on-Trent Age Friendly City programme
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes
		Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc?		Yes
		Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes
		Major
		Improvement

## Appendix

### Age Cymru Gwynedd a Môn - Age Well Project

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 2 Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them"
Intervention name		Age Cymru Gwynedd a Môn - Age Well Project
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		
Yes	No	
Incremental, Major or Radical		
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		
Yes	No	
Incremental or Major		Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		
Yes	No	
Major		Incremental



Improvement

Incremental

Major

Radical

### LifeTime Warrington

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 2 Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them"
Intervention name		LifeTime Warrington
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		
Yes	No	
Incremental, Major or Radical		
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		
Yes	No	
Incremental or Major		Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		
Yes	No	
Major		Incremental



Improvement

Incremental

Major

Radical

## Appendix

### Rochdale Circle

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
1 Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them."	
Intervention name		Rochdale Circle	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc?		Yes	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		Major	
		Incremental	
		Improvement	



Improvement

Incremental

Major

Radical

### Yorkshire and Humber Social Prescribing Project

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
2 Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them."	
Intervention name		Yorkshire and Humber Social Prescribing Project	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc?		Yes	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		Major	
		Incremental	
		Improvement	



Improvement

Incremental

Major

Radical

## Appendix

### Better Shed Than Dead

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		One-to-one	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score		1	Preventative RED Supportive ORANGE Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Better Shed Than Dead
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

### Joseph Rowntree Foundation's 'Can Do' Guide

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		One-to-one	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score		1	Preventative RED Supportive ORANGE Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Joseph Rowntree Foundation's 'Can Do' Guide
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major


Radical



## Appendix

### North Yorkshire Trading Standards

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	One-to-one	Community-based	Community-based	Group-based
Yes	No							
One-to-one	Community-based							
Community-based	Group-based							
1.1	Does the intervention engage the wider community in any way?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">One-to-one</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	Community-based	One-to-one	Community-based	Group-based
Yes	No							
Community-based	One-to-one							
Community-based	Group-based							
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Remedial	Preventative
Yes	No							
Remedial	Supportive							
Remedial	Preventative							
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> </table>	Yes	No	Remedial	Supportive		
Yes	No							
Remedial	Supportive							
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Digital	Incremental		
Yes	No							
Digital	Incremental							
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Physical</td> </tr> </table>	Yes	No	Digital	Physical		
Yes	No							
Digital	Physical							
Digital elements score		<div style="display: flex; justify-content: space-between;"> <span>Preventative RED</span> <span>Supportive ORANGE</span> <span>Remedial GREEN</span> </div>						



Improvement

Incremental


Major

Radical

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.				
Intervention name	North Yorkshire Trading Standards				
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them.				
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Incremental, Major or Radical</td> <td style="text-align: center;">Improvement</td> </tr> </table>	Yes	No	Incremental, Major or Radical	Improvement
Yes	No				
Incremental, Major or Radical	Improvement				
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Incremental or Major</td> <td style="text-align: center;">Improvement</td> </tr> </table>	Yes	No	Incremental or Major	Improvement
Yes	No				
Incremental or Major	Improvement				
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Major</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Major	Incremental
Yes	No				
Major	Incremental				

### Age UK County Durham's Come Eat Together Project

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	One-to-one	Community-based	Community-based	Group-based
Yes	No							
One-to-one	Community-based							
Community-based	Group-based							
1.1	Does the intervention engage the wider community in any way?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">One-to-one</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	Community-based	One-to-one	Community-based	Group-based
Yes	No							
Community-based	One-to-one							
Community-based	Group-based							
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Remedial	Preventative
Yes	No							
Remedial	Supportive							
Remedial	Preventative							
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> </table>	Yes	No	Remedial	Supportive		
Yes	No							
Remedial	Supportive							
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Digital	Incremental		
Yes	No							
Digital	Incremental							
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Physical</td> </tr> </table>	Yes	No	Digital	Physical		
Yes	No							
Digital	Physical							
Digital elements score		<div style="display: flex; justify-content: space-between;"> <span>Preventative RED</span> <span>Supportive ORANGE</span> <span>Remedial GREEN</span> </div>						



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.				
Intervention name	Age UK County Durham's Come Eat Together Project				
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and upskill them so they can explore options for help and other relevant services.				
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Incremental, Major or Radical</td> <td style="text-align: center;">Improvement</td> </tr> </table>	Yes	No	Incremental, Major or Radical	Improvement
Yes	No				
Incremental, Major or Radical	Improvement				
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Incremental or Major</td> <td style="text-align: center;">Improvement</td> </tr> </table>	Yes	No	Incremental or Major	Improvement
Yes	No				
Incremental or Major	Improvement				
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Major</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Major	Incremental
Yes	No				
Major	Incremental				

## Engage with Age - HOPE (Hubs for Older People's Engagement)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
1 Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them."	
Intervention name		Engage with Age - HOPE	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	

## Equal Arts' Hen Power Project

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score				
1 Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

## Appendix

### Impact Arts Craft Cafe

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Major
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Impact Arts Craft Cafe
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

### Age Scotland "Still Waiting" Campaign

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Major
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Age Scotland "Still Waiting" Campaign
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

## Appendix

### Badenoch & Strathspey Community Transport Company (BSCTC)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."	
Intervention name	Badenoch & Strathspey Community Transport Company (BSCTC)	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement

Incremental

Major

Radical

### Sideboard

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 3				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."	
Intervention name	Sideboard	
1. What is the working principle of this intervention?	If someone's lonely, get them to use alternate ways of interacting with others	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement

Incremental

Major

Radical

## Appendix

### School in the cloud

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 6				
Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them!"	
Intervention name		School in the Cloud	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		Major	
		Incremental	

Improvement

Incremental

Major

Radical

### Speakset

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 4				
Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them!"	
Intervention name		Speakset	
1. What is the working principle of this intervention?		If someone's lonely, get them to use alternate ways of interacting with others	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		Major	
		Incremental	

Improvement

Incremental

Major

Radical

## Appendix

### Be Active

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1			
Preventative RED			
Supportive ORANGE			
Remedial GREEN			

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.
Intervention name	Be Active
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
Radical	Incremental or Major
	Major
	Incremental



Improvement

Incremental

Major

Radical

### North East Lincolnshire Older People's Health and Wellbeing Programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1			
Preventative RED			
Supportive ORANGE			
Remedial GREEN			

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.
Intervention name	North East Lincolnshire Older People's Health and Wellbeing Programme
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
Radical	Incremental or Major
	Major
	Incremental



Improvement

Incremental

Major

Radical

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Phone a friend

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Phone a friend	
1. What is the working principle of this intervention?	If someone's feeling lonely, get someone to interact with them.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental	Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Radical
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental

Improvement
Incremental
Major
Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 3				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Well Aware

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Well Aware Website	
1. What is the working principle of this intervention?	If someone's feeling lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental	Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Radical
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental

Improvement
Incremental
Major
Radical

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Social Care Direct

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them!"	
Intervention name	Social Care Direct	
5. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental

Improvement

Incremental

Major

Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Craft Café

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them!"	
Intervention name	Craft Café	
2. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental

Improvement

Incremental

Major

Radical



## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Healthy Ardwick

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		Healthy Ardwick	
1. What is the working principle of this intervention?		"If someone's feeling lonely, get someone to interact with them".	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	
		Improvement	

Improvement

Incremental

Major

Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Springboard

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		Springboard	
1. What is the working principle of this intervention?		"If someone's feeling lonely, get someone to interact with them and signpost help and services."	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	
		Improvement	

Improvement

Incremental

Major

Radical

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### London Circle

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		London Circle	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	

Improvement
Incremental
Major
Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Castlepoint Association of Voluntary Services


Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		Castlepoint Association of Voluntary Services	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	

Improvement
Incremental
Major
Radical

## Appendix

**Sefton Partnership for Older Citizens (SPOC)**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				




Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."	
Intervention name	Sefton Partnership for Older Citizens (SPOC)	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental

**Nubian Life**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				




Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."	
Intervention name	Nubian Life	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental

## Appendix

**Upstream**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				




Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Upstream
5. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Improvement

**Devon Community**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				




Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Devon Community
5. What is the working principle of this intervention?	If someone's feeling lonely, get someone to interact with them".
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Improvement

## Appendix

### Speaking Exchange

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 3				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement


Incremental

Major

Radical

### Mindings

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 4				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 3				
Preventative RED Supportive ORANGE Remedial GREEN				

### The Good Gym

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	The Good Gym	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental
	Improvement	

Improvement

Incremental

Major

Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 3				
Preventative RED Supportive ORANGE Remedial GREEN				

### TRIL Building Bridges

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	TRIL Building Bridges	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental
	Improvement	

Improvement

Incremental

Major

Radical

## Appendix

### Village and Community Agents

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Village and Community Agents
5. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

### Touchstones

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Improvement
Incremental
Major
Radical


Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Touchstones
2. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and upskill them so they can explore options for help and other relevant services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Time for Life (TfL)

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Time for Life (TfL)	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental




Improvement
Incremental
Major
Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Shopping Service, Kensington and Chelsea

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Shopping Service, Kensington and Chelsea	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement
Incremental
Major
Radical



## Appendix

### Rotherham Social Prescribing

<b>1</b>	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
<b>1.1</b>	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
<b>2</b>	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
<b>2.1</b>	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
<b>3</b>	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
<b>4</b>	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED Supportive ORANGE Remedial GREEN				

Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them"
Intervention name	Rotherham Social Prescribing
5. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Improvement

### Opening Doors London

<b>1</b>	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
<b>1.1</b>	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
<b>2</b>	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
<b>2.1</b>	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
<b>3</b>	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
<b>4</b>	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED Supportive ORANGE Remedial GREEN				

Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them"
Intervention name	Opening Doors London
5. What is the working principle of this intervention?	If someone's feeling lonely, get someone to interact with them".
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Improvement

## Appendix

### Open Age

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 2		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Open Age
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
Radical	Incremental
	Improvement



Improvement

Incremental

Major

Radical

### New Beginnings

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	New Beginnings
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them in a mentoring position.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
Radical	Incremental
	Improvement



Improvement

Incremental

Major


Radical

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Living Well

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."	
Intervention name	Living Well	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental




Improvement
Incremental
Major
Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 3				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Leeds Senior Network

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."	
Intervention name	Leeds Senior Network	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support them so they can explore options for help and other relevant services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental




Improvement
Incremental
Major
Radical

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Fit For The Future

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		Fit for the future	
1. What is the working principle of this intervention?		"If someone's feeling lonely, get someone to interact with them".	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	
		Improvement	



Improvement

Incremental


Major

Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Dorset Befriending Service

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		Dorset Befriending Service	
1. What is the working principle of this intervention?		"If someone's feeling lonely, get someone to interact with them".	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	
		Improvement	



Improvement

Incremental

Major

Radical

## Appendix

### Dementia Friendship Scheme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	One-to-one	Community-based	Community-based	Group-based				
Yes	No											
One-to-one	Community-based											
Community-based	Group-based											
1.1	Does the intervention engage the wider community in any way?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">One-to-one</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	Community-based	One-to-one	One-to-one	Community-based	Community-based	Group-based		
Yes	No											
Community-based	One-to-one											
One-to-one	Community-based											
Community-based	Group-based											
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative				
Yes	No											
Remedial	Supportive											
Supportive	Preventative											
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative				
Yes	No											
Remedial	Supportive											
Supportive	Preventative											
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Radical</td> <td style="text-align: center;">Incremental</td> </tr> <tr> <td style="text-align: center;">Incremental</td> <td style="text-align: center;">Major</td> </tr> </table>	Yes	No	Radical	Incremental	Incremental	Major				
Yes	No											
Radical	Incremental											
Incremental	Major											
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Physical</td> </tr> <tr> <td style="text-align: center;">Physical</td> <td style="text-align: center;">Preventative RED</td> </tr> <tr> <td style="text-align: center;">Preventative RED</td> <td style="text-align: center;">Supportive ORANGE</td> </tr> <tr> <td style="text-align: center;">Supportive ORANGE</td> <td style="text-align: center;">Remedial GREEN</td> </tr> </table>	Yes	No	Digital	Physical	Physical	Preventative RED	Preventative RED	Supportive ORANGE	Supportive ORANGE	Remedial GREEN
Yes	No											
Digital	Physical											
Physical	Preventative RED											
Preventative RED	Supportive ORANGE											
Supportive ORANGE	Remedial GREEN											
Digital elements score 0												

Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.						
Intervention name	Dementia Friendship Scheme						
5. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them.						
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Incremental</td> <td style="text-align: center;">Major or Radical</td> </tr> <tr> <td style="text-align: center;">Major or Radical</td> <td style="text-align: center;">Improvement</td> </tr> </table>	Yes	No	Incremental	Major or Radical	Major or Radical	Improvement
Yes	No						
Incremental	Major or Radical						
Major or Radical	Improvement						
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Radical</td> <td style="text-align: center;">Incremental or Major</td> </tr> <tr> <td style="text-align: center;">Incremental or Major</td> <td style="text-align: center;">Improvement</td> </tr> </table>	Yes	No	Radical	Incremental or Major	Incremental or Major	Improvement
Yes	No						
Radical	Incremental or Major						
Incremental or Major	Improvement						
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Major</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Major	Incremental		
Yes	No						
Major	Incremental						

### Culture Champions, Manchester

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	One-to-one	Community-based	Community-based	Group-based				
Yes	No											
One-to-one	Community-based											
Community-based	Group-based											
1.1	Does the intervention engage the wider community in any way?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">One-to-one</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	Community-based	One-to-one	One-to-one	Community-based	Community-based	Group-based		
Yes	No											
Community-based	One-to-one											
One-to-one	Community-based											
Community-based	Group-based											
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative				
Yes	No											
Remedial	Supportive											
Supportive	Preventative											
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative				
Yes	No											
Remedial	Supportive											
Supportive	Preventative											
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Radical</td> <td style="text-align: center;">Incremental</td> </tr> <tr> <td style="text-align: center;">Incremental</td> <td style="text-align: center;">Major</td> </tr> </table>	Yes	No	Radical	Incremental	Incremental	Major				
Yes	No											
Radical	Incremental											
Incremental	Major											
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Physical</td> </tr> <tr> <td style="text-align: center;">Physical</td> <td style="text-align: center;">Preventative RED</td> </tr> <tr> <td style="text-align: center;">Preventative RED</td> <td style="text-align: center;">Supportive ORANGE</td> </tr> <tr> <td style="text-align: center;">Supportive ORANGE</td> <td style="text-align: center;">Remedial GREEN</td> </tr> </table>	Yes	No	Digital	Physical	Physical	Preventative RED	Preventative RED	Supportive ORANGE	Supportive ORANGE	Remedial GREEN
Yes	No											
Digital	Physical											
Physical	Preventative RED											
Preventative RED	Supportive ORANGE											
Supportive ORANGE	Remedial GREEN											
Digital elements score 1												


Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.						
Intervention name	Culture Champions, Manchester						
5. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.						
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Incremental</td> <td style="text-align: center;">Major or Radical</td> </tr> <tr> <td style="text-align: center;">Major or Radical</td> <td style="text-align: center;">Improvement</td> </tr> </table>	Yes	No	Incremental	Major or Radical	Major or Radical	Improvement
Yes	No						
Incremental	Major or Radical						
Major or Radical	Improvement						
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Radical</td> <td style="text-align: center;">Incremental or Major</td> </tr> <tr> <td style="text-align: center;">Incremental or Major</td> <td style="text-align: center;">Improvement</td> </tr> </table>	Yes	No	Radical	Incremental or Major	Incremental or Major	Improvement
Yes	No						
Radical	Incremental or Major						
Incremental or Major	Improvement						
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Major</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Major	Incremental		
Yes	No						
Major	Incremental						

## Appendix

### Community Wellbeing Practices, Halton

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental


Major

Radical

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.
Intervention name	Community Wellbeing Practices, Halton
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	No
	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Incremental or Major
	Radical
	Yes
	Major
	Incremental

### Call in Time

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.
Intervention name	Call in Time
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	No
	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Incremental or Major
	Radical
	Yes
	Major
	Incremental

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
	Digital elements score 1			
			Preventative RED	
			Supportive ORANGE	
			Remedial GREEN	

### Brendoncare Clubs

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		Brendoncare Clubs	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	

Improvement

Incremental

Major

Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
	Digital elements score 3			
			Preventative RED	
			Supportive ORANGE	
			Remedial GREEN	

### Active Online

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		Active Online	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and upskill them so they can explore options for help and other relevant services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	

Improvement

Incremental


Major

Radical

## Appendix

### The Community Library Service

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				




Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them"
Intervention name	The Community Library Service
5. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	No
	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	No
	Yes
	Major
	Incremental

### Rural Coffee Caravan

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them"
Intervention name	Rural Coffee Caravan
5. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	No
	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	No
	Yes
	Major
	Incremental



## Appendix

### Royal Voluntary Service Grandfest

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		One-to-one	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1			
Preventative RED			
Supportive ORANGE			
Remedial GREEN			

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Royal Voluntary Service Grandfest
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
2.1	Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?
	Yes
2.1.1	Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?
	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

### Old School

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		One-to-one	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 2			
Preventative RED			
Supportive ORANGE			
Remedial GREEN			

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Old School
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
2.1	Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?
	Yes
2.1.1	Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?
	Yes
	Major
	Incremental



Improvement

Incremental


Major

Radical

## Appendix

**Bristol LinkAge Flashmob**


1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement
Incremental
Major
Radical

**Prime75+**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				




Improvement
Incremental
Major
Radical

## Appendix

### Chorlton Good Neighbours

<b>1</b>	Does this intervention involve one-to-one interaction of personnel with the elderly?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	One-to-one	Community-based	Community-based	Group-based
Yes	No							
One-to-one	Community-based							
Community-based	Group-based							
<b>1.1</b>	Does the intervention engage the wider community in any way?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	Community-based	Group-based		
Yes	No							
Community-based	Group-based							
<b>2</b>	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> </table>	Yes	No	Remedial	Supportive		
Yes	No							
Remedial	Supportive							
<b>2.1</b>	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> </table>	Yes	No	Remedial	Supportive		
Yes	No							
Remedial	Supportive							
<b>3</b>	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Radical</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Radical	Incremental		
Yes	No							
Radical	Incremental							
<b>4</b>	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Physical</td> </tr> </table>	Yes	No	Digital	Physical		
Yes	No							
Digital	Physical							
<b>Digital elements score</b> <span style="color: green;">1</span> Preventative RED <span style="color: orange;">Supportive ORANGE</span> <span style="color: green;">Remedial GREEN</span>								



Improvement

Incremental


Major

Radical

<b>Standard Working Principle (SWP)</b>	If someone's feeling lonely, get someone to interact with them.				
Intervention name	Chorlton Good Neighbours				
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.				
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Incremental, Major or Radical</td> <td></td> </tr> </table>	Yes	No	Incremental, Major or Radical	
Yes	No				
Incremental, Major or Radical					
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Incremental, Major or Radical</td> <td></td> </tr> </table>	Yes	No	Incremental, Major or Radical	
Yes	No				
Incremental, Major or Radical					
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Major</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Major	Incremental
Yes	No				
Major	Incremental				

### Stand Together

<b>1</b>	Does this intervention involve one-to-one interaction of personnel with the elderly?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	One-to-one	Community-based	Community-based	Group-based
Yes	No							
One-to-one	Community-based							
Community-based	Group-based							
<b>1.1</b>	Does the intervention engage the wider community in any way?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	Community-based	Group-based		
Yes	No							
Community-based	Group-based							
<b>2</b>	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> </table>	Yes	No	Remedial	Supportive		
Yes	No							
Remedial	Supportive							
<b>2.1</b>	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> </table>	Yes	No	Remedial	Supportive		
Yes	No							
Remedial	Supportive							
<b>3</b>	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Radical</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Radical	Incremental		
Yes	No							
Radical	Incremental							
<b>4</b>	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Physical</td> </tr> </table>	Yes	No	Digital	Physical		
Yes	No							
Digital	Physical							
<b>Digital elements score</b> <span style="color: green;">1</span> Preventative RED <span style="color: orange;">Supportive ORANGE</span> <span style="color: green;">Remedial GREEN</span>								



Improvement

Incremental

Major

Radical

<b>Standard Working Principle (SWP)</b>	If someone's feeling lonely, get someone to interact with them.				
Intervention name	Stand Together				
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.				
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Incremental, Major or Radical</td> <td></td> </tr> </table>	Yes	No	Incremental, Major or Radical	
Yes	No				
Incremental, Major or Radical					
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Incremental, Major or Radical</td> <td></td> </tr> </table>	Yes	No	Incremental, Major or Radical	
Yes	No				
Incremental, Major or Radical					
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Yes</td> <td style="width: 50%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Major</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Major	Incremental
Yes	No				
Major	Incremental				

## Appendix

### International Learning Center

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	International Learning Center
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

### Treasure House

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Treasure House
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

## Appendix

### PJ's Pals

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	One-to-one	Group-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score 0		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	PJ's Pals
1. What is the working principle of this intervention?	"If someone's feeling lonely, get someone to interact with them."
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

### Silver Robin

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	One-to-one	Group-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score 3		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Silver Robin
1. What is the working principle of this intervention?	"If someone's feeling lonely, get them to participate in an activity with others who might experience the same thing."
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

## Independent Age (Befriending)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
	Digital elements score 1	Preventative RED	Supportive ORANGE
			Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Independent Age (Befriending)
1. What is the working principle of this intervention?	"If someone's feeling lonely, get someone to interact with them".
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

## Friends of the elderly (Christmas gift guide)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
	Digital elements score 1	Preventative RED	Supportive ORANGE
			Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Friends of the Elderly (Christmas gift guide)
1. What is the working principle of this intervention?	"If someone's feeling lonely, get someone to interact with them".
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major


Radical

## Appendix


1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Remedial		Supportive	
	Yes		No	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Remedial		Supportive	
	Yes		No	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
	Digital elements score 1			
			Preventative RED	
			Supportive ORANGE	
			Remedial GREEN	

### Age UK (Befriending)


Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Age UK (Befriending)	
1. What is the working principle of this intervention?	"If someone's feeling lonely, get someone to interact with them".	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental




Improvement



Incremental



Major




Radical


1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Remedial		Supportive	
	Yes		No	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Remedial		Supportive	
	Yes		No	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
	Digital elements score 4			
			Preventative RED	
			Supportive ORANGE	
			Remedial GREEN	

### Community Network


Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Community Network	
1. What is the working principle of this intervention?	"If someone's feeling lonely, get someone to interact with them".	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental




Improvement



Incremental



Major




Radical

## Appendix

### Friends of the Elderly (Befriending)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				




Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Friends of the Elderly (Befriending)	
1. What is the working principle of this intervention?	"If someone's feeling lonely, get someone to interact with them".	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	Incremental	Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	No	
	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	No	
	Yes	No
	Major	Incremental

### Community Christmas

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement
Incremental
Major
Radical


Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Community Christmas	
1. What is the working principle of this intervention?	"If someone's feeling lonely, get someone to interact with them and signpost help and services."	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	Incremental	Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	No	
	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	No	
	Yes	No
	Major	Incremental



## Appendix

**Our loneliness guide (whentheygrowolder.co.uk)**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 5				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental


Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Our Loneliness Guide (whentheygrowolder.co.uk)
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Incremental or Major
	Radical
	Major
	Incremental

**British Penpals**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	British Penpals
1. What is the working principle of this intervention?	If someone's feeling lonely, get someone to interact with them".
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Incremental or Major
	Radical
	Major
	Incremental

## Appendix

### The Age of Loneliness Documentary

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one Community-based	Community-based Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Does the intervention engage the wider community in any way?	Yes	No
		Community-based One-to-one	Community-based Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial Supportive	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	The Age of Loneliness Documentary
1. What is the working principle of this intervention?	If someone's lonely, don't solely focus on them, but raise awareness in the whole community through a variety of channels.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major Incremental



Improvement

Incremental

Major

Radical

### Magic Me Arts

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one Community-based	Community-based Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Does the intervention engage the wider community in any way?	Yes	No
		Community-based One-to-one	Community-based Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial Supportive	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Magic Me Arts
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major Incremental



Improvement

Incremental

Major

Radical

## The Sporting Memories

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	The Sporting Memories
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

Improvement

## Spice Time Credits

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Spice Time Credits
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

Improvement



Radical




Radical

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Link Up

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Link Up	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental




Improvement
Incremental
Major
Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Buddy Hub

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Buddy Hub	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental




Improvement
Incremental
Major
Radical

## Appendix

### Manchester Children's Book Festival


1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Does the intervention engage the wider community in any way?		
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Remedial	Supportive	No	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Preventative		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	No		
	Digital	Physical		
Digital elements score 1 Preventative RED Supportive ORANGE Remedial GREEN				



Improvement
Incremental
Major
Radical

### North London Cares

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Does the intervention engage the wider community in any way?		
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Remedial	Supportive	No	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Preventative		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	No		
	Digital	Physical		
Digital elements score 1 Preventative RED Supportive ORANGE Remedial GREEN				




Improvement
Incremental
Major
Radical

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Remedial		Supportive	
	Yes		No	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Remedial		Supportive	
	Yes		No	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 4				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Pepper the Robot

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Pepper the Robot	
1. What is the working principle of this intervention?	"If someone's feeling lonely, get someone to interact with them".	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	
	Major	
Radical	Improvement	



Improvement

Incremental


Major

Radical

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Remedial		Supportive	
	Yes		No	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Remedial		Supportive	
	Yes		No	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 3				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Get Connected Week

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Get Connected Week	
1. What is the working principle of this intervention?	"If someone's feeling lonely, get someone to interact with them".	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	
	Major	
Radical	Improvement	



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)		If someone's feeling lonely, get someone to interact with them."	
Intervention name		Writing Back, Lack Leads	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.		
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No	
Incremental, Major or Radical			
3. Does this working principle demonstrate unconventional ways of thinking and doing things? For example, by addressing previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes	No	
Incremental or Major			
4. Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No	Improvement
Radical			



Radical

Standard Working Principle (SWP)		If someone's feeling lonely, get someone to interact with them."	
Intervention name		Silver Stories	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No	
	Incremental, Major or Radical		
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unengaged stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	No	No	
	Incremental or Major	Improve	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Radical	Yes	No



Radical



## Appendix

### Vintage Vibes

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Group-based	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Major
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Vintage Vibes
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

### Man on the Moon Christmas Advert

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Group-based	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Major
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Man on the Moon Christmas Advert
1. What is the working principle of this intervention?	If someone's lonely, don't solely focus on them, but raise awareness in the whole community through a variety of channels.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

## Appendix

### Know My Neighbour, Brighton

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	One-to-one	Community-based	Community-based	Group-based				
Yes	No											
One-to-one	Community-based											
Community-based	Group-based											
1.1	Does the intervention engage the wider community in any way?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">One-to-one</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	Community-based	One-to-one	One-to-one	Community-based	Community-based	Group-based		
Yes	No											
Community-based	One-to-one											
One-to-one	Community-based											
Community-based	Group-based											
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative				
Yes	No											
Remedial	Supportive											
Supportive	Preventative											
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative				
Yes	No											
Remedial	Supportive											
Supportive	Preventative											
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Radical</td> <td style="text-align: center;">Incremental</td> </tr> <tr> <td style="text-align: center;">Incremental</td> <td style="text-align: center;">Major</td> </tr> </table>	Yes	No	Radical	Incremental	Incremental	Major				
Yes	No											
Radical	Incremental											
Incremental	Major											
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Physical</td> </tr> <tr> <td style="text-align: center;">Physical</td> <td style="text-align: center;">Preventative RED</td> </tr> <tr> <td style="text-align: center;">Preventative RED</td> <td style="text-align: center;">Supportive ORANGE</td> </tr> <tr> <td style="text-align: center;">Supportive ORANGE</td> <td style="text-align: center;">Remedial GREEN</td> </tr> </table>	Yes	No	Digital	Physical	Physical	Preventative RED	Preventative RED	Supportive ORANGE	Supportive ORANGE	Remedial GREEN
Yes	No											
Digital	Physical											
Physical	Preventative RED											
Preventative RED	Supportive ORANGE											
Supportive ORANGE	Remedial GREEN											
Digital elements score 1												

Improvement

Incremental

Major

Radical

### Every Visit Counts

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	One-to-one	Community-based	Community-based	Group-based				
Yes	No											
One-to-one	Community-based											
Community-based	Group-based											
1.1	Does the intervention engage the wider community in any way?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">One-to-one</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	Community-based	One-to-one	One-to-one	Community-based	Community-based	Group-based		
Yes	No											
Community-based	One-to-one											
One-to-one	Community-based											
Community-based	Group-based											
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative				
Yes	No											
Remedial	Supportive											
Supportive	Preventative											
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative				
Yes	No											
Remedial	Supportive											
Supportive	Preventative											
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Radical</td> <td style="text-align: center;">Incremental</td> </tr> <tr> <td style="text-align: center;">Incremental</td> <td style="text-align: center;">Major</td> </tr> </table>	Yes	No	Radical	Incremental	Incremental	Major				
Yes	No											
Radical	Incremental											
Incremental	Major											
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Physical</td> </tr> <tr> <td style="text-align: center;">Physical</td> <td style="text-align: center;">Preventative RED</td> </tr> <tr> <td style="text-align: center;">Preventative RED</td> <td style="text-align: center;">Supportive ORANGE</td> </tr> <tr> <td style="text-align: center;">Supportive ORANGE</td> <td style="text-align: center;">Remedial GREEN</td> </tr> </table>	Yes	No	Digital	Physical	Physical	Preventative RED	Preventative RED	Supportive ORANGE	Supportive ORANGE	Remedial GREEN
Yes	No											
Digital	Physical											
Physical	Preventative RED											
Preventative RED	Supportive ORANGE											
Supportive ORANGE	Remedial GREEN											
Digital elements score 2												

Improvement

Incremental

Major

Radical

## Appendix

### Time to Shine Leeds

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	No
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes			
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 3		Preventative RED Supportive ORANGE Remedial GREEN		

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".		
Intervention name	Time to Shine, Leeds		
1. What is the working principle of this intervention?	If someone's lonely, provide them with various kinds of support (intrinsic and extrinsic) - a cluster of interventions.		
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No	
	Incremental, Major or Radical		
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes	No	
	Incremental or Major		
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No	
	Improvement		
Radical			



Improvement

Incremental

Major

Radical

### Homeshare Oxford

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No	
	Community-based	One-to-one	Community-based	No
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No	Preventative
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No	
	Digital		Physical	
Digital elements score 3		Preventative RED	Supportive ORANGE	Remedial GREEN

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		Homeshare Oxford	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	No
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.		Yes	No
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	No
		Major	Incremental



Improvement

Incremental

Major

Radical

## Appendix

### Friendship Lunches

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes			
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them"	
Intervention name		Friendship lunches	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?			
Yes		No	
Incremental, Major or Radical			
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?			
Yes		No	
Radical		Incremental or Major	
		2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	
		Yes	
		Major	
		Incremental	

Improvement

Incremental

Major

Radical

### Good Company

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes			
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them"	
Intervention name		Good Company	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?			
Yes		No	
Incremental, Major or Radical			
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?			
Yes		No	
Radical		Incremental or Major	
		2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	
		Yes	
		Major	
		Incremental	

Improvement

Incremental

Major

Radical

## Appendix

### Association of Jewish Refugees (computer help project)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	One-to-one	Community-based	Community-based	Group-based
Yes	No							
One-to-one	Community-based							
Community-based	Group-based							
1.1	Does the intervention engage the wider community in any way?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">One-to-one</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	Community-based	One-to-one	One-to-one	Group-based
Yes	No							
Community-based	One-to-one							
One-to-one	Group-based							
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative
Yes	No							
Remedial	Supportive							
Supportive	Preventative							
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative
Yes	No							
Remedial	Supportive							
Supportive	Preventative							
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Radical</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Radical	Incremental		
Yes	No							
Radical	Incremental							
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Physical</td> </tr> </table>	Yes	No	Digital	Physical		
Yes	No							
Digital	Physical							
Digital elements score 4		Preventative RED Supportive ORANGE Remedial GREEN						

Improvement

Incremental

Major

Radical

### Jewish Care (Befriending Service)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Community-based</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	One-to-one	Community-based	Community-based	Group-based
Yes	No							
One-to-one	Community-based							
Community-based	Group-based							
1.1	Does the intervention engage the wider community in any way?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Community-based</td> <td style="text-align: center;">One-to-one</td> </tr> <tr> <td style="text-align: center;">One-to-one</td> <td style="text-align: center;">Group-based</td> </tr> </table>	Yes	No	Community-based	One-to-one	One-to-one	Group-based
Yes	No							
Community-based	One-to-one							
One-to-one	Group-based							
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative
Yes	No							
Remedial	Supportive							
Supportive	Preventative							
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Remedial</td> <td style="text-align: center;">Supportive</td> </tr> <tr> <td style="text-align: center;">Supportive</td> <td style="text-align: center;">Preventative</td> </tr> </table>	Yes	No	Remedial	Supportive	Supportive	Preventative
Yes	No							
Remedial	Supportive							
Supportive	Preventative							
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Radical</td> <td style="text-align: center;">Incremental</td> </tr> </table>	Yes	No	Radical	Incremental		
Yes	No							
Radical	Incremental							
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Yes</td> <td style="width: 25%; text-align: center;">No</td> </tr> <tr> <td style="text-align: center;">Digital</td> <td style="text-align: center;">Physical</td> </tr> </table>	Yes	No	Digital	Physical		
Yes	No							
Digital	Physical							
Digital elements score 1		Preventative RED Supportive ORANGE Remedial GREEN						

Improvement

Incremental

Major

Radical

## Appendix

### Reach Out

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."	
Intervention name	Reach Out	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	
	Major	
	Incremental	
	Improvement	

### Silverline

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."	
Intervention name	Silverline	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	
	Major	
	Incremental	
	Improvement	

## Appendix

### Call & Check

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Call & Check	
5. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement

Incremental

Major

Radical

### Green Prescribing

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Green Prescribing	
2. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement

Incremental

Major

Radical

## Appendix

### Chat Mats

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one Community-based	Community-based Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Does the intervention engage the wider community in any way?	Yes	No
		Community-based One-to-one	Community-based Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial Supportive	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
	Digital elements score 1	Preventative RED	Supportive ORANGE
			Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Chat Mats
1. What is the working principle of this intervention?	If someone's lonely, don't solely focus on them, but raise awareness in the whole community through a variety of channels.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

### Shared Lives

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one Community-based	Community-based Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Does the intervention engage the wider community in any way?	Yes	No
		Community-based One-to-one	Community-based Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial Supportive	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
	Digital elements score 1	Preventative RED	Supportive ORANGE
			Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Shared Lives
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical



## Older Women's Cohousing (OWCH)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them!"
Intervention name	Older Women's Cohousing (OWCH)
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
Radical	Incremental or Major
	Major
	Incremental



Improvement

Incremental

Major

Radical

## Finding Your Funny: Discover Standup Comedy

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 4		Preventative RED	Supportive ORANGE
		Remedial GREEN	

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them!"
Intervention name	Finding Your Funny: Discover Standup Comedy
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
Radical	Incremental or Major
	Major
	Incremental



Improvement

Incremental

Major


Radical

## Appendix

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### The People Walker

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them!"	
Intervention name		The people walker	
5. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	
		Improvement	



Improvement

Incremental


Major

Radical


1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Reading Friends

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them!"	
Intervention name		Reading friends	
2. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	
		Improvement	



Improvement



Incremental

Major

Radical

## Appendix

### Walking Football

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.
Intervention name	Walking Football
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental
	Improvement

Improvement
Incremental
Major
Radical

### For Disability Mobility (FDM)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.
Intervention name	For Disability Mobility (FDM)
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental
	Improvement

Improvement
Incremental
Major
Radical

## Appendix

### Voyage

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Voyage
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

### Breathe Life

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score 3		Preventative RED	Supportive ORANGE
		Remedial GREEN	



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Breathe Life
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

## Appendix

### Reconnections

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Group-based	Group-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score 2		Preventative RED	Supportive ORANGE
		Remedial GREEN	Remedial GREEN



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.
Intervention name	Reconnections
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and support help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

### Stuart Halbert Elderberries Drop In Centre

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Group-based	Group-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	Remedial GREEN



Improvement

Incremental

Major

Radical


Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.
Intervention name	Stuart Halbert Elderberries Drop In Centre
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

## Appendix

**Breaking the spell of loneliness**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 4				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them"	
Intervention name	Breaking the spell of loneliness	
1. What is the working principle of this intervention?	If someone's lonely, don't solely focus on them, but raise awareness in the whole community	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement

Incremental


Major

Radical

**2011**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them"	
Intervention name	Water Club	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



Improvement

Incremental

Major

Radical

## Appendix

2010

No name: Videoconferencing Programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)

If someone's feeling lonely, get someone to interact with them.

Intervention name

No name: Videoconferencing Programme

1. What is the working principle of this intervention?

If someone's lonely, get them to use alternate ways of interacting with others.

2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?

Yes

No

Incremental, Major or Radical

2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?

Yes

No

Incremental or Major

2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?

Yes

No

Major

Incremental

Improvement

Improvement

Incremental

Major

Radical

2014

No name: Physical and leisure activity programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)

If someone's feeling lonely, get someone to interact with them.

Intervention name

No name: Physical and leisure activity programme

1. What is the working principle of this intervention?

If someone's lonely, get them to participate in an activity with others who might experience the same thing.

2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?

Yes

No

Incremental, Major or Radical

2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?

Yes

No

Incremental or Major

2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?

Yes

No

Major

Incremental

Improvement

Improvement

Incremental

Major

Radical

## Appendix

2010
No name: Cognitive Behavioral Therapy (CBT)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?			
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)		If someone's feeling lonely, get someone to interact with them	
Intervention name		No name: Cognitive Behavioral Therapy (CBT)	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	

2015
Active Mentoring

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?			
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)		If someone's feeling lonely, get someone to interact with them	
Intervention name		Active Mentoring	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	



## Appendix

2010

No name: Indoor gardening programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

C

Improvement Incremental Major Radical

2012

No name: family-mediated personalised activities

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

C

Improvement Incremental Major Radical

## Appendix

2011
Peaceful Mind

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them"
Intervention name	Peaceful mind
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and assist them so they can explore options for help and other relevant services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
Radical	Incremental or Major
Major	Incremental
Improvement	

Improvement	Incremental	Major	Radical
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2005
Specialist health and social care team

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them"
Intervention name	Specialist health and social care team
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
Radical	Incremental or Major
Major	Incremental
Improvement	

Improvement	Incremental	Major	Radical
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2011

## The Enriched Opportunities Programme (EOP)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Community-based	Group-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Preventative
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Preventative RED
	Digital elements score 1	Supportive ORANGE	Remedial GREEN



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	The Enriched Opportunities Programme (EOP)
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Improvement

2009

## REPRINTS (Research of Productivity by Intergenerational Sympathy)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Community-based	Group-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Preventative
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Preventative RED
	Digital elements score 0	Supportive ORANGE	Remedial GREEN



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	REPRINTS (Research of Productivity by Intergenerational Sympathy)
1. What is the working principle of this intervention?	If someone's lonely get them to participate in an activity where they play a mentoring role.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Improvement

# Appendix

### 2010

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Healty IDEAS

Standard Working Principle (SWP)		If someone's feeling lonely, get someone to interact with them?	
Intervention name		Healty IDEAS	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	

Improvement

Incremental

Major

Radical

### 2009

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

### Interpersonal Psychotherapy (IPT)

Standard Working Principle (SWP)		If someone's feeling lonely, get someone to interact with them?	
Intervention name		Interpersonal Psychotherapy (IPT)	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	
		No	
		Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	
		No	
		Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	
		No	
		Major	
		Incremental	

Improvement

Incremental

Major

Radical

2013

## Lifestyle Engagement Activity Program (LEAP)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Community-based	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	
Digital elements score 1		Preventative RED	Supportive ORANGE
			Remedial GREEN



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them?
Intervention name	Lifestyle Engagement Activity Program (LEAP)
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

2010

## ANU Wellbeing Study: Internet Training Program

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Community-based	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	
Digital elements score 3		Preventative RED	Supportive ORANGE
			Remedial GREEN



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them?
Intervention name	ANU Wellbeing Study: Internet Training Program
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and upskill them so they can explore options for help and other relevant services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental

## Appendix

2010

ANU Wellbeing Study: Internet Support Group

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?			
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them."	
Intervention name		ANU Wellbeing Study: Internet Support Group	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and assist them so they can explore options for help and other relevant services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes No	
Incremental, Major or Radical			
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes No	
Yes		Incremental or Major	
Radical		Improvement	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes No	
Major		Incremental	

Improvement

Incremental

Major

Radical

2006

Fitness and Arthritis Trial (FAST)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?			
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them."	
Intervention name		Fitness and Arthritis in Seniors Trial (FAST)	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes No	
Incremental, Major or Radical			
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes No	
Yes		Incremental or Major	
Radical		Improvement	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes No	
Major		Incremental	

Improvement

Incremental

Major

Radical

## Appendix

2007

Senior Diploma

1	Does this intervention involve one-to-one interaction of personnel with the elderly?					
	Yes		No			
	One-to-one	Community-based	Community-based	Group-based		
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?			
	Yes		No			
	Community-based	One-to-one	Community-based	Group-based		
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?					
	Yes		No			
	Remedial	Supportive	Preventative			
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?					
	Yes					
	Remedial	Supportive				
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.					
	Yes				No	
	Radical				Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.					
	Yes				No	
	Digital				Physical	
Digital elements score 2		Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		Senior Diploma	
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else's life.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	No
		Incremental, Major or Radical	No
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	No
		Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	No
		Major	Incremental



Improvement

Incremental

Major

Radical

2007

Third Age University Program

1	Does this intervention involve one-to-one interaction of personnel with the elderly?					
	Yes		No			
	One-to-one	Community-based	Community-based	Group-based		
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?			
	Yes		No			
	Community-based	One-to-one	Community-based	Group-based		
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?					
	Yes		No			
	Remedial	Supportive	Preventative			
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?					
	Yes	No				
	Remedial	Supportive				
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.					
	Yes				No	
	Radical	Incremental				
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.					
	Yes				No	
	Digital	Physical				
Digital elements score 2		Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".	
Intervention name		Third Age University Program	
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and uplift them so they can explore options for help and other relevant services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes	No
		Incremental, Major or Radical	No
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes	No
		Incremental or Major	Improvement
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes	No
		Major	Incremental



Improvement

Incremental

Major

Radical

## Appendix

2013

The Open Universities for Senior Citizens (UnATI)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 8				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	The Open Universities for Senior Citizens (UnATI)	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and upskill them so they can explore options for help and other relevant services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		
	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		
	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		
	Yes	No
	Major	Incremental
	Improvement	

Improvement

Incremental

Major

Radical

2014

No name: Home visits by commissioned welfare volunteers

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	No name: Home visits by commissioned welfare volunteers	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		
	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		
	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		
	Yes	No
	Major	Incremental
	Improvement	

Improvement

Incremental

Major

Radical



## Appendix

2011

Seniornet

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Community-based	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Preventative
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Preventative RED
	Digital elements score 6	Supportive ORANGE	Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Seniornet
1. What is the working principle of this intervention?	If someone's lonely, get someone who experiences the same thing to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

2008

Assisting Carers using Telematics Interventions to meet Older Persons' Needs (ACTION)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Community-based	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Preventative
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Preventative RED
	Digital elements score 3	Supportive ORANGE	Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Assisting Carers using Telematics Interventions to meet Older Persons' Needs (ACTION)
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and upskill them so they can explore options for help and other relevant services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

## Appendix

2008
No name: Computer training and Internet usage

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".
Intervention name		No name: Computer training and Internet usage
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them and upskill them so they can explore options for help and other relevant services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		
Yes		No
Incremental, Major or Radical		
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		
Yes		No
Radical		Incremental or Major
		2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?
		Yes
		No
		Major
		Incremental
		Improvement

Improvement
Incremental
Major
Radical

2011
No name: Playing Wii

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 2				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		"If someone's feeling lonely, get someone to interact with them".
Intervention name		No name: Playing Wii
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		
Yes		No
Incremental, Major or Radical		
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		
Yes		No
Radical		Incremental or Major
		2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?
		Yes
		No
		Major
		Incremental
		Improvement

Improvement
Incremental
Major
Radical

## Appendix

2006

No name: Computer based intervention

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 2				
Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	No name: Computer based intervention	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes No	
Incremental, Major or Radical		
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes No	
Incremental or Major		
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes No	
Major Incremental		
Improvement		

Improvement Incremental Major Radical

2007

Esc@pe

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 2				
Preventative RED Supportive ORANGE Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Esc@pe	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and upskill them so they can explore options for help and other relevant services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes No	
Incremental, Major or Radical		
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes No	
Incremental or Major		
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes No	
Major Incremental		
Improvement		

Improvement Incremental Major Radical

## Appendix

2010

No name: Web-based intervention on psychosocial well-being

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Group-based	Group-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score 2		Preventative RED	Supportive ORANGE
		Remedial GREEN	Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	No name: Web-based intervention on psychosocial well-being
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

2015

No name: Volunteering

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	Group-based	Group-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score 1		Preventative RED	Supportive ORANGE
		Remedial GREEN	Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	No name: Volunteering
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in activities where they can make a meaningful contribution to someone else.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical


## Appendix

2006

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score: 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Chorale

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Chorale	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	
	No	
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	
	No	
	Major	
	Incremental	



Improvement

Incremental

Major


Radical

2011

No name: Nurse-led interprofessional mental health promotion intervention

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score: 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	No name: Nurse-led interprofessional mental health promotion intervention	
1. What is the working principle of this intervention?	If someone's lonely, they need various kinds of support (intrinsic and extrinsic) - a cluster of interventions.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	
	No	
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	
	No	
	Major	
	Incremental	



Improvement

Incremental

Major

Radical

## Appendix

2010

Helping Older People Experience Success (HOPES)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 9				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

O

Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Helping Older People Experience Success (HOPES)
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	
	Yes No
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	
	Yes No
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	
	Yes No
	Major Incremental

Improvement

2010

No name: Psychosocial group rehabilitation

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

G

Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	No name: Psychosocial group rehabilitation
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	
	Yes No
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	
	Yes No
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	
	Yes No
	Major Incremental

Improvement

## Appendix

### 2012

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Preventative RED	Physical	
Digital elements score 8				
Supportive ORANGE				
Remedial GREEN				

### Homeward Bound

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Homeward Bound	
1. What is the working principle of this intervention?	If someone's lonely, they need various kinds of support (intrinsic and extrinsic) – a cluster of interventions.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	Incremental, Major or Radical	No
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	
	Incremental or Major	No
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	
	Major	Incremental
Radical	Improvement	

Improvement

Incremental

Major

Radical

### 2008

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Preventative RED	Physical	
Digital elements score 0				
Supportive ORANGE				
Remedial GREEN				

### The Homebound Unit of Burden Centre

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	If someone's lonely, get someone to interact with them and signpost help and services.	
1. What is the working principle of this intervention?	The Homebound Unit of Burden Center	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	Incremental, Major or Radical	No
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	
	Incremental or Major	No
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	
	Major	Incremental
Radical	Improvement	

Improvement

Incremental

Major

Radical

## Appendix

2011
No name: Ladies' Club and Gentlemen's Club

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 0				
Preventative RED Supportive ORANGE Remedial GREEN				

C

Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	No name: Ladies' Club and Gentlemen's Club	
1. What is the working principle of this intervention?	If someone's lonely, get others who experience the same things to participate in an activity.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental

2009
Community-based Early Psychiatric Interventional Strategy (CEPIS)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 0				
Preventative RED Supportive ORANGE Remedial GREEN				

C

Improvement
Incremental
Major
Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Community-based Early Psychiatric Interventional Strategy (CEPIS)	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental



## Appendix

2005
Spring Retirees Activity Centre

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Spring Retirees Activity Centre (RAC)	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	No	
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	
	No	
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	
	No	
	Major	
	Incremental	
Radical	Improvement	

C

Improvement Incremental Major Radical

2010
No name: Day Care

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	No name: Day care	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	
	No	
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	
	No	
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	
	No	
	Major	
	Incremental	
Radical	Improvement	

G

Improvement Incremental Major Radical


## Appendix

2011

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

ELDERSHINE

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	ELDERSHRINE	
1. What is the working principle of this intervention?	If someone's lonely, get them to focus on their inner self by practicing mindfulness and meditation	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		
	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		
	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		
	Yes	No
	Major	Incremental
Radical	Improvement	



Improvement

Incremental

Major


Radical

2005

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive	Preventative	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital		Physical	
Digital elements score 3				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Vital Aging-M

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	Vital Aging-M	
1. What is the working principle of this intervention?	If someone's lonely, get them to use alternate ways of interacting with others	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		
	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		
	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		
	Yes	No
	Major	Incremental
Radical	Improvement	



Improvement

Incremental

Major

Radical

## Appendix

**2005**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 1				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

**A Matter of Balance (AMB)**

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	A Matter of Balance (AMB)	
1. What is the working principle of this intervention?	If someone's lonely, get others who experience the same things to participate in an activity.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		
	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		
	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		
	Yes	No
	Major	Incremental

Improvement

Incremental

Major

Radical

**2013**

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 9				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

**No name: Senior school**

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	No name: Senior school	
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		
	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		
	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		
	Yes	No
	Major	Incremental

Improvement

Incremental

Major

Radical

## Appendix

2009 No name: Psychosocial group rehabilitation

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 8				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Improvement Incremental Major Radical

2008 No name: Home visit program for older people with poor health status

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Improvement Incremental Major Radical

## Appendix

2012

No name: Comprehensive educational group intervention for older women

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score		1	Preventative RED
			Supportive ORANGE
			Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	No name: Comprehensive educational group intervention for older women
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

2013

Healthy Ageing

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score		1	Preventative RED
			Supportive ORANGE
			Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Healthy Ageing
1. What is the working principle of this intervention?	If someone's lonely, they need various kinds of support (intrinsic and extrinsic) - a cluster of interventions.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

## Appendix

2008

Young@heart

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	One-to-one	Group-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score		1	Preventative RED Supportive ORANGE Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	Young@heart
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

2008

No Name: Widow to Widow programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based
	Community-based	Group-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based
	One-to-one	Group-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	Preventative
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	Physical
Digital elements score		0	Preventative RED Supportive ORANGE Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them."
Intervention name	No Name: Widow to Widow programme
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

2012

## No Name: Comprehensive Geriatric Assessment

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes One-to-one Community-based	No Community-based Group-based
1.1	Does the intervention engage the wider community in any way?	Yes Community-based	No One-to-one Community-based Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes Remedial	No Supportive Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes Remedial	No Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes Radical	No Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes Digital	No Physical
Digital elements score 1		Preventative RED Supportive ORANGE Remedial GREEN	



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	No Name: Comprehensive Geriatric Assessment
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes Major
	No Incremental

Improvement

2011

## Community Aging in Place, Advancing Better Living for Elders (CAPABLE)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes One-to-one Community-based	No Community-based Group-based
1.1	Does the intervention engage the wider community in any way?	Yes Community-based	No One-to-one Community-based Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes Remedial	No Supportive Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes Remedial	No Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes Radical	No Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes Digital	No Physical
Digital elements score 1		Preventative RED Supportive ORANGE Remedial GREEN	



Improvement

Incremental

Major

Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Community Aging in Place, Advancing Better Living for Elders (CAPABLE)
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes Major
	No Incremental

Improvement

## Appendix

2011

No name: Videoconferencing Programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 3				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	No name: Videoconferencing Programme	
1. What is the working principle of this intervention?	If someone's lonely, get them to use alternate ways of interacting with others	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental
	Improvement	

Improvement
Incremental
Major
Radical

2006

No name: Tai Chi Exercise Programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes	No	Preventative	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".	
Intervention name	No name: Tai Chi Exercise Programme	
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.	
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes	No
	Incremental, Major or Radical	
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes	No
	Incremental or Major	
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes	No
	Major	Incremental
	Improvement	

Improvement
Incremental
Major
Radical



2013 Partners in Dementia Care (PDC)

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Preventative RED	Physical	
	Digital elements score	9	Supportive ORANGE	Remedial GREEN

Improvement Incremental Major Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Partners in Dementia Care (PDC)
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes No
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes No
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes No
	Major Incremental

2007 Dementia Café

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes	No		
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes	No	Yes	No
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes	No		
	Remedial	Supportive		
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?		Preventative	
	Yes	No		
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes	No		
	Radical	Incremental		
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes	No		
	Digital	Preventative RED	Physical	
	Digital elements score	2	Supportive ORANGE	Remedial GREEN

Improvement Incremental Major Radical

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Dementia Café
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes No
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes No
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes No
	Major Incremental

2011

## Healthy Living Centre

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	
Digital elements score		1	Preventative RED Supportive ORANGE Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	Healthy Living Centre (HLC)
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them in a mentoring position.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

2010

## No name: Wellness guide for older carers

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
	One-to-one	Community-based	Community-based Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
	Community-based	One-to-one	Community-based Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
	Remedial	Supportive	Preventative
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
	Remedial	Supportive	
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
	Radical	Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
	Digital	Physical	
Digital elements score		2	Preventative RED Supportive ORANGE Remedial GREEN

Standard Working Principle (SWP)	"If someone's feeling lonely, get someone to interact with them".
Intervention name	No name: Wellness guide for older adults
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them and signpost help and services.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

2007

## No Name: Peer Counselling Programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		If someone's feeling lonely, get someone to interact with them?
Intervention name		No Name: Peer Counselling Programme
1. What is the working principle of this intervention?		If someone's lonely, get someone to interact with them in a mentoring position.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes
		Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes
		Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes
		Major
		Improvement



Improvement

Incremental

Major

Radical

2010

## No Name: Comprehensive Educational Programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?			
	Yes		No	
	One-to-one	Community-based	Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?		Does the intervention engage the wider community in any way?	
	Yes		No	
	Community-based	One-to-one	Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?			
	Yes		No	
	Remedial	Supportive	Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?			
	Yes		No	
	Remedial	Supportive		
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.			
	Yes		No	
	Radical		Incremental	
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.			
	Yes		No	
	Digital	Physical		
Digital elements score 0				
Preventative RED				
Supportive ORANGE				
Remedial GREEN				

Standard Working Principle (SWP)		If someone's feeling lonely, get someone to interact with them?
Intervention name		No Name: Comprehensive Educational Programme 2
1. What is the working principle of this intervention?		If someone's lonely, get them to participate in an activity with others who might experience the same thing
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?		Yes
		Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?		Yes
		Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?		Yes
		Major
		Improvement



Improvement

Incremental

Major

Radical

## Appendix

2010

### PARO

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
		Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score		2	Preventative RED Supportive ORANGE Remedial GREEN

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them?
Intervention name	PARO
1. What is the working principle of this intervention?	If someone's lonely, recreate the experience of owning a pet using technology
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

2009

### Connect for Care

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
		Preventative	
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score		1	Preventative RED Supportive ORANGE Remedial GREEN

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them?
Intervention name	Connect for Care
1. What is the working principle of this intervention?	If someone's feeling lonely, get someone to interact with them?
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

2007

## No Name: Cognitive Enhancement Programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score: 1		Preventative RED	Supportive ORANGE
			Remedial GREEN

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.
Intervention name	No Name: Cognitive Enhancement Programme
1. What is the working principle of this intervention?	If someone's lonely, get them to participate in an activity with others who might experience the same thing
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical

2008

## Homelessness Intervention Programme

1	Does this intervention involve one-to-one interaction of personnel with the elderly?	Yes	No
		One-to-one	Community-based
		Community-based	Group-based
1.1	Does the intervention engage the wider community in any way?	Yes	No
		Community-based	One-to-one
		Community-based	Group-based
2	Does this intervention specifically address someone who can be identified as 'being lonely' or 'being socially isolated'?	Yes	No
		Remedial	Supportive
2.1	Does this intervention attempt to eliminate specific effects of being lonely or being socially isolated?	Yes	No
		Remedial	Supportive
3	Does this intervention demonstrate unconventional ways of 'thinking and doing' things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, adding to the 'meaning' etc.	Yes	No
		Radical	Incremental
4	Does the idea require elderly's direct engagement with the Internet-based technology? If an intervention requires the elderly to use their smartphone to make a phone-call, the intervention will be classed as being a physical one because they do not use their phone to access the Internet.	Yes	No
		Digital	Physical
Digital elements score: 0		Preventative RED	Supportive ORANGE
			Remedial GREEN

Standard Working Principle (SWP)	If someone's feeling lonely, get someone to interact with them.
Intervention name	Homelessness Intervention Programme
1. What is the working principle of this intervention?	If someone's lonely, get someone to interact with them.
2. Does this working principle demonstrate a noticeable change or difference in comparison to the SWP?	Yes
	Incremental, Major or Radical
2.1 Does this working principle demonstrate unconventional ways of thinking and doing things? For example, engaging previously unimagined stakeholders, addressing the issue of loneliness as a by-product of some other activity, changing the meaning etc.?	Yes
	Incremental or Major
2.1.1 Does this working principle demonstrate more than a few (1 or 2) key differences from the SWP?	Yes
	Major
	Incremental



Improvement

Incremental

Major

Radical