

**Cultural Dimensions of Knowledge Management: a  
Comparative analysis of Web 2.0 in Russian and Anglo-**

**Saxon contexts**

**by**

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**Submitted in partial fulfilment of the requirements for the  
degree of Doctor of Philosophy in Management Learning and  
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## **Declaration**

I hereby declare that this is my own work and it has not been submitted in any form for the award of a higher degree elsewhere.



## **Abstract**

### **Cultural Dimensions of Knowledge Management: a Comparative analysis of Web 2.0 in Russian and Anglo-Saxon contexts**

This research aims at establishing whether national culture has an impact on the internal adoption and use of Web 2.0 in organizations, and providing an explanation to how this may be happening.

The rationale for it was derived from two factors. The initial indication that such impact can exist came from the evident skewness in the distribution of levels of activity on Wikipedia shown by representatives of different countries. The analysis of the literature dedicated to Knowledge Management, national culture and Web 2.0 also highlighted theoretical reasons for culture-dependence in Web 2.0's adoption and use.

Achieving the aim in a robust manner required fulfilling a number of objectives. First, it had to be proven that there was a correlation between the national culture and the propensity to use Web 2.0 sites. Second, it was necessary to verify whether the same trends held in an organizational context, and (third) an explanation had to be sought as to what the underlying mechanisms could be.

The evidence gathered via a combination of quantitative and qualitative methods shows that indeed, there is evidence that the national culture does play a role in the *degree* and the *way* Web 2.0 is used in organizations, and provides an explanation of the mechanisms involved.

The thesis makes a fundamental contribution by expanding the existing body of literature into an unexplored area lying at the intersection of national culture, Web 2.0 and Knowledge Management, and by highlighting and addressing the limitations in the theories used.



## **Acknowledgements**

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## 1. Introduction

The turn of the XXI century has seen a major development in the Internet that changed the face of the World Wide Web: the emergence of a new paradigm that became known as Social Media, or Web 2.0 (Ruiz, 2008), exemplified by such websites as Wikipedia (launched in 2001) and Facebook (launched in 2004).

What is fundamentally different about Web 2.0, the ‘second version’ of the Internet, is that more emphasis is put on the users taking an active part in creating online content by contributing to a Wiki article, updating their page on a social network or sharing media on sites such as YouTube. Not only this is a departure from the ‘traditional’ paradigm, whereby a website would be created and maintained by the owner, and the role of the user would be passive – i.e., to download and view the content – but it also means that the structure of Web 2.0 is dynamic and uncertain (users decide which articles to create on Wikipedia, for example), and that there is a higher degree of equality as far as the roles are concerned: everyone can be a co-author of a Web 2.0 site if they wish.

It was not long until organizations started using Web 2.0 systems internally as part of their knowledge management systems in order to utilize the proactive and dynamic features Web 2.0 had to offer. This, in turn, gave rise to the concept of *Enterprise 2.0* (MacAfee, 2006 and McAfee, 2009) – the way of running a knowledge-intensive business relying on active contribution to the knowledge base by the wider user communities.

However, it has been previously shown in the literature that managing an organization’s knowledge is a process that has a large people-related component: for example, the role of *culture* in ‘traditional’ Knowledge Management (i.e., not Web 2.0-based) has been actively researched over the last twenty years (e.g., Alavi, Kayworth et al., 2006; Barrett, Cappleman et al., 2004; Davenport, De Long et al., 1998; De Long and Fahey, 2000; DeTienne and

Jackson, 2001; King, 2007). Yet taking in to account that the new paradigm involves a different, more active, user behavior, it follows logically that the motivating factors in users' decisions to use a Web 2.0 system can be different, too: contributing to an online knowledge repository is a different activity from merely accessing a web –based library. As the literature analysis carried out as part of this thesis shows, the behavioural aspects of Knowledge Management 2.0, although receiving some attention from the academic community, is still under-researched. Whether culture would still have an impact on Web 2.0-based Knowledge Management, and whether the impact would be the same or different from the 'traditional' KM, is still a question, and a gap in the literature, as it will be shown in Sub-section 2.6.2.

Furthermore, the whole school of thought exists based on the view that people's values, beliefs and behavioural patterns differ country by country, i.e., that *national culture* is a significant determinant in human behavior (Hofstede, Hofstede et al., 2010). Thus, a question arises: will national culture have an impact on the way Web 2.0 is utilized by users in different countries?

When the work on this research was about to commence, some evidence was found by the author showing that some influence can, indeed, be present. An observation was made in 2009 with regards to Wikipedia's size by language (see Figure 1, a partial snapshot of Wikipedia's front page taken on March the 1<sup>st</sup>, 2014).

At the first sight, the most of the World's major languages are present, and the picture is similar to what can be expected based on the common sense. However, if the size of Wikipedia's sections by language are normalized on the number of the language's speakers – i.e., the number of articles in a language is divided by the number of people speaking it (Ethnologue, 2014) – it becomes evident that the difference between the least (China, 0.073%) and the most (Poland, 2.644%) active countries is 36 times!

The figures could be explained by a number of technological, economic and other factors; for example, the availability of the Internet between countries could differ widely, in turn explained by the degree of technological development, wealth, or even the geographical size of the countries: China's territory is 30 times larger than Poland', and it could be expected that establishing a complete Internet coverage in it would be logically more difficult.

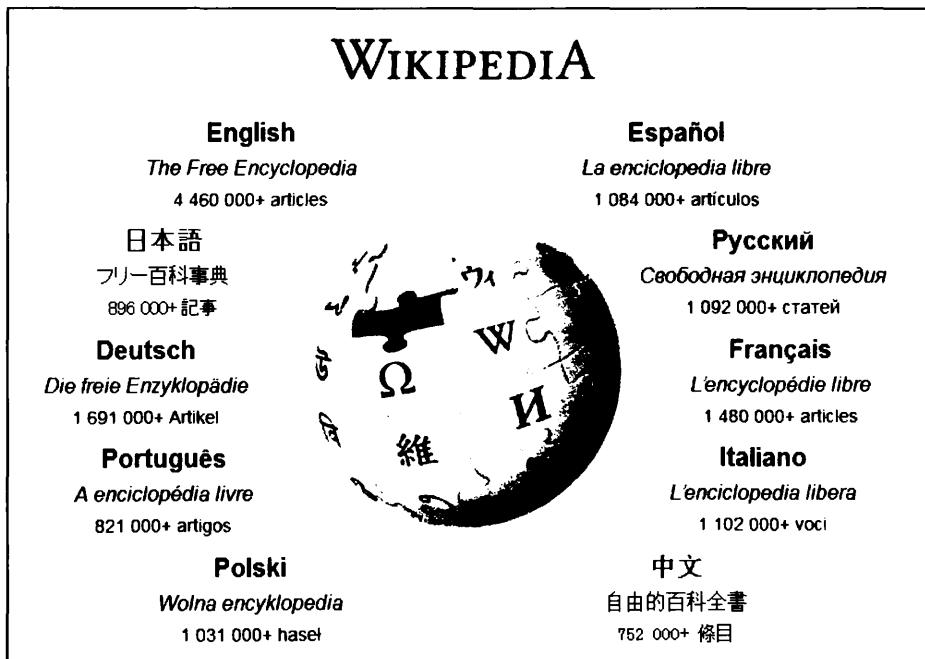


Figure 1: Wikipedia's front page (part of)

But what if there was something else? It is called Web 2.0, the 'second version' of the Internet, because there is, supposedly, a significant difference between the two paradigms, the 'old school' Web and the Web of social media (McAfee, 2006). If the availability of the Web was taken into account, would there be anything specific to Web 2.0 that could be traced to the differences in national cultures? If so, what could be the mechanisms responsible for it?

The principal aim of this thesis was, therefore, *to establish whether national culture has an impact on the internal adoption and use of Web 2.0 in organizations, and to provide an explanation as to how this may be happening.*

In order to achieve this aim, a number of **objectives** had to be fulfilled. First, the initial hypothesis concerning the macro-scale link between the use of Web 2.0 in public domain and national culture needed to be verified. Second, the existence of such link would need to be proven in the *organizational* context, which was proposed to be done by comparing cases of Web 2.0 implementation between groups of organizations in different countries. Finally (third), the explanation for the possible mechanisms was to be proposed and verified.

In order to operationalize the aim and objectives, they were also expressed in the form of research *questions*: the main research question addressing the aim formulated as "*Does the national culture make an impact on the internal adoption and use of social media for knowledge management purposes in organizations?*", and the sub-questions required to be answered to achieve the objectives, "*Is there evidence of a relationship between national culture and the use of Web 2.0 in the public domain*", "*Is there any evidence that the national culture plays a role in the internal use and adoption of Web 2.0?*"; and "*If the link between the national culture and the use and adoption of Web 2.0 exists, what mechanisms are responsible for it?*".

Achieving the aim and objectives was sought in two ways. First, a macro-scale correlation analysis was carried out between major social media sites' user statistics, and dimensions of the most widely cited framework describing national culture via a set of six parameters, Hofstede's Dimensions (Hofstede, Hofstede et al., 2010). This highlighted some trends and allowed for a number of possible explanations for what mechanisms could be responsible for them to be suggested. Second, a number of cases were examined, all related to internal

implementation of Web 2.0 systems in organizations for knowledge management purposes. They were sourced from the Russian and the Anglo-Saxon (UK/US) national contexts; the results were compared between cases in order to highlight any commonalities and differences, and to verify the proposed explanations, adjusting them where necessary.

The aim of the research resonated with the author's personal experience. Fifteen years ago, I was working as a continuous improvement manager at a large manufacturing site owned by Unilever and located in St. Petersburg, Russia. The role was focused on finding ways to maximize manufacturing efficiency, and doing it in a sustainable manner – i.e., trying to enact a change in the organizational culture, driving employee engagement and ownership over manufacturing processes, and above all, giving people on the factory floor tools and techniques to capture, share and replicate their knowledge and ideas.

The company being a true multinational corporation with global sourcing and a large degree of technological similarity between sites located literally all over the world, several attempts were made at the time to establish global communities of practice. The enabling technology was represented by an interactive knowledge management system letting people, at least in principle, capture and share their ideas, post requests for assistance, have discussions and so on.

Yet something was not quite right. It was evident that the degree of adoption of the system, although using it was seemingly to the Company's and every factory's individual benefit, differed by country: where the UK-based sites were very active, others were often lacking. Some of it could be explained by the internal competition: goods manufactured in Argentina could be shipped into Europe and remain economically viable, and with a strategic push for concentrating the manufacturing capacity in fewer, and larger, 'sourcing units', the least efficient factories could find themselves relegated to secondary positions

and eventually sold out. I didn't feel it was the only reason, however, and it remained an open question for me.

Several years later, working for a different UK-based multinational corporation, I was sent abroad as part of an integration task force following a recent acquisition of a French company. The brief was twofold: not only I was supposed to identify opportunities for major savings in the immediate future, but longer-term, I was expected to help establishing a working relationship between the French and the British and to get a two-way knowledge exchange running, using an interactive knowledge management system similar to that of Unilever.

The Headquarters' pragmatic view on it was that since we all wanted to make it work, all it would take was to demonstrate the benefits using the UK's success story, and to ensure that there was enough training, guidance and other support in establishing processes for knowledge capture, application and replication. However, the reality was more complex. At the personal level, my peers, factory directors, shared a lot between themselves, but the higher levels in the organization were virtually excluded from it. Status meant a lot for them, much more than it did in the UK. They were not very comfortable with uncertainty, and above all, the idea of a working lunch – a sandwich consumed during a meeting – was giving them perceptible anxiety.

As I found out after a few weeks in France, one could gain volumes of invaluable knowledge by joining the management team for a protracted lunchtime meal. It was taking two hours not because they ate slowly; the relationships forged during those lunches, and things shared during the conversations were not only immediately useful; they opened doors for further, more open and personable, collaboration and knowledge sharing.

Although I left the company to join Lancaster University before the integration process was over, to the best of my knowledge the right decisions were made; the Big Four consultancy

supporting the process made sure that cultural differences were taken into account and (Hofstede and Hofstede, 2005) and (Hall, 1976) were explicitly used to raise awareness of, and to understand, the cultural differences.

What was evident, however, was that there were not only barriers in sharing knowledge between countries – after all, internal competition and homophily could explain a lot of it – but also that the way they went about knowledge management in different locations was notably different. In the UK, if I needed some data from someone else in the company, all that was necessary was to pick up the phone, introduce myself and explain the rationale for the request; all necessary information could be obtained from there. As my previous experience had shown, it would not work in Russia; one would have to rely on established relationships and in most cases, to have a senior person involved. And these observations, by my own experience, held both in a face-to-face setting, and online.

The relationship between the national culture and Web 2.0, including its Knowledge Management (KM) side, has not been investigated in much detail before. There are many papers dedicated to the role of the national culture in KM as a whole, as the literature review chapter shows, but few are attempting to establish the link between Web 2.0 and national culture directly. None of the latter were conclusive, and this study aims at addressing this gap by investigating the link between Web 2.0 and the national culture, thus making a fundamental contribution in this area.

As the corresponding chapter of this thesis shows, some between-country differences in the use of Web 2.0 have been found to exist. If ratios between each country's Internet population as a whole and the usage statistics for major Web 2.0 sites are compared, some trends start to emerge, and there is a statistically significant difference between countries in how likely people are to use Web 2.0 even if it is normalized on the total Internet usage.

Moreover, these numbers correlate with Hofstede's Dimensions (Hofstede, Hofstede et al., 2010).

The top-line strategy employed in this research, therefore, was to identify whether there were any trends and correlations between the Web 2.0 usage and Hofstede's Dimensions; to come up with a set of hypothetical explanations for *why* the trends could be present, and *why* they are what they are; and to carry out their empirical verification.

Carrying out such an inquiry posed some methodological challenges. Statistical trends at a nation's level are a useful way of assessing a general propensity of the country's population to use Web 2.0. However, its applicability at an organization's level is limited because it is macro-level approach, and it would lack the level of detail and the ability to capture enough complexity and contextual information that a case-by case *qualitative* approach would offer. To remain practical, the methodology would need to be a compromise, or better still, a combination of the two approaches, and the choice was made to use mixed methods: to run a macro-scale study outlining the trends, and then to explain and enrich the findings with illustrative data arising from a deeper analysis of the experience gained by individual organizations attempting to implement Web 2.0 for internal purposes.

Given the author's work experience, language skills and the locale of the professional network, a good opportunity was found in comparing the Russian and the Anglo-Saxon companies, which are also significantly different in terms of Hofstede's dimensions (Hofstede, Hofstede et al., 2010).

This determined the structure of the thesis; it proceeds as follows.

As is the convention for this type of work, it starts from a literature review, discussing the publications and the relevant debates related to the organizational knowledge. A similar approach is then used for knowledge management, culture and Web 2.0. Combined, the

four areas sufficiently inform the researcher and the reader with regards to the key concepts, definitions and previous findings to achieve the aim and objectives.

The thesis then moves on to discuss the research methodology, paying particular attention to explaining how the research objectives dictate the use of mixed methods, as well as describing some debates concerning them and justifying the particular *variety* of them used in this thesis. It then explains the quantitative and the qualitative stages.

The first, the quantitative, macro-scale stage is then carried out and the results are discussed and used to develop a number of hypothetical explanations why and how national culture can have an impact on the adoption and use of Web 2.0. The second, qualitative, comparative ideographic stage follows, addressing sixteen cases, from Russia (plus one from Ukraine), the UK and the US, gradually refining the hypothetical explanations as the evidence builds up, and eventually coming to a tentatively sufficient set of explanations supported by the evidence.

A final round of discussion is provided in order to bring together the sixteen cases and the quantitative results, and to build a fuller and bigger picture of the findings; the thesis ends with a chapter dedicated to conclusions, fundamental contributions, limitations and an outline of potential further steps.

Overall, the research went through a journey from an indication that knowledge management in general and its Web 2.0 variety in particular could be influenced by the national culture, to a stage whereby the matter has been investigated with academic rigor, and the conclusions drawn are based on evidence.

Some of the findings were surprising, some less so; some of them were in line with the theory, whilst others pushed its limitations. The thesis represents the first foray of this

breadth and depth into the area lying at the intersection of Knowledge Management, Web 2.0 and national culture, and adds to the relevant body of knowledge by addressing several previously unanswered questions.

## 2. Literature Review

### 2.1. General Overview

The purpose of this review is to carry out a critical analysis of the existing literature to inform the research of the impact national cultures can have on how successful organizations are in their adoption and use of Web 2.0 technologies internally.

In order to do that, the research topic shall be broken down into a number of key elements: first, Knowledge Management and related fundamental matters will be looked at in detail, proceeding then to the issue of national culture and its implications for organizations, and finally, reviewing Web 2.0-related publications. The research is not concerned with the technical aspects of Web 2.0 or other ICTs used in KM, and is investigating the way people *behave* in relation to Web 2.0. Therefore, the technicalities of Web 2.0, such as IT solutions used, will be excluded from analysis.

The overview of the literature shows that KM, Web 2.0 and culture exhibit different degrees of maturity, possibly due to the chronology of their development. The early works regarding national culture, a subject rooted in Social Anthropology, can be traced back to E.B. Tylor (Bohannan, 1963) and the late Victorian period; the Organizational Knowledge as a field is quite mature too and is well researched and published on, some highly relevant and frequently cited classic works dating as far back as nineteen-fifties, e.g., (Polanyi, 1958). Knowledge Management did not start drawing researchers' attention in earnest until as late as mid-nineties (Easterby-Smith, Crossan et al., 2000), but after that experienced an exponential growth in the number of published peer-reviewed papers for several years. Web 2.0, in turn, is by far the youngest field of study: the term has been suggested in 1999 (Ruiz, 2008), and the technological paradigm *per se* has gained prominence from around 2001, the year Wikipedia was launched, with other platforms following suit, e.g., Facebook

in 2004. As a consequence, both the quantity and quality of publications on Web 2.0 are lagging behind others, with the total of 8210 publications listed in ABI/Inform Global database as per November 2010, and as little as 17% of them being “*scholarly, including peer-reviewed*”; in comparison, KM has 28703 records in total with 59% being scholarly (Bogolyubov, 2011).

The chapter will now proceed to more detailed overview of the areas listed above.

## 2.2. Organizational Knowledge, Knowledge Management, Organizational Learning and Learning Organization - Overview

Although the aim of the study and the main research question are focused on Knowledge Management, it would be useful to provide a brief description of the general theoretical domain where KM resides, in order to put it into the wider theoretical context.



Figure 2: Learning and Knowledge in organizational context, from Easterby-Smith and Lyles (2003).

The matter of learning and knowledge in organizations can be broadly broken down into four areas: (1) *Knowledge Management* being a multitude of ways – a ‘toolkit’ – employed by practitioners to handle the *Organizational Knowledge* (2), the content of the *Organizational Learning* (3) process through which it is acquired, and *Learning Organizations* (4) acting as entities that contain the process and being its beneficiaries. The

four areas can be plotted against each other using two dichotomies, theory vs. practice and process vs. content - see Fig. 2 (Easterby-Smith and Lyles, 2003).

The content side of the framework being of most relevance to this thesis, the exploration of the field shall start from reviewing first of all the works on *Organizational Knowledge* looking for better understanding of *what* is being managed, proceeding then to *Knowledge Management* in order to see different theoretical perspectives and viewpoints on *how* it is managed, including relevant epistemological debates.

## 2.3. Organizational Knowledge

### 2.3.1. Classic and Foundational Works: Defining Organizational Knowledge

Despite the matter of knowledge in organizations gaining prominence within the last twenty years or so (Easterby-Smith, Crossan et al., 2000), some attempts to define Organizational Knowledge as well as key debates related to it are a few decades old.

One of the earliest classic works that is frequently listed by sources concerned with bibliography of the subject (e.g., Dierkes, Alexis et al., 2001; Easterby-Smith and Lyles, 2003; Serenko and Bontis, 2004) and despite its age, is still frequently cited as a relevant piece, is Polanyi's "*Personal Knowledge*" (Polanyi, 1958). Drawing from the experience as a natural scientist and discussing in detail the matters of scientific discovery and knowledge creation, Polanyi departs from the strict positivist point of view on knowledge, describing it as 'destructive'. Polanyi disputes the possibility of detachment in scientific method, discussing the matters of values, intellectual passions and commitments. It follows from there that knowledge is *personal* even though it can still be related back to some objective physical reality. Furthermore, a person knows more than can be articulated; knowledge has a *tacit dimension* to it, which is also the title of Polanyi's other book (Polanyi, 1967). Polanyi's idea of the dichotomy between the tacit and the explicit dimensions pre-dated the development in the Organizational Knowledge research. Not concerned with knowledge in the organizational context, "*Personal Knowledge*" could be best described as a book on philosophy of science, but it had profound consequences in the field: for example, Nonaka's "*Knowledge Creating Company*" (Nonaka and Takeuchi, 1995), in itself a book that tops lists of most impactful publications on Organizational Learning, KM and Intellectual Capital (Easterby-Smith and Lyles, 2003; Serenko and Bontis, 2004), is based on the tacit/explicit dichotomy.

Importantly for Knowledge Management, Polanyi drew attention to the distinction between *knowledge*, *data* and *information*, and knowledge having a ‘softer’ - relational, contextual and personal - dimension to it. The matter of relationships between data, information and knowledge formed a lasting debate: picked up by (Bell, 1973), and discussed by many others, e.g., (Davenport and Prusak, 1998), it is still actively discussed (Tsoukas and Vladimirou, 2001; Bellinger, Castro et al., 2004; Boisot and Canals, 2004; Zins, 2007; Chen, Ebert et al., 2009).

Bell (Bell, 1973, Bell, 1999), seeking clear delineation between data, information and knowledge, suggested definitions of the three: *data* as “*sequences of events or statistics in an ordered fashion*”; *information* as the multitude of such items as news, events and data taken in a context that shows relationships between these items (Bell, 1999, pp. Ixi-Ixii); and *knowledge* as “*a set of organized statements of facts or ideas, presenting a reasoned judgment or an experimental result, which is transmitted to others through some communication medium in some systematic form*” (Bell, 1973, p. 175).

This definition is not indisputable from a number of viewpoints, including Polanyi’s: anything *tacit* would not necessarily show any organization, judgment, reasoning or systematic communication, and thus will not be, by Bell’s definition (Bell, 1973), a piece of knowledge. Yet it still can have quite tangible consequences as it has been shown, for example, in (Cook and Yanow, 1993). The definition was later reviewed by Bell for the anniversary edition of the book (Bell, 1999), and is quite similar to the one by Davenport and Prusak (1998): “*Knowledge is a flux mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information*” (ibid, p. 5) – a view that is equally valid for tacit and explicit forms as well as taking its contextuality into account.

In essence, the distinction means that *data* are facts and figures in some sort of logical order; *information* is an arrangement of those showing how they are related to one another, thus including the context, and *knowledge* is a framework that allows to make sense of the incoming information (Tsoukas and Vladimirou, 2001).

However, it is necessary to point out that some authors reject this delineation and simply equate knowledge to information (e.g., Lehner, 1990; Terrett, 1998, and Gates, 1999), which is the stance that Roos and von Krogh (1996) referred to as the 'epistemology of information processing', and McDermott (1999), called a 'great trap' in knowledge management.

An entirely different way of looking at the nature of knowledge was represented by the development of the *pragmatist* viewpoint, a school of thought most often associated with John Dewey's work (Easterby-Smith and Lyles, 2003; DeFillippi and Ornstein, 2003; Elkjaer, 2003). In Dewey's pragmatism (Elkjaer, 2003), knowledge originates in experience, and various thinking processes, such as theorizing, conceptualizing and so on, act as instruments for actions. *Inquiry* is seen by pragmatists as a response to experiencing a feeling of discord somewhere in the person's surroundings; this is when they begin defining the problem using their mental processes and making sense of it, relying on their previous experience with similar situations, and then formulating, trying and testing hypotheses leading to a solution of the problem. *Learning* from the experience means that a person establishes the connection between the problem, its solution and the consequences; in illustration to this, Elkjaer quotes Dewey (1916/1966: 140) saying that "To "learn from experience" is to make a backward and forward connection between what we do to things and what we enjoy or suffer from things in consequence". This perspective highlights key properties that *learning* and *knowledge* have: their contextual nature, the unity of action and reflection in the process of learning, and inquiry as its method which allows the

experience to be ‘lifted’ into the domain of consciousness and therefore to become able to be shared with others. Different from Polanyi’s tacit-explicit dichotomy as it might be, the pragmatist view is not incompatible with it; attempts to bring the two paradigms together have been made, as it will be discussed further on.

Another one of the best known foundational works on Organizational Knowledge, according to (Easterby-Smith and Lyles, 2003; Dierkes, Alexis et al., 2001; Hislop, 2009; Thompson and Walsham, 2004), is (Blackler, 1995). Blackler cites Gailbraith (1967) and Bell (1973) as the works that initiated the development of the field. Drawing upon an extensive bibliographical search highlighting the increasing importance of knowledge in the post-industrial society, justifying therefore the introduction of related concepts into management studies, Blackler makes several key points. First of all, expanding the knowledge taxonomy suggested by Collins (1993), it is suggested that knowledge can be split into six categories: *embodied* (abstract type dependent on conception and cognitive abilities, “knowledge that” or “knowledge about”); *embodied* (the type acquired through action as well as sentient and sensory information, which is contextual and only partly explicit – “knowledge how” and “knowledge of acquaintance”); *encultured* (achieved through developing a shared understanding, and therefore the first type in the taxonomy related to the group, rather than individual, level); *embedded* (the knowledge residing fully at the organization’s level, expressed in systemic routines and built around relationships and resources), and *encoded* (signs and symbols).

Blackler also highlights certain issues regarding this typology, e.g., a shift towards codified knowledge due to the advent of information technology that requires codification and makes the other types of knowledge less prevalent, therefore disrupting the ‘traditional’ patterns of how organizations handle knowledge and affecting the other types (e.g., *embodied* knowledge due to easier access to larger volumes of information).

Upon trying to summarize the existing definitions of knowledge and concluding that it is usually treated as something “*abstract, disembodied, individual, and formal*” Blackler (1995, p. 1034), comes to conclusion that this is “*unrealistic*”; instead, the author proposes to use the concept of *knowing as a process* rather than *knowledge*, and suggests replacing the ‘older’ way of defining knowledge through a series of dichotomies, such as abstract-specific, individual-collective and social-technical, with a new approach concentrated on the multi-dimensional process of knowing – “*situated, distributed and material*” (ibid., p. 1035).

Despite the multitude of various schools of thought available, one of the most widely cited authors in the field is Ikujiro Nonaka with “*The knowledge-creating company: how Japanese companies create the dynamics of innovation*”, co-authored with Hirotaka Takeuchi (Nonaka and Takeuchi, 1995), as well as over twenty publications dedicated to different aspects of organizational knowledge creation, both of theoretical (e.g., Nonaka, 1996) and empirical (Nonaka, Byosiere et al., 1994) nature.

Nonaka’s work is built upon a simple conceptual foundation: it spins off from Polanyi’s dichotomy of tacit vs. explicit knowledge. Developing this idea, Nonaka investigates how knowledge can move between the types, introducing the SECI (Socialization, Externalization, Combination, Internalization) model – see Fig. 3 (Nonaka and Takeuchi, 1995).

The quadrants shown on Fig. 3 require some further explanation. The idea of socialization process implies that knowledge can be transferred in its tacit form without expressing it explicitly, for example, from person to person through experience as in case of an apprenticeship.

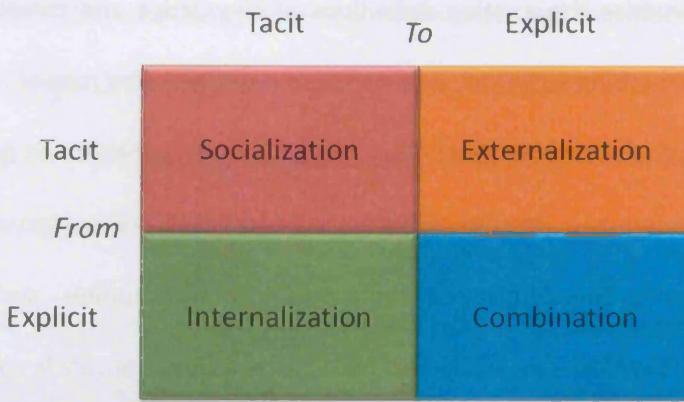


Figure 3: Four modes of knowledge conversion

Externalization is a process of expressing tacit knowledge in an explicit form, writing being an appropriate example; combination means organizing concepts into a knowledge system through “*sorting, adding, combining, and categorizing of explicit knowledge*”, which “*can lead to new knowledge*” (Nonaka and Takeuchi, 1995, p. 89), and lastly, internalization means taking the explicit knowledge in. The authors then argue that the process of knowledge creation can be represented by a ‘knowledge spiral’ going through the SECI elements in a continuous cycle, starting from an individual’s tacit knowledge (Nonaka’s viewpoint is that knowledge can only originate within an individual mind) and getting amplified by the organization, increasing in scale while passing through ontological levels.

Nonaka also identified a number of factors that need to be observed in order for the knowledge spiral to spin. First, the organization needs to have an intention – i.e., an aspiration and the efforts to achieve which usually take form of a strategy encompassing “*developing the organizational capability to acquire, create, accumulate, and exploit knowledge*” (Nonaka and Takeuchi, 1995, p. 74). Second, there is a need for as much autonomy as the circumstances would allow so that individuals have freedom and

motivation to be initiating new spirals. Third, fluctuation and creative chaos are necessary to let individuals and groups to break out of established routines and to reconsider their fundamental assumptions. Fourth, information needs to have a degree of redundancy in the sense that there must be more of it than is immediately required by the employees for carrying out their operational responsibilities. If a concept is created by someone in the organization, it must be made known to wide audience even if they don't need it straight away, which may enable creation of other concepts and make people aware of each other's tacit knowledge. The last success factor identified in the book is the requisite variety, which means that an organization must have flexibility and diversity within it at least matching that of its environment in order to be able to adapt to changes; this would also include egalitarian approach to information distribution and sharing (Nonaka and Takeuchi, 1995).

All five are quite relevant to organizations' Web 2.0 implementation efforts: intention (commitment of the resources), autonomy and creative chaos (absence of structure and control), information redundancy and requisite variety (through the dynamic real-time nature of information processing and non-hierarchical architecture) are all present in Web 2.0's ideology, as it will be shown in the relevant section of this review.

Despite its seminal status, Nonaka's work has been critiqued for various reasons. For example, Gourlay (2003) brings up research methodology flaws, such as unsuitability of self-completion questionnaires for something as complex as knowledge conversion; re-usage of data gathered for a different purpose, namely studies of *information* creation, concentration of the data on the *content*, whereas SECI model is a *process* model, and finally, the fact that variance percentage used in the study has reached statistically significant levels for socialization and combination only, but not for the other two modes. Furthermore, Gourlay challenges the veracity of case studies used, such as the 'tasty bread' example whereby a technician, trying to solve a quality issue at a bakery - bread not tasty

enough - learned a technical trick from observing a master baker (tacit to tacit knowledge conversion) and made a suggestion that solved the problem (Nonaka and Takeuchi, 1995). Gourlay finds that the case studies are unconvincing for anything but the externalization process and states that the "*SECI model has thus never had solid empirical groundings*" (Gourlay, 2003, p. 383), without, however, challenging its theoretical soundness, which is done in another paper (Gourlay, 2006). Arguing against Nonaka's treatment of knowledge as a justified true belief, Gourlay states that this is a significant narrowing down of the traditional western epistemology meaning that knowledge is created by managers only as a belief that is justified if it fits the organization's strategy or the forecast. It is referred to as the "*cavalier dismissal of 'traditional epistemology'*" (Gourlay, 2006, p. 1423). Gourlay also argues that tacit knowledge can be at least partly, if not wholly, *inherently tacit* and challenges the idea of the four modes of transforming knowledge, stating that three of them appear to be plausible, but dismissing some of Nonaka's evidence as "*anecdotes about new product development*" (ibid., p. 1418), all of them explainable by simpler models than Nonaka's. Gourlay then offers a framework based on Dewean pragmatism and the concepts of 'knowledge that' and 'knowledge how', corresponding to two different kinds of behavior and not directly linked to tacit vs. explicit knowledge dichotomy, representing instead reflective and non-reflective experience. Gourlay summarizes that knowledge "*is, can perhaps only be, managed indirectly, through managing behaviour*" (ibid., p. 1431) – a conclusion that could have profound consequences on Knowledge Management. It is, however, in direct contradiction with many other viewpoints which will be reviewed further on.

Another article critical of Nonaka's framework was published by Cook and Brown (1999), preceding Gourlay's publications and cited in them, albeit only briefly. The paper is focused on re-defining a framework of organizational knowledge rather than deconstructing

Nonaka's theories, and it merely lists them among others; however, it identifies a number of significant challenges.

First, the treatment of tacit and explicit knowledge as instances of the same, and therefore subject to conversion from one another, is questioned. Second, a two-dimensional framework is introduced that describes knowledge through two dichotomies of tacit-explicit and individual-collective, arguing that the four types of knowledge are of equal standing and none of them is part or subordinate of another (therefore, the idea of knowledge spiral, whereby knowledge can only originate in an individual mind, undergoing then a defined series of transformations, is irrelevant). Finally, the authors (Cook and Brown, 1999) argue that not all that individuals or groups know how to do, explicitly or tacitly, can be explained by the knowledge they hold. Drawing from the pragmatist epistemology, Cook and Brown suggest that what is possessed (i.e., *used in action*) should be called *knowledge*, yet what is part of action, should be referred to as *knowing*. Cook and Brown point out that this new viewpoint – referred to as *epistemology of practice* – is not competing with, but rather, complimentary to the epistemology of possession, i.e., seeing knowledge as something that people *have*. The two positions are described and “*mutually enabling*” (ibid., p. 53), and in the authors’ view, it is the use of knowledge as a tool in the interaction with the physical and social world that creates new knowledge and knowing; the process is referred to as a ‘generative dance’. Based on this logic, Cook and Brown suggest a framework incorporating the tacit/explicit and individual/collective dimensions, as well as knowing as action (see Fig. 4):

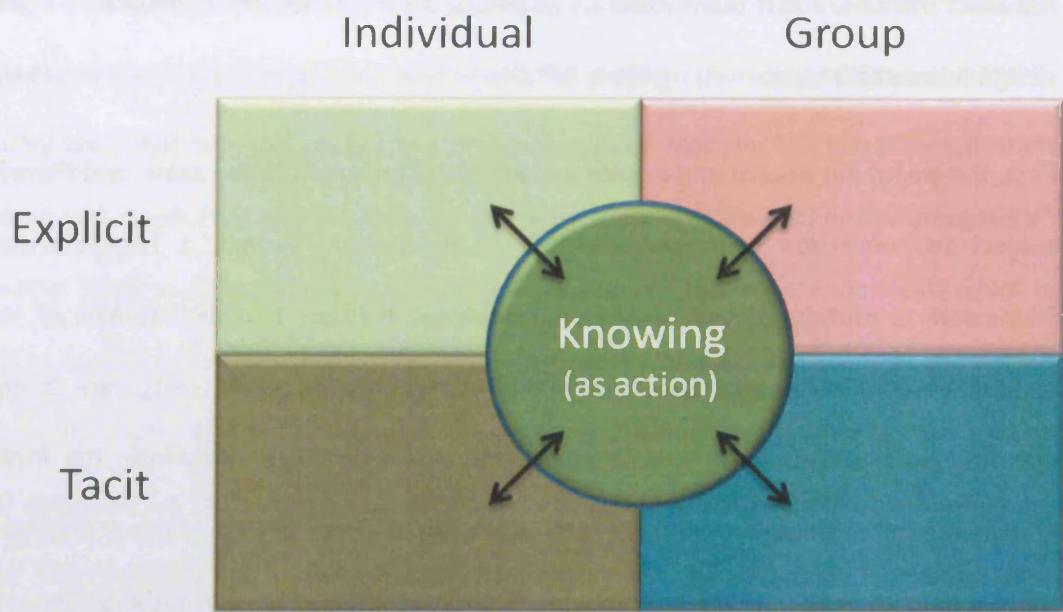


Figure 4: Bridging Epistemologies: the link between tacit/explicit vs. individual/group knowledge and knowing as action, from (Cook and Brown, 1999)

The third publication highly critical of Nonaka's fundamental assumptions and the interpretation of preceding theories such as Polanyi's work is (Thompson and Walsham, 2004), which is concerned primarily with the contextual dimension of knowledge and postulates, as well as illustrates, the importance of context in knowledge creation. Thompson and Walsham point out that Nonaka is ignoring Polanyi's "*inconvenient*" (ibid., p. 726) view on the impossibility of purely explicit knowledge which would put the idea of transformation between tacit and explicit knowledge at risk; the authors insist on the importance of context in the process of sense making and suggest that successful Knowledge Management initiatives must take managing the context into account.

Nonaka and von Krogh (2009) have published an article responding to this and some other critiques. The authors have acknowledged several challenges: the status of *truth* in the definition on knowledge, tacit and explicit knowledge falling along a continuum, value of

the continuum view for organization science, conceptual basis for knowledge conversion, possibility of upholding the conversion concept in light of the relationship between tacit knowledge, and social practices and the outcome of knowledge conversion.

Much of the critique discussed above can be explained by misunderstanding of Nonaka's view on the relationship between tacit and explicit knowledge as a continuum rather than a discrete dichotomy with set boundaries. Indeed, most of the arguments regarding pure forms of one or another as well as the conversion process lose their power if a continual view is taken into account.

Besides, the importance of social context in knowledge creation has been referred to by Nonaka several times; see (Nonaka and von Krogh, 2009), and especially (Nonaka and Konno, 1998) – a paper dealing with the concept of 'Ba', i.e., social context, which has been overlooked in (Thompson and Walsham, 2004), explaining the rationale for upholding the definition of knowledge as justified true belief as well as its role in the knowledge conversion process.

### **2.3.2. Relevance to Organizations: Knowledge as Intellectual Capital**

Independently of how exactly Organizational Knowledge is defined, the question of its relevance to organizations remains. Why should organizations be concerned with what knowledge they possess, let alone committing resources to managing it?

One possible answer is that increasingly since the nineteen nineties, knowledge has been seen as a valuable asset, a source of competitive advantage and a part of the firm's intellectual capital. Serenko and Bontis (2004) identify (Stewart, 1991), published in Fortune magazine, as the one that opened the intellectual capital debate by discussing, using a multitude of examples from the industry, how leveraging knowledge can be used by

organizations to gain and maintain competitive advantage. However, even though Serenko and Bontis describe it as a “*high profile publication [that] set the concept of intangible assets firmly on to the management agenda for many years to come*” (Serenko and Bontis, 2004, p. 186), the article, published in a popular magazine and featured on ABI/Inform list, has not been cited at all, and is not even mentioned on Google Scholar as per December 2010.

Instead, the Winter Special Edition of Strategic Management Journal, 1996 (Vol. 17), represents a clearer watershed. Dedicated to the matter of link between strategy and organizational knowledge, this issue contained a number of highly cited articles on intellectual capital, such as Spender and Grant (1996), Liebeskind (1996), Spender (1996), and, the most widely cited, Grant (1996).

Collectively, they argue that the production-function, resource-based and transaction-cost theories of the firm undervalue the role organizational knowledge plays in forming the firm’s competitive advantage. Spender (1996) states that the knowledge-based theory allows for a firm to be viewed as “*dynamic, evolving, quasi-autonomous system of knowledge production and application*” (Spender, 1996, p. 59), whereas Grant (1996) views firms as institutions with the primary purpose of knowledge integration – a pragmatic view that contradicts Nonaka’s opinion that the knowledge *creation* is the primary source of competitive advantage.

Writing a chapter in a book published a few years later, “*The strategic Management of Intellectual Capital and Organizational Knowledge*” (Choo and Bontis, 2002), Grant (2002) summarizes key premises of the knowledge-based view of the firm (the author makes a point that this is not a *theory* in a formal sense, but rather a set of ideas): knowledge is an overwhelmingly important rent-generating production resource; various types of knowledge differ in their degree of transferability; knowledge is subject to economies of

scope and scale; it is created by human beings; efficiency of knowledge creation and storage requires a degree of specialization; and finally, “*producing a good or service typically requires the application of many types of knowledge*” (Grant, 2002, pp. 135-136).

Developing the knowledge-based view further, Chakravarthy, McEvily et al. (2003), make an important point regarding the source of knowledge-related competitive advantage: it is argued that it is not the *knowledge* per se, but rather *Knowledge Management*, i.e., it is more important what one does with the knowledge rather than what knowledge one has; this proposition can be viewed as an expansion of Grant’s knowledge integration argument. The authors define Knowledge Management as “*accumulation, protection and leverage of knowledge*”, which in itself is a useful definition, and include in it, therefore, the precursors of knowledge integration (or leverage, in the authors’ terminology). In support of Grant’s claim with regards to different degrees of knowledge transferability, the authors show that the more tacit, complex and specific the knowledge is, the more difficult it is to transfer it and therefore the easier it is for a firm to defend its competitive advantage, but at the same time, the more difficult it is to leverage it towards new opportunities.

Chakravarthy, McEvily et al. (2003) also show that difficulties with tacit and explicit knowledge’s leveraging can be counter-balanced if “*the social network of the firm encourages the frequent exchange of experts and dissemination of their expertise*” (Chakravarthy, McEvily et al., 2003, p. 315). The authors explain the increase in organizations’ flexibility by sharing tacit knowledge through frequent interactions between different people – i.e., that tacit knowledge can be noticed if an expert that bears it is frequently exposed to others and that in a complex organization it is often hard to know about the existence of certain knowledge. Furthermore, the open exchange of knowledge between organizational units as an important factor is identified. All of these (frequent interactions, multitude of people one is exposed to, open exchange of knowledge) are

present in *virtual* social networks, and it can be concluded that the effect should be observed in their case as well.

It is worth noting that intellectual capital view on knowledge does not assume the same epistemological simplification as the IT-centric view (knowledge being the same as information - e.g., Lehner, 1990; Terrett, 1998, and Gates, 1999), and instead, the authors noted above accept the contextuality and complexity of knowledge. In any case, the need for harnessing the intellectual capital and managing knowledge has developed over the years into a well-accepted viewpoint, giving the next subject, Knowledge Management, a solid justification.

### **2.3.3. Organizational Knowledge: Conclusion**

As a conclusion to this section, it can be pointed out that a multitude of views exist on the definition of organizational knowledge. One view is the *justified true belief* one accepted by many, including Nonaka (Nonaka and Takeuchi, 1995), however, several attempts have been made to define knowledge through taxonomizing it in different ways, e.g., widely adopted and expanded Polanyi's tacit vs. explicit (Polanyi, 1958), Blackler's (Blackler, 1995) typologies, and Cook and Brown's 'bridging epistemologies' framework (Cook and Brown, 1999) encompassing both tacit/explicit and individual/collective dimensions as well as the pragmatist view on knowing as action. Some authors also choose to avoid the difficult debate by simply equating knowledge to information (Lehner, 1990; Terrett, 1998, and Gates, 1999).

For the purpose of this research, Cook and Brown's position will be maintained as the most comprehensive and empirically supported one. Given this stance, it follows logically that the data-information-knowledge delineation (Bell, 1973) should be adhered to as well,

whereby data is sequenced facts and figures, information is data put into context, and knowledge is information made sense of and systematically communicated.

## 2.4. Knowledge Management

### 2.4.1. Knowledge Management: the State of the Field

This field of study is comparatively new: even though the first mentions of the term date back to 1975, when several articles were published in *Public Administration Review* (*Public Administration Review*, 1975) dedicated to the matter of Knowledge Management in public administration areas such as policymaking, they had little impact: as of November 2011, only one out of nine articles in the issue has been cited once. After that very little was published for about twenty years until 1995, when the field suddenly enjoyed an exponential growth in the number of publications (see Fig. 5):

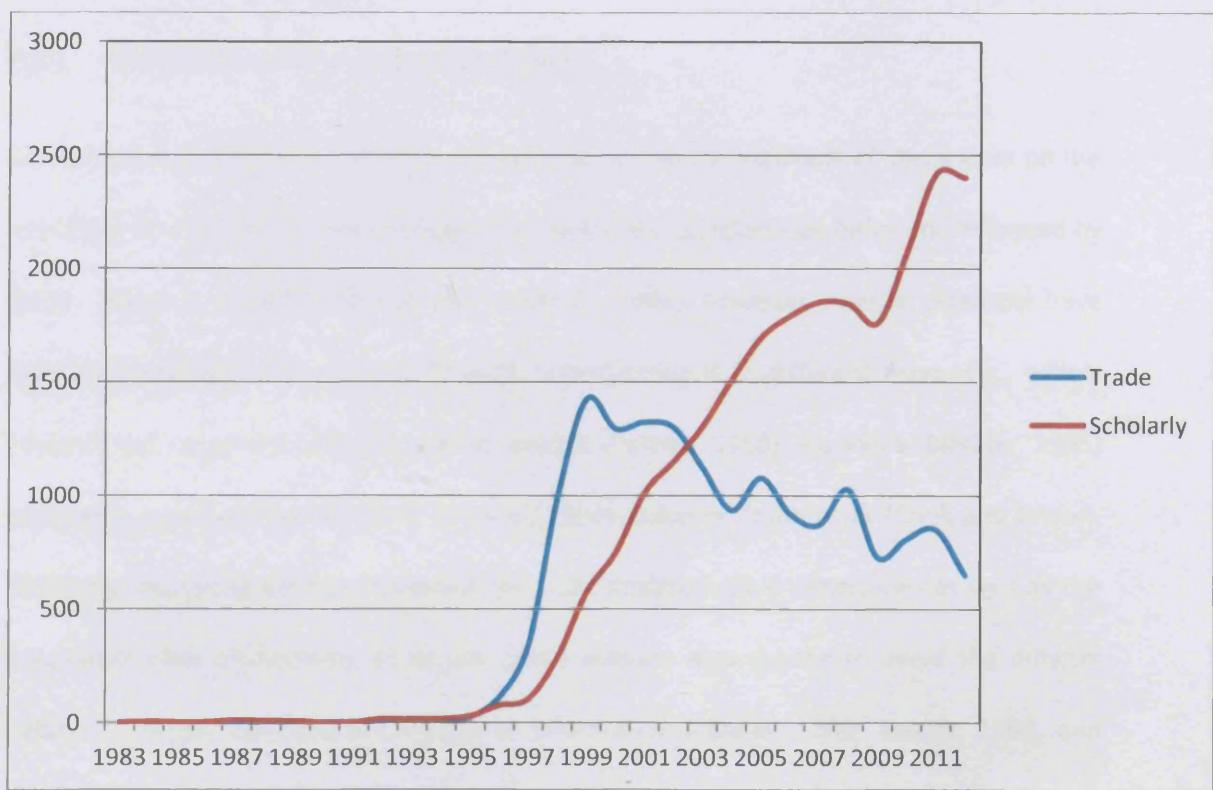


Figure 5: Number of publications on Knowledge Management per year listed on ABI/Inform database

As the graph shows, Knowledge Management is still being actively researched with over sixteen hundred articles published every year, although the difference between the industry and the scholarly journals is quite interesting. Both started developing at the same time, however, the scholarly literature was slower on the uptake, possibly because of the lead time affected by the lengthier peer review process. It maintained a steady pace, though, and still does, whereas the industry interest peaked around 1999 and then went into a steady decline. As far as the industry/scholarly ratio is concerned, it can be said with confidence that KM is becoming an increasingly academic field. There is not enough evidence to say whether it means a decrease in impact and relevance, but the consensus that Prusak and Matson referred to saying that *“after years of discussion and experiment, practitioners and theorists have come to a consensus on defining the key knowledge and learning activities that organizations need to engage in or enhance”* (Prusak and Matson, 2006, p. 3) is not obvious.

There is evidence that the epistemological schism between IT-centric and human-oriented views based on aforementioned rejection or acceptance of the distinction between knowledge and information (Alvesson and Karreman, 2001) is still present. At the turn of the century the IT-centric approach, e.g., seeing KM as *“the formal management of knowledge for facilitating creation, access, and reuse of knowledge, typically using advanced technology”* - O’Leary (1998a) and similarly, O’Leary (1998b), occupied anything between 70% of the agenda (Easterby-Smith, Crossan et al., 2000) and its entirety (Swan, Scarbrough et al., 1999), but the debate grew in intensity (Currie and Kerrin, 2004) and the gap continued to develop (Kakabadse, Kakabadse et al., 2003; Hazlett, McAdam et al., 2005). The recent bibliometric studies (Hosein and Bontis, 2009; Ma and Yu, 2010) show not only that the gap is still there, but also that it is not closing. The latter paper, however, quantitatively comparing the most prominent topics for the periods between 1998 and 2002 vs. 2003 and 2007, shows that the top three have changed from ‘essentials’ of KM,

knowledge-based theory of organization and innovation, and organizational learning, to strategy of KM, organizational learning and knowledge-based theory of organization and innovation. In other words, Organizational Learning perspective is gaining attention, and the 'technicalities' have disappeared altogether.

Overall, it is evident that the field is still changing, gradually moving towards the human-oriented approach (Bogolyubov, 2011).

#### **2.4.2. Defining Knowledge Management**

Authors attempting to find a universal definition of KM, struggle with it (e.g., Alvesson and Karreman, 2001; Lloria, 2008). The first part in it – 'knowledge' – as it was discussed in the Organizational Knowledge section of this review, is epistemologically diverse, and the views on it can be varied and mutually incompatible. Both (Alvesson and Karreman, 2001) and (Lloria, 2008), however, found that the 'management' part is more concrete and easy to define.

As the literature analysis shows, this is not necessarily so. At least, *Organizational Knowledge* frameworks are well researched and have a solid theoretical foundation in epistemology. Defining the 'M' in KM, however, is down to the individual author, and these definitions can be detailed or generic and include as many different elements of KM practice. Some, like McInerney (2002), use the terms 'Knowledge Management' and 'knowledge sharing' interchangingly, stating that it "*is based upon knowledge creation and knowledge transfer*" (ibid., p. 1009), yet others (e.g., O'Leary, 1998b, p. 34) still equate knowledge to information.

Definitions appearing in the literature are numerous: for example, Vera and Crossan (2003), list several of them (p. 124): "*the explicit control and management of knowledge within an*

*organization aimed at achieving the company's objectives*" (Van der Spek and Spijkervet, 1997, p. 43), "*the process of creating, capturing, and using knowledge to enhance organizational performance*" (Bassi, 1999, p. 24) and "*the ability of organizations to manage, store, value and distribute knowledge*" (Liebowits an Wilcox, 1997, p. i). Vera and Crossan (2003) summarize that "*KM is understood as "managed learning" and is assumed to have a positive impact on performance*" (Vera and Crossan, 2003, p. 124); other sources cite something else, e.g., (Hislop, 2009) – Knowledge Management as process of managing anything that can be classed as knowledge, (Chakravarthy, McEvily et al., 2003), as "*the accumulation, protection and leverage of knowledge*" (p. 305), and (Lloria, 2008), giving as many as ten possible definitions.

The differences between these seven definitions shows that there is little consensus in defining KM. For example, the definitions by Van der Spek and Spijkervet (1997) and Hislop (2009) are quite generic: Knowledge Management is essentially the management of knowledge, whatever it might be. For others, KM means managed learning, yet for others it is an *ability* to perform certain actions with knowledge. Furthermore, O'Leary mentions "*advanced technology*" that is "*typically involved*", but in his original paper dedicated to the matter of Artificial Intelligence usage in KM (O'Leary, 1998b), the author does not expand on any empirical evidence in support of this *typicality*, similar to the earlier paper (O'Leary, 1998a), where KM's softer aspects are not taken into account.

Various attempts have been made to classify the approaches to KM. Alvesson and Karreman (2001) broke the field down into extended libraries, community management, normative control and enacted blueprint stances. Some have suggested a location-based taxonomy: Takeuchi (2001), dividing them into American - *managing knowledge*, European – *measuring* it and Japanese – *creating* it, and (Zhu, 2004) – American, intellectual capital-based, European, discourse-centered, Chinese – highly contextualized Confucian, and

Japanese, tacit-oriented creation approaches. Besides, the technology vs. human beings dichotomy is ever-present (Hazlett, McAdam et al., 2005) – e.g., Hayes (2011) describes it as the difference between the content-based and relational approaches to KM, i.e., systems-based view vs. the one centered around the human aspect of KM.

To summarise it, KM could be defined, based on the literature review, as ‘creating, capturing, handling, leveraging and protecting knowledge leading to an increase in organization’s capability’. This summary is meant to include all types of knowledge discussed previously – tacit, explicit, individual, collective and knowing as an action, thus covering both the technical and human-oriented views on Knowledge Management.

#### **2.4.3. The Foundations of KM**

Two books most often cited in the later KM literature, are Nonaka and Takeuchi’s “Knowledge Creating Company...” (Nonaka and Takeuchi, 1995), and Davenport and Prusak’s “Working knowledge: how organizations manage what they know” (Davenport and Prusak, 1998): hardly any post-1995 literature review avoids citing at least one of them. The former has already been discussed at length in the earlier sections, but Davenport and Prusak (1998) requires a more detailed look due to its popularity among the Knowledge Management scholars.

In order to describe the dynamics of the knowledge exchange in organizations, the authors introduce a metaphorical concept of *knowledge market* with its own political economy of demand and supply, various roles, such as buyers, sellers and brokers, and its own imperfections and pathologies. Davenport and Prusak look at Knowledge Management not by analyzing activities that it can be comprised of, but rather as a multitude of ways and means to facilitate and regulate knowledge market processes.

The authors dedicate a chapter to the process of knowledge generation, identifying such processes as acquisition, rental, fusion, adaptation and generation of knowledge through “*informal, self-organizing networks... ...that may over time become more formalized*” (ibid., p.63). In discussing the process of codifying knowledge, i.e., transferring it from tacit to explicit form, Davenport and Prusak highlight the importance of *knowledge maps* – registers of where the knowledge resides, or who has it – ‘yellow pages of knowledge’ in organizations; the same issue arises when the authors talk about knowledge transfer and the importance of “*water coolers and talk rooms*” (ibid., p. 90), though the main point of this chapter is to highlight the importance of informal conversations and networks in transferring knowledge. Other issues associated with knowledge transfer are also discussed, such as differences in transferability of different types of knowledge (something later on explored by Chakravarthy, McEvily et al. (2003), as has been discussed earlier), and cultural implications (trust, common ground, status issues etc.).

Looking at the role of technology in KM, and emphasizing again that they see KM as “*much more than technology*” (p. 123), the authors suggest a typology of applications: expert systems and artificial intelligence, knowledge repositories, focused knowledge environments, and systems for longer-term analysis and real-time knowledge. Others, such as communications support systems and Internet, are also mentioned in passing as the ones that can potentially be used for KM purposes. In reviewing the potential limitations of IT use in KM, it is stated that it can be used for handling information, but its usefulness in creating or applying knowledge is limited, and it will not on its own deliver a behavioral, cultural and organizational change that is required for KM implementation.

Attempting to define the success measures for KM projects, Davenport and Prusak come up with a list of five key indicators, namely increase in resources involved into the project, increase of volume of knowledge contained and used, adoption rate, degree of ‘comfort’ in

the organization in relation to the concepts of KM, and finally, some financial return, which may be perceptual. These indicators, however, are open to criticism. The first three are strongly positivistic and are not necessarily linked to how successful KM is *per se*: increase in resources may be explained by the degree of management's commitment to the initiative, and this measure doesn't take into account whether the *right* resources are being committed or if they are used effectively. The volume of knowledge contained in KM systems illustrates quantity, not quality, i.e. whether the right knowledge is being captured and used, and does not take into account factors like organizational forgetting, whereby a significant amount of vital knowledge may be getting lost and only a proportion captured, still giving a positive net effect. Furthermore, this measure is only applicable to explicit knowledge. The degree of adoption, again, is a number; what if a few key experts are missed from the KM process in the organization and their knowledge is therefore not available to anyone else, even if needed? The degree of comfort may indicate the level of KM's integration into the corporate culture, but following a fad or going along with the apparent preferences of the top management may create the same surface manifestations without the organization's knowledge being managed effectively. The fifth point, financial return, is specific to commercial organizations and is inapplicable to the not-for-profit ones.

A few points can be made to summarize the book. First of all, the key concepts it is built upon are in line with the classic works on organizational knowledge, and there are no radical changes of course or departures from established fundamental frameworks. A point is made of describing KM as a much broader phenomenon than merely managing data or information, acknowledging the multi-dimensionality of knowledge. The metaphor of a firm as a knowledge marketplace can be very useful for describing the dynamics of knowledge-related processes in an organization, especially in a 'free market'-like context of Web 2.0, whereby the regulatory mechanisms are limited, akin to the role of legislation in the modern liberal market economies, i.e., setting the rules but leaving the rest to emerge for

itself. A number of empirically-based typologies for information technologies, Knowledge Management projects, KM success measures and its success factors are also offered. All these points inform this research from the viewpoint of understanding the role of KM in modern business.

#### **2.4.4. KM Success Factors and Measures**

As far as the critical success factors for KM initiatives including the IT-centric ones are concerned, Butler, Heavin et al. (2007), based on an extensive analysis of the literature on the matter (for each item on the list about five different sources on average are cited), provide a more detailed and comprehensive summary in comparison to the one in (Davenport and Prusak, 1998). The authors list three distinct areas that need to be present. First, the *strategic* success factors imply that there must be a match between the organization's KM strategy and its overall business one; there is a need for a comprehensive set of KM objectives that have to be appropriately communicated; the initiative must have top management's support, and new KM-related roles and responsibilities need to be defined and/or created. The second group is *IT-related*, and the authors list the ease of use, utilization of Web-based technologies, accuracy of results, the balance between security and openness, high degree of IT development, and user participation and involvement. The last group, which is of particular interest for this research, is *organizational*: focus on people factors, team-oriented culture, trust among knowledge workers, comprehensive training, incentives and rewards, both monetary and not, and finally, changing organizational structures and processes. Citing a number of further works (e.g., Hackett, 2000; Hislop, 2003, and Alavi and Leidner, 2003), Butler, Heavin et al. indicate that people-related factors are of greater importance than the other two groups.

A number of other publications (Davenport, De Long et al., 1998; De Long and Fahey, 2000; McDermott and O'Dell, 2001; Janz and Prasarnphanich, 2003; Alavi, Kayworth et al., 2006; Hayes and Walsham, 2000, and Hayes, 2011) single out the issue of organizational culture and related matters, such as power and politics, collectivism and individualism, control, trust and so on. Those papers represent a consistent view on the relationship between culture, the shape of KM and its successfulness. For example, Davenport, De Long et al. (1998), McDermott and O'Dell (2001) and Alavi, Kayworth et al. (2006), argue that culture (or values as its element) favourable to knowledge sharing is a *precursor* to the successful KM implementation, i.e., it is argued that KM is not a change management tool or a driver for culture change, and in order for KM to be successful, it needs to match the organization's values, culture and style.

Furthermore, Alavi, Kayworth et al. (2006) show that the existing values will not only determine whether a KM initiative will be successful or not, but will also shape up what technologies are adopted, how they are used and what outcomes they bring – for example, a technical development department might take on groupware facilitating new design creation via teamwork, whereas a sales team, more concerned with individual performance, might restrict their KM systems use to merely utilizing product and contact databases.

As far as measuring KM success is concerned, the multitude of existing approaches follow the aforementioned epistemological schism, i.e., the difference between the IT-centric and human-oriented views on KM.

First, the techno-centric view assesses KM initiatives success in a similar the one used for information system implementation projects in general. For example, citing 180 theoretical and empirical papers, DeLone and McLean (1992), suggest a framework for defining information systems success that includes five elements: systems quality, information

quality, use, user satisfaction, individual impact, and organizational impact, the latter two referring to the impact on *performance* rather than anything else. In essence, the authors' view is that if a system works technically well, the information fed into it is good, people use it and like doing so, there will be an impact on individual performance leading to improvement in organizational performance. The framework can be applied to virtually any information management systems, be it an ERP such as SAP, or a knowledge repository.

It is, however, quite simplistic, and even though the quality components can be relatively easily defined and measured, the rest is open to questions, mostly around the softer aspects of systems implementation. As far as user satisfaction is concerned, this indicator ignores the potential conflict of interest, perceived or real, between different user sub-groups (i.e., management vs. employees) Furthermore, satisfaction with a system may be contingent upon factors other than the system itself - for example, upon how well the implementation project goes, incentives, and so on. The *use* component misses the point of the *use* being *right* – e.g., efficient, sufficient and so on. The individual performance dimension, again, over-simplifies the matter in a sense that it does not take into account the causality of the relationship between the system and any changes in performance. And even if it is assumed that an increase in individual performance leads to an improvement in how the organization is doing, which is by no means a proven case, there are a number of fundamental issues with simplifying the matter of organizational performance. Is the effect sustainable or short-term? Does it give the company a competitive edge? Is the increase in performance as good as it could be? What if the environment (economics, market, etc.) change – will the new system be able to keep giving higher performance?, and so on. Finally, as it was discussed earlier, being systems-oriented, this approach has limited applicability to *knowledge*, especially its tacit dimension.

Recent attempts by other authors, such as (Jennex and Olfman, 2003), to modify the model for use in KM context, have included the word 'knowledge' alongside 'information', opted for 'net benefits' instead of impact on performance and added 'perceived benefit' as a separate element in addition to already existing user satisfaction. The same the limitations as in (DeLone and McLean, 1992) remain.

Another view on understanding success measures for KM is more pragmatic and consists of doing it through the financial side of the matter in two distinct ways. One is simply putting a 'hard figure' against the financial return of projects or programs, and some companies like Scandia and Dow Chemicals are claiming to have calculated savings arising from managing their intellectual assets (Liebowitz, 2005). There are, however, two major issues with this approach: first, the subject matter includes a variety of intangibles, and benefits will not necessarily be immediate, so they will be difficult to measure reliably in all but simplest cases. Second, not-for-profit organizations fall beyond the measure's remit. The other approach, based on the knowledge-based view of the firm, suggests that there may be a way of valuing the *intellectual capital* of an organization (Liebowitz and Suen, 2000).

This approach is not without limitations either. It is prescriptive in a way that its main methodology consists of compiling lists of what needs to be valued, and the four models cited by Liebowitz and Suen (2000), contain between 13 and 114 items. The vulnerability of this approach is that there is no guarantee that the list used is exhaustive; furthermore, some relevant matters will remain immeasurable due to their intangible nature. Besides, even though KM's success can be defined within this paradigm as an increase in intellectual capital, there is little evidence to indicate whether there is a link between this and the company's performance. Finally, a fundamental limitation of this approach is that it reduces the matter of organization's success to its financial dimension, ignoring (and essentially

leaving no space for inclusion of) its other aspects, such as elements of the triple bottom line (Elkington, 1998).

In the aforementioned later paper, Liebowitz (2005), attempts to bridge the gap between the measurable dimensions and the 'fuzzy' or 'uncrisp' ones (both terms are used to describe reasoning with a degree of subjectivity or unclear logic, e.g., statements like 'A. is tall, therefore...', whereby the degree of *tallness* is a matter of opinion). Liebowitz bases his argument on logical grounds, discussing the difficulty of measuring the intangibles and describing in passing a way of dealing with it employed by the US Navy which combines both positivist and social constructionist approaches in the sense that some indicators are measured, and for others, qualitative evidence is used, such as - literally - 'anecdotes'. The two components can't be brought together into a unified whole and are used alongside each other. Liebowitz's framework, however, does not offer a methodological breakthrough, and the methodology suggested is a more mathematically sophisticated way of codifying qualitative survey responses.

There are also a number of process-oriented methods of measuring the KM efficiency, whereby the process is broken down either into stages (KM value chain - Bots and de Bruijn, 2002) or elements (Massey, Montoya-Weiss et al., 2002), with effectiveness of constituent parts assessed separately. Arguably, this might make the challenge easier to tackle by limiting its scope and making it more accessible for modeling and measurement, however, the same key issues remain.

As a number of authors have highlighted (Fairchild, 2002; Bose, 2004), for any organization to commit resources to a KM initiative of any size, there will always be a need for some kind of justification, even though not necessarily monetary. So, the challenge of valuing the outcomes of KM implementation remains valid despite the acceptance of the complexity

and the intangible nature of knowledge; it is simply required by the decision makers in organizations.

Seeking KM justification from a purely financial point of view would, however, has two major drawbacks: first, limiting its scope to the business world, and second, missing the non-monetary dimension. Even if the impact on the bottom line or 'organizational performance' is discussed in the literature as a business measure, taking it as a substitute for a measure of organization's success would represent a significant over-simplification of the matter. Instead, a more universal approach would be to look at KM as a *key enabler* of an organization's overall strategy, accepting that a successful KM initiative will, in some way, help the organization achieve its strategic objectives. In contrast to the approaches discussed previously that are, in effect, 'bottom-up' (starting from the KM initiative in question, trying to understand the benefits and then looking at where they fit into what the organization is doing), this is a 'top-down' one: starting from formulating (or understanding) the company's strategic objectives, and defining then what would need to be expected from KM initiatives in order for the strategy to become successful. From this point of view, a successful KM initiative would be the one delivering against expectations in line with the overall strategy, or showing a good degree of strategic fit.

A methodology following those lines has been suggested by a number of authors (Fairchild, 2002; Bose, 2004), based upon Kaplan and Norton's Balanced Scorecard framework (Kaplan and Norton, 1996). Kaplan and Norton suggest that a firm's strategy includes – or should include - four components, or perspectives: Financial, Internal, Customer, and Learning and Growth. Even though Fairchild (2002), places KM into the Learning and Growth perspective, it can be easily demonstrated how the others are relevant as well (intellectual capital-based view, impact of KM on customer service etc.).

Adopting a strategic-enablement approach based on the Balanced Scorecard framework has several advantages. First, it is open to inclusion of any types of organizations and can be universally applied to any strategies, regardless of whether one has been formally formulated or not. Second, it eliminates the oversimplification; the success measurement methodology would be pragmatic and at least partly based on the opportunity cost: if a KM initiative enables the organization's strategy, its benefit will be in avoiding the cost of not realizing the said strategy. In essence, this approach can be taken phenomenologically: if KM is a key enabler and it succeeds, then the benefits of strategic success can be shared, regardless of what is going on 'inside' it. Furthermore, it allows for a degree of falsifiability: if a KM initiative doesn't feed into a strategic strand, i.e., does not act as an enabler, then the challenge would be to explain the reasoning for engaging into its implementation since there are no strategic benefits. Finally, it would allow to employ a variety of research methods – something the US Navy have tried doing – in investigating various aspects of how KM enables the delivery of the strategy: for example, Bose (2004), suggests the use of the *Economic value added* as a financial performance indicator, but at the same time, descriptive techniques can be used to capture the complex and the intangible. The difference is in the focus on strategy: a narrative in this case should be used to describe the link to the overall objectives rather than other outcomes (e.g., increase in knowledge sharing), however positive, if they are not relevant to the strategy.

#### **2.4.5. Knowledge Management: Conclusion**

The review of literature dedicated to Knowledge Management covered in this section highlights several important points. First of all, the field as a whole is still relatively new, and continues to develop. The definition of KM has no consensus about it, and even though

most papers concerning KM offer some kind of a definition (Vera and Crossan, 2003), the overlap is only partial

As the literature analysis shows, there are two most prevalent perspectives on KM that are directly linked to the way *knowledge* is understood. One is the content-based approach that treats it as *information* (e.g., O'Leary, 1998b), and KM therefore is seen as merely an instance of information management, excluding the 'softer', intangible aspects of knowledge from the subject area.

The other view, the *relational* perspective (Hayes, 2011), more popular among the social scientists, is increasingly gaining prominence. It is built upon the distinction between data, information and knowledge, the latter including contextual dimensions.

Still, the two different perspectives remain present throughout the literature on all KM's aspects reviewed so far, be it its very definition or the matters such as critical success factors, or success measurement.

## 2.5. Culture

As it was put in (Williams, 2011), not only “*culture is one of the two or three most complicated words in the English language*” (p. 87), but it is also used in a variety of disciplines and different, sometimes incompatible, schools of thought as an important concept. By Williams’s account (Williams, 2011; Bennett, Grossberg et al., 2013), the complexity of the term is partly due to its etymology – the root word it is derived from is Latin *Colere*, which means to ‘inhabit, cultivate, protect and/or honour with worship’. As the authors show, most of those semantic precursors can be found in the way the meaning of the word *culture* has been treated either in different disciplines, or at different times.

Brewis and Jack (2009) point out that this commentary on the complex semiotics of the term ‘culture’ often serves as a starting point for investigations of the different uses of the term in organizational context trying to address the multitude of different views on what culture is, and what the concept can be used for, in contemporary management and business studies.

In this section a theoretical foundation for the rest of the research is provided which, as it follows from the aim of the thesis, is directly linked to the notion of culture.

Although the particular variety the aim refers to is the *national* culture (as opposed to organizational one, or culture in general), the very concept is linked with, and based upon, more general cultural studies. Even chronologically, the first works dedicated to the role of culture in organizational life and reviewed later in this chapter (Ouchi, 1981; Pascale and Athos, 1982; Peters and Waterman, 1982; Deal and Kennedy, 1982) did not distinguish between the national and the organizational sides of culture, and it was not until the field

achieved some maturity that researchers started paying attention to the distinction between them.

Taking this into account, this subsection first discusses the works that pre-dated the advent of national culture as an area of research, in order to set the background and to explain the origins of the concept. It discusses the mainstream managerial views on *organizational* culture, but then also addresses the matter from a more critical perspective. It then proceeds to an overview of the *national* culture literature as a whole, with particular attention then given to Hofstede's Dimensions and the discussions they gave rise to.

### **2.5.1. Organizational Culture**

Culture as a research subject was first addressed by social anthropology around the turn of the XX century (Hatch, 1973); however, it was not until the early 1980s (Sondergaard, 1994) that the agenda for researching the role of culture in organizational life was opened up. By the second half of the decade it was identified as an important issue (Adler and Bartolomew, 1992) and is currently recognized as one of the major issues in organizational research, theory, and managerial practice (Alvesson, 2012). Some authors, however (Parker, 2000), do point out that the rapid increase in interest towards culture in management research represents a continuation of a more low-key, but nevertheless already existing stream in organizational studies – i.e., such research dedicated to organization *climate* as (Lewin, Lippitt et al., 1939; Fleishman, 1953; Argyris, 1957; and Hellriegel and Slocum, 1974), to name but a few.

It is argued (Brewis and Jack, 2009) that by 1980s, the attention of management scholars was attracted to the evidence that the 'hard', performance indicators-driven approach to managing organizations did not produce the desired increase on the bottom line (Alvesson,

2012), as well as to the success of the Japanese organizations that paid more attention to cultivating shared values rather than adopting a more traditionally American, rational approach.

Four books came out in the early eighties: Ouchi's *"Theory Z"* (Ouchi, 1981), Pascale and Athos's *"The Art of Japanese Management"* (Pascale and Athos, 1982), Peters and Waterman's *"In search for excellence"* (Peters and Waterman, 1982) and Deal and Kennedy's *"Organization Culture"* (Deal and Kennedy, 1982).

All four discussed the importance of intangible factors for organizations and their performance. Ouchi (1981), for example, similarly to Pascale and Athos, was comparing the American and the Japanese management styles. Ouchi's *"Theory Z"* states that if a corporate culture is created that all employees buy into, this will give a much greater degree of engagement, autonomy and creativeness than through any other kind of motivation: they will believe in doing a job to the best of their abilities.

Deal and Kennedy (1982) identified five elements of a corporate culture: business environment, values, heroes, rites and rituals, and the cultural network. The authors also made an attempt of taxonomizing culture in a two-dimensional framework, with the speed of feedback and reward (i.e., how quickly one typically feels the consequences of one's actions) vs. the level of risk (the propensity to take risks vs. a preference to 'play it safe') on the axes.

The authors' rationale for developing this model was that during their research only four distinct types of cultures were observed, and they are represented in the framework (fast/slow feedback and high/low risk, thus producing four combinations).

A book by Schein (1985) offered an equally simple, but nevertheless deeper and more universal way of looking at what culture is. Schein distinguished three levels in it – see Fig. 6:

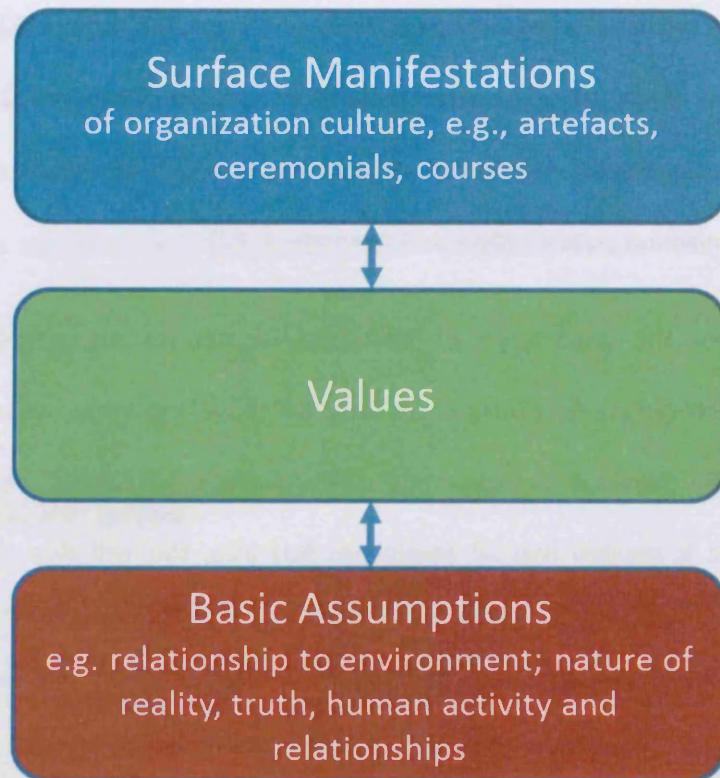


Figure 6: Schein's three levels of culture (based on Schein, 1985)

Schein offers a depth realist's view (Blaikie, 2007) on what the culture is: the reality is a set of manifestations that reflect the mechanisms below it, and yet there is another, fundamental, level that determines the workings of the cultural mechanisms, effectively the ontological and epistemological assumptions.

Schein's three-level model describes the culture's *structure*, rather than its content, and in this sense it is transferrable between contexts, including its applicability to both organizational and national cultures. From the model's point of view it is not important whether the elements belong to a particular organization or to the whole nation. Deal and Kennedy's model, for example, fits into it quite well as does the one implied by Ouchi's Theory Z. It can be used as a structure for comparative analysis between cultures (Schein doesn't give any indications as to whether two different cultures should be similar or different at *all* levels at once, and it would make sense to think that it does not have to be the case, e.g., the same values can manifest themselves differently in different circumstances), however, the content side of such analysis will require some further investigation.

Several attempts were made to offer alternatives to Deal and Kennedy's model, maintaining, however, the same point of view that culture is something that organizations *have*. For example, Denison (1990) has suggested four determinants of an organization's culture: mission (what the organization is believed to be there to do); adaptability (ability to change and to undergo organizational learning); involvement (the degree of employee engagement); and consistency (the degree of cohesion in the organization).

Similarly, O'Reilly, Chatman et al. (1991) have suggested a list of dimensions made up of different items: Innovation, Stability, Respect for People, Outcome Orientation, Attention to Detail, Team Orientation, and Aggressiveness.

One of the key points with regards to all of these frameworks is that a set of determinants listed in them is believed to be shared to some degree by the majority of employees in an organization, and this leads to the development of shared behavioral patterns that transcend the national borders.

However, some researchers, e.g., O'Reilly (1989) and Gordon and DiTomaso (1992) have put forth the notion of the *strength* of a culture, stating that even if a shared culture is present, it can be present to a different degree. The authors have proposed that the strength of a culture can be measured along two dimensions. The *intensity* of a culture describes the strength of the emotional attachment employees have to the core values of the organization, as well as their willingness to show approval or disapproval of their colleagues adhering to, or deviating from, the expected behaviors. The second dimension is the *sharedness*, i.e., how widespread is the agreement with regards to these values, and this is the 'majority' point. In essence, even if there is a strong belief in the values and other elements of the culture, but it is confined to the minority of the employees, it is believed not to make much impact.

There are, however, further layers of complexity. First of all, a few sources, e.g., (Schein, 1985), have highlighted the importance of the owner/creator/leader of the company as the starting point for determining the organization's values. Deal and Kennedy (1982) have also mentioned the 'heroes' as one of the culture's determinants, although they do not necessarily have to be in formal leadership roles. Lorsch (1986), in the definition of an organizational culture, is also referring to a shared belief among the *top managers* towards the way of conducting the business. What these works point at is that it is not only important as to what *proportion* of employees subscribe to a certain set of beliefs, but it also matters how high in the organizational hierarchy they are.

This gives raise to another consideration, namely that of the existence of *subcultures* (Hofstede, 1998b). By the author's view, the existence of the same shared beliefs and values throughout an organization is said to be disputable, and certain values can belong with subgroups in the organization. The degree of cultural homogeneity in an organization can vary, and the values held by the top management can be different from those of the

workforce. Furthermore, they can differ between functions and/or social strata within them.

In a broader sense, this dilemma represents a diversion between three perspectives (Martin, 1992). The *integration* perspective implies that culture is an organization-wide phenomenon (Martin and Frost, 1995), i.e., that a culture can be said to exist when the *whole* organization subscribes to certain values and beliefs, and people conduct themselves accordingly. The *differentiation* perspective, more attuned to cultural anthropology, however, maintains that if an organization is big enough and diverse enough in terms of social strata (e.g., white/blue collars), nature of work (manual/managerial), geographical dispersion, and so on, to form sub-groups, they are likely to form sub-cultures of their own, not necessarily compliant with the views of the top management that Schein (1985) was talking about. Martin and Frost (1995) accuse integration-perspective researchers of methodological blindness, whereby the sampling and the composition of their questionnaires were, in Martin and Frost's view, designed specifically to find the link between culture and *leadership*, focussing mostly on the top tiers of organizations. The *Differentiation* perspective employs ethnographic research methods rather than surveys, and studies such as (Gagliardi, 1990) show that indeed, subcultures can exist in organizations where sub-groups can be identified.

Martin (1992) suggests a solution to the apparent impasse by suggesting the third, *fragmentation*, perspective, saying that not only the boundaries between the organization-wide culture and subcultures are blurred, but also that it is a dynamic phenomenon that can form around a specific issue and dissipate once the issue loses its relevance. The fragmentation perspective suggests that organizations neither have a unified culture, nor are they represented purely by a mosaic of different subcultures; rather, they are a more complex and dynamic mix of both.

At the fundamental level, works by Schein (1985), Deal and Kennedy (1982) and their followers in the mainstream managerial school share one important commonality in the treatment of culture as something that organizations *have* (Smircich, 1983), and something that is observable and measurable.

This view on culture has been critiqued for a number of reasons (Brewis and Jack, 2009): a) methodological deficiencies; b) ontological misconceptions with regards to the *nature* of culture; c) *management* of culture being merely a means of exercising managerial control, and d) the reductionist, unitarist approach ignoring the complexity of the phenomenon.

The second (methodology – i.e., selection bias) and the fourth (reductionism) points are quite close to the discussion of the debate between the integration and the differentiation perspectives. The critical view on culture, however, offers a different way of looking at it from the *ontological* perspective (point b), namely, viewing it not as what organizations *have*, but rather, what they *are*, or how they come to being (Smircich, 1983; Morgan and London, 1998). In this view, culture is not a parameter of an organization, a variable that can be managed by senior members of an organization (which goes directly against the view that it originates with the owner or the leader). Rather, beliefs, norms and values are collectively created in a dynamic process of interaction between the realities of working lives and individuals' personalities, wants, needs, emotions and aspirations. This view essentially maintains that culture is coming from everywhere, and is a processual, holistic, dynamic, emergent and pluralistic phenomenon (Brewis and Jack, 2009).

Smircich and Calás (1987) suggested that the multitude of 'is' (as opposed to 'has') views on organizational culture can be categorised according to a number of key features. First, it can be described in terms of the anthropological themes, e.g., organizational cognition and symbolism; second, by the sociological paradigm (e.g., functionalist, critical, interpretive

and so on); and third, by the epistemological interest, i.e., a specific focus towards the technical, practical, emancipatory, and so on, aspects of culture (Brewis and Jack, 2009).

It is difficult to disagree with the four points of criticisms '*is*' theorists put forth against the '*has*' ones (methodology, ontology, exercising managerial control and reductionism). Various methodological flaws in the seminal works of the '*has*' viewpoint have been highlighted many times; e.g., Parker (2000) and Thompson and McHugh (2002) pointed out multiple instances of selection bias in (Peters and Waterman, 1982), and McSweeney (2002) challenged the validity of the data gathering methodology employed in the research for (Hofstede, 1980), as well as its ontological assumptions about the nature of culture that are outlined in more detail in the next sub-section.

Moreover, even by Schein (1985), which is one of the most highly cited texts in the '*has*' paradigm, culture is a complex, multi-layer phenomenon influenced by a variety of different factors. Thus, the validity of the reductionist approach based on simplifying such a complex phenomenon down to a few dimensions could be questioned.

At the same time, it can be argued that the '*has*' approach is offering a *model* of culture and as such, it is not attempting to provide a complete, holistic picture, but rather, to suggest a framework describing a portion of the phenomenon significant enough to highlight trends, commonalities and differences. Inevitably, modelling will be an approximation to the real subject, and will have its limitations. It will lack complexity captured by more ethnographically-informed studies; it will provide a snapshot in time rather than describe the development of culture; it will not explain the dynamic mechanisms underlying the *process* side of it. However, as long as those limitations are recognized and taken into account, the approach has its place, especially for the purposes of comparative analysis, whereby a like-for-like comparison between different cases is carried out.

The aforementioned limitations were taken into account as much as possible in this research. As it will be described in the Discussion chapter, some evidence was found for the chosen cultural framework's convergent and predictive validity, which answers the first point of criticism (methodology) at least partly. The matter of reductionism was addressed by employing the comparative idiographic case study method for the qualitative stage, which enriched the quantitative results with contextual, illustrative data. Finally, the ontological argument, although fundamental in nature, was of lesser importance from the main research question's point of view: since it was aiming at describing and comparing the *manifestations* of the culture's influence on Web 2.0 users' behaviour, understanding the underlying mechanisms creating particular behavioural trends was outside of its scope. For example, although it was shown that such matters as trust and power played an important role in using Web 2.0, the research was focussed on describing *how* trust and power mattered, rather than on investigating *why* they were treated in a particular way in a given country/organization, or where these trends came from.

Another important point related to culture that warrants a more detailed discussion is its influence on Knowledge Management practices: the aim and objectives of this research relate to it. Although they refer to *national* culture and *KM 2.0*, as it will be discussed in section 2.6.2, this particular combination of their varieties has not been investigated to a great depth in the literature, and this is one area where this thesis can make a contribution in developing it further. However, in order to do this, it is necessary to look at the national culture/Web 2.0 combination's precursors, i.e., the literature referring to culture and KM in general.

As it was discussed in the section dedicated to Knowledge Management, the right culture is often identified as a success factor for KM initiatives; it appears that there is a consensus with regards to the importance of organizational culture (Davenport, De Long et al., 1998;

DeTienne and Jackson, 2001; Barrett, Cappleman et al., 2004; King, 2007; Zheng, Yang et al., 2010, as well as many others). But how exactly does the culture affect knowledge management, what is the mechanism?

Many researchers agree (e.g., De Long and Fahey, 2000; Alavi, Kayworth et al., 2006), adopting Schein's three-level model of culture, that it influences the effectiveness of KM through forming a specific kind of *values* conducive to openly creating and sharing knowledge.

De Long and Fahey (2000) identify four ways in which organizational culture exerts its influence on KM through values: first, it shapes up assumptions with regards to what knowledge *is* and what is worth managing (for example, different amount of focus put on capturing and retaining tacit knowledge). Second, it defines the power component of dealing with knowledge in an organization: who should control it, who must share and who can keep it to themselves. Third, it creates social context for knowledge-oriented processes by setting rules of behavior – for example, meeting rituals, rules of discussion and so on. Fourth, culture defines processes for dealing with new knowledge; the authors identify that in order to stimulate new knowledge creation and adoption, external knowledge needs to be viewed as a starting point for the internal process, debates must be encouraged, high level of participation must be observed, and the organization must be ready to challenge the ways things were done in the past.

Alavi, Kayworth et al. (2006) identify a number of *values* that play an important role in KM practices. At the organizational level, the authors list expertise, formalization and innovation, and at the localized level – autonomy and collaboration. Most importantly, Alavi, Kayworth et al. come to a conclusion that different combinations of these values will not lead to KM initiatives success or failure *per se*, at least not directly. Instead, they will determine what systems and technologies are adopted (collaborative environments and

software vs. knowledge repositories, for example), what the purpose of their use might be (e.g., knowledge sharing or creation vs. self-promotion) and what functionality is used. The authors have also shown that the outcomes of KM initiatives are likely to be consistent with the existing culture, which is also consistent with (McDermott and O'Dell, 2001), who said that KM needs to *match* the cultural background in order to be successful. For example, if collaboration is a high-priority value, KM implementation is likely to increase the degree of collaboration, i.e, KM implementation can act as an amplifier for existing values. Finally, the influence of values on the organization's approach to implementing KM (top-down or bottom up, formalized or informal and so on) is also noted.

Stock, McFadden et al. (2010), based on a competing values framework of organizational culture by Cameron and Quinn (2011) (Cameron and Quinn's cultural framework itself suggests that all cultures could be placed into a 2x2 grid, with internal/external focus on the horizontal axis and control vs. flexibility on the vertical one), have shown that flexible cultures provide a positive background for knowledge acquisition, but found no link with knowledge dissemination; the authors also found that group (collectivist) culture was positively related with knowledge responsiveness; rational culture, with knowledge acquisition and knowledge dissemination; and hierarchical culture was negatively related to knowledge dissemination.

Supporting Schein's view that organizational culture depends largely on the top figure in the organization, Nguyen and Mohamed (2011) have carried out an investigation of the role of leadership on KM initiatives in Australian SMEs and found that indeed, there is evidence supporting claims that strong transactional and transformational leadership have positive impact on KM practices, with organizational culture playing a mediating role.

Furthermore, authors such as Tseng and Fan (2011), have addressed the link between the organizational culture and knowledge management from the ethical perspective. Assessing

the influence of the three elements of a framework of the organizational ethical climate (self-interest, social responsibility and law/professional codes), the authors have found that strong ethical climate does have a positive influence on the attitude towards, and participation in, knowledge management. It could be argued that these elements represent an ethics-related type of organizational values, too. It is worth pointing out that Akhavan and Rezaeenour (2014) have investigated the relationship between social responsibility, knowledge management and organizational culture; it was found that KM can play a positive mediating role between culture and responsibility.

Rai (2011), corroborating the findings in (Tseng and Fan, 2011) and (Nguyen and Mohamed, 2011), and referring to the Competing Values Framework (Cameron and Quinn, 2011), has suggested a theoretical framework connecting ethical and leadership-related values with knowledge management, however, in line with (Alavi, Kayworth et al., 2006), it has been suggested that the values are likely to determine the shape of the knowledge management initiatives; typology related to it has also been offered.

From the *innovation* point of view (related to knowledge creation), Donate and Guadamilas (2010) have found that a strongly knowledge-oriented culture has a positive influence on practices related to knowledge storage and knowledge transfer, thus making a positive impact on the organization's overall innovation performance. Similarly, Naranjo-Valencia, Jiménez-Jiménez et al. (2011), have shown that a hierarchical structure is more conducive to *imitation* strategy (i.e., re-application of knowledge from elsewhere), and an 'adhocracy' (a haphazard, lasses-faire culture more akin to the organic nature of Web 2.0) is more conducive to new knowledge creation.

A number of conclusions that can inform the rest of the research can be made based on this sub-section. First and foremost, although Deal and Kennedy (1982) described culture simply as 'the way things are done here' (routines, ways to do things, rites and rituals,

organizational lore), the more prevalent view is that despite its importance, the observed behavior that Deal and Kennedy were talking about is but the tip of the iceberg, and it is a surface manifestation of more deeply- engrained levels, a combination of shared basic assumptions, values, beliefs, and so on (Schein, 1985). It can vary in strength, i.e., the degree to which the values and other elements are shared by employees (O'Reilly, 1989; Gordon and DiTomaso, 1992), and can also be broken down into sub-cultures which may or may not deviate from the whole organization's background (Hofstede, 1998b). It could be hypothesized that should the underlying beliefs and values dictated by the national and organizational dimensions differ from one another, the observed result will depend on which part of the culture is stronger. An example of such a situation can be found in case if a foreign organization is establishing a subsidiary in a country with significantly different norms – e.g., Jackson (2011) is discussing such dilemmas in relation to ethics, and Özbilgin and Tatli (2008), to international diversity management.

The overview of the culture vs. KM literature suggests that the answer to the second research sub-question (“*Is there any evidence that the national culture plays a role in the internal use and adoption of Web 2.0?*”) may be positive: there is evidence in support of the claim that culture in general does have an impact on ‘conventional’ KM (Davenport, De Long et al., 1998; DeTienne and Jackson, 2001; Barrett, Cappleman et al., 2004; King, 2007; Zheng, Yang et al., 2010), mostly through different values (De Long and Fahey, 2000; Alavi, Kayworth et al., 2006), some of which may be conducive to KM initiatives, and some might be acting as inhibitors. Answering the sub-question directly, however, would require a more detailed overview of the *national culture* literature (next sub-section) and Web 2.0 (Section 2.6).

## 2.5.2. National Culture

The idea that certain sets of basic assumptions, values and surface manifestations can pertain to nations has gained prominence in the management literature from mid-1980s, although some publications came out as early as 1960s (Hall, 1960 and Hall, 1976; Kluckhohn and Strodebeck, 1961). Morden (1999) classified existing national culture models into three groups: first, single-dimension models, are represented by Hall's high-low context one (Hall, 1960), as well as mono/polymorphic (Bottger, Hallein et al., 1985), idiocentric-allocentric (Triandis, 1995) and high-low trust (Fukuyama, 1995) dichotomies, among others. The second group is multidimensional, e.g., (Kluckhohn and Strodebeck, 1961) (two dimensions); (Newman, Summer et al., 1977) (five); (Lessem and Neubauer, 1994) (two); (Hampden-Turner and Trompenaars, 1994) (seven) and most notably, (Hofstede, Hofstede et al., 2010) (six). The third group contains more holistic historical-social models, such as South-East Asian one (Chen, 1995). A number of publications have also suggested a process-oriented view on culture rather than using a set of parameters, which would put them outside of Morden's classification (Trauth, 2000; Myers and Tan, 2002; Straub, Loch et al., 2002).

Regardless of the framework's particularities, the very *concept* of the national culture has been criticized for a variety of reasons, e.g., the notion of a nation-state has been challenged for historical reasons (most major nation-states have formed only very recently) and those of oversimplification (there are multiple examples of multi-nation states) (Myers and Tan, 2002), as well for its meaningfulness as a unit of analysis (Straub, Loch et al., 2002). Myers and Tan (2002) have also argued that culture cannot be viewed as something static, but instead, it is a dynamic and emergent phenomenon.

Despite its limitations, the fixed-dimension approach and the idea of a nation-state dominates the field (Corbitt, Peszynski et al., 2004), and among the frameworks of this

type, Hofstede's one is the most prominent: Myers and Tan (2002), for example, found that around two thirds of all cultural research done in information management is based on it. As per Christmas 2010, the first book describing the framework (Hofstede, 1980), by prudent assessments counting together various reprints, is reaching thirty thousand citations on Google Scholar.

The framework was published twice: in (Hofstede, 1980), but also in (Hofstede, 1991) and consecutively (2005) and (2010), which is a practitioner version with less attention given to the methodology. Even though subject to criticism, which warrants a more detailed discussion, it has been hugely influential in the field of national culture studies. For example, one of the scholars critical of the findings (Ailon, 2008), cites as many as 17 different papers, most of them highly cited on their own, describing Hofstede's framework as pivotal for inter-cultural and international business studies as well as psychology, describing it as a "*monumental study*", "*path-breaking*", "*astounding*", a "*classic*" and even a "*super-classic*" and a "*standard*".

Hofstede carried out the research in IBM between 1965 and 1971 (Hofstede, Hofstede et al., 2010); the company by its design was suited well for such research, with similarly structured and locally managed subsidiaries in 66 countries dealing with marketing and customer service. The homogeneity between branches allowed singling out national variables, whereas for occupational differences, a comparison between departments could be done.

The research took the form of attitude surveys generating 117 000 answer sets over 6 years and was cross-checked with a similar research carried out by Hofstede in IMEDE Business School in Lausanne between 1971 and 1973. The surveys were carried out in 20 different languages with a special effort given to ensuring that translations were not only accurate, but also culture-neutral as much as possible. Results were then statistically processed using

frequency distributions, correlations and factor analyses across individuals, variance analyses by country, gender, occupation and age, and ecological and factor analyses.

From the commonalities highlighted during the research, Hofstede and the team have devised a set of comparative parameters describing cultures in relation to one another.

The original set of four parameters, commonly known as 'Hofstede's Dimensions', was: Power Distance Index (PDI), Uncertainty Avoidance Index (UAI), Individualism Index (IDV) and Masculinity (MAS).

PDI describes the degree to which inequality is accepted in social settings such as work, school, family and so on. A low PDI culture is egalitarian: those in power must be legitimized to be in such position, and their actions are still subject to a judgment between good and bad; power must be downplayed, the system is to blame if things go awry and everyone has equal rights; a high PDI culture will be the opposite in all respects; extreme cases, however, are fairly rare and most cultures will be somewhere between the two. Hofstede comes up with a list of precursors for Power Distance (Hofstede, 1980), such as climate, degree of technological development, political system's development stage, nation's wealth and the evenness of its distribution etc., identifying the latitude, population size, and wealth as PDI's precursors.

The second dimension, UAI, is an indicator of how tolerant towards uncertainty a culture is, which is made up of three constituent parts: rule orientation, employment stability, and stress. A low UAI culture is tolerant and non-aggressive, less emotional and more constructive in conflict, relaxed about rules and believing in common sense. Hofstede, among other factors, attributes high or low UAI to political history: the lowest UAI can be seen in 'older' democracies whereby the history of political and economic stability allowed for a tolerant and more relaxed attitude to develop. The younger a democracy or the less democratic a state is, and the more big-scale change a country has been through recently,

the higher will be the UAI (these points are highly relevant as far as comparison between the Anglo-Saxon and the Russian cultures is concerned).

The essence of the third one, Individualism/Collectivism (IDV) is the degree to which an individual perceives themselves as part of a group, and how strong their social ties are: high IDV means thinking of oneself as 'me' and weak ties, whereas low-IDV, collectivist culture implies more of a 'we' thinking and propensity to operate in smaller but more tightly-knit groups.

The last of the original four dimensions is Masculinity (MAS), and it shows whether achievement is more valued in a culture than caring for others. Low-MAS (feminine) cultures are people-oriented, concentrating on quality of life and showing harmony and flexibility.

Over the time, two more dimensions were added; Long-term orientation (LTO) and, in 2010, Indulgence vs. Restraint (IVR). Cultures scoring high on LTO are oriented towards the future and thus valuing persistence and adapting to change; short-term-centric cultures look at past and present, respecting national pride and history, tradition and social obligations.

IVR, in turn, describes how much fun one is allowed to have in life: indulgent cultures are more positive with regards to satisfying the immediate and basic human needs and wants around enjoying life, whereas the restrained ones, conversely, put more emphasis on restrictive social norms (Hofstede and Hofstede, 2010a).

As an illustration, Table 1 contains scores for *predominantly* Anglo-Saxon countries and Russia (simply taking an average across the Anglo-Saxon scores is not a statistically robust method, but it can still serve as an illustration) (Hofstede and Hofstede, 2010b).

Country	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-Term Orientation	Indulgence vs. Restraint
Australia	36	90	61	51	21	71
Canada (English)	39	80	52	48	36	68
Great Britain	35	89	66	35	51	69
New Zealand	22	79	58	49	33	75
South Africa (White)	49	65	83	49	N/A	N/A
USA	40	91	62	46	26	68
<hr/>						
Average A-S	37	82	64	46	33	70
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Russia	93	39	36	95	81	20
<hr/>						
Deviation (points)	56	-43	-28	49	48	-50

Table 1: Comparison between the Anglo-Saxon and Russian cultural dimensions' scores.

As it can be seen from the table, a typical Anglo-Saxon culture can be described as moderately egalitarian (medium-low PDI), highly individualistic, moderately masculine, short-term oriented and indulgent. The Russian one is the opposite in all respects: it has a very high degree of accepted inequality, is moderately collectivist and feminine, with very low uncertainty acceptance, strongly long-term oriented and very restrained. Great Britain is a typical representative of the Anglo-Saxon group: with the exception of uncertainty avoidance, whereby it scores the lowest, the remaining values are close to averages. It can be concluded that, within the context of Hofstede's Dimensions, Anglo-Saxon and Russian cultures represent a good pair for comparative analysis: they are consistently different.

Hofstede's approach and results, despite being a 'super-classic', have attracted some criticism. For example, Baskerville (2003), asked a question of why the notion of cultural dimensions has not been accepted by sociologists and anthropologists, as the citation analysis in the paper shows, and why, instead, the framework has remained largely within the management practice domain.

Baskerville identified a number of issues: equating nation-states with cultures; the use of quantitative methods to describe cultures; and attempting to observe cultures 'from without', which is not the most highly regarded method in anthropology. Hofstede's provided a response to this paper (Hofstede, 2003) with the following abstract: "*Baskerville does not realize that there exist different paradigms in the social sciences about the meaning of "culture", leading to different research approaches. Her arguments are therefore largely irrelevant to cross-cultural accounting research.*" (ibid., p. 811 – both papers were published in Accounting, Organizations and Society journal, hence the reference to accounting). The rest of Hofstede's response is equally dismissive, however, the author's defense highlights a number of straightforward omissions and inaccuracies in Baskerville's research; the more surprising is Baskerville relatively high citation rate (176 citations in Google Scholar as per January 2011 compared to only 39 given to Hofstede's response).

There are a number of other publications critical of Hofstede's work, but two have attracted the most citations. One, (McSweeney, 2002), identifies five crucial assumptions the research is based upon and argues that they are all flawed: first, that national, organizational and occupational cultures are discreet and independent; second, that national culture is identifiable in the micro-local environment; third, that national culture creates questionnaire response; fourth, that national culture can be identified by response difference analysis, and fifth, that the culture is the same in any circumstances within a

nation. The key argument is that a study of a number of subsidiaries of a company, or a number of companies, through surveys, cannot produce valid conclusions regarding national cultures where those subsidiaries or companies are located.

Another paper (Ailon, 2008) deconstructs the methodology by turning it on itself, i.e., analyzing the research design using the same dimensions and showing that the way it has been created was significantly influenced by cultural values of the designers themselves. The author refers to matters like exclusion of colonial relationships from the PDI analysis, which, in the author's view, is a serious drawback as far as acceptance of inequality is concerned; low tolerance towards uncertainty manifested in Hofstede's work being an attempt to simplify a complex matter and thus to bring more certainty in, stereotyping gender roles and so on.

Ailon's arguments have some supporting evidence. First, Hofstede from the first edition of the book acknowledged the danger of a cultural bias as an issue and included an appendix describing his own personal background and values arising from it (Hofstede, 1980). Besides, the continuous expansion of the framework in order to include new dimensions is a clear illustration of the Western cultural bias acting as a limiting factor in the research design: the survey contained questions related to factors encountered by the research team in their own cultural paradigm, and did not include others not manifesting themselves in the West, i.e., the Confucian dynamism later observed in China (Hofstede, Hofstede et al., 2010).

To answer all these critical points, as well as those touched upon in the beginning of this section, it is important to remember that the study was strongly positivist in nature and is therefore indefensible from any other ontological point of view; any attempts to *universally* justify the use of a trans-cultural quantitative methodology can be reduced to comparing different ontologies and therefore will lead to a stalemate. Within the positivist paradigm,

however, the study with all its imperfections and limitations still holds: the empirical data - survey responses – was used to create a theory explaining it; based on the theory, predictions were made and tested, with a multitude of studies confirming them partly or wholly (Sondergaard, 1994). The theory may have real or potential design flaws such as a cultural bias, however, their existence does not make the theory altogether invalid. Instead, it would be more appropriate to talk of the theory's *limitations*, and as long as the theory keeps producing predictions that are confirmed by empirical data, it can be said that limits have not been reached.

Ailon's critique in this respect may explain *why* there are some of the limitations to the model, but not invalidate it. Equally, McSweeney's criticism regarding the inductive research strategy does not hold: inductive methods are widely used in science and moving from a small scale lab experiment to a more general theory is an approach that is very common.

Despite the criticism and the model's limitations, the choice was made to maintain Hofstede's Dimensions as the cultural framework for this research, for two reasons.

The first one was concerned with the choice of the overall approach – e.g., the 'has' vs. 'is' debate mentioned earlier in this chapter, as well as using dimension-based, measurable frameworks like Hofstede's, Hall's or Hampden-Turner and Trompenaars' (Hall, 1960; Hampden-Turner and Trompenaars, 1994; Hofstede, Hofstede et al., 2010) as opposed to a more qualitative and descriptive approach (Chen, 1995; Redding, 1990; Redding and Witt, 2007). From this point of view, the decision to use the former was dictated chiefly by the first research objective ("*to verify the initial hypothesis concerning the macro-scale link between the use of Web 2.0 in public domain and national culture*") and the research sub-question related to it ("*Is there evidence of a relationship between national culture and the use of Web 2.0 in the public domain*"). In order to achieve the objective, culture would have

to be described in measurable terms, i.e., via a set of parameters; otherwise it would be technically impossible to test whether correlations exist. Admittedly, the reductionist nature of this approach would lead to less richness in data compared to what more descriptive techniques offer. However, this was required and justified by the first objective and the analytic method it called for: since the phenomenon under investigation belonged on the macro-level, some reduction in the level of detail was required in order to carry out the comparative analysis between a large number of countries. Moreover, this issue would be alleviated, as it will be shown in the Methodology chapter, by combining the quantitative approach with an in-depth qualitative analysis of relevant cases providing descriptive, contextual examples of how certain culture-bound behaviours manifested themselves.

The second reason for choosing Hofstede's Dimensions as the foundation for the research was concerned with the choice of the particular framework out of available dimension-based models; this choice was justified in a number of ways. From a pragmatic position, Hofstede's Dimensions is the most widely used cultural framework in management studies (Ailon, 2008). Since this framework is a *lingua franca* among the cross-cultural researches and practitioners, using it would allow this research to join the already existing debate. Furthermore, a closer look at the alternatives showed that there is a significant degree of overlap between them. For example, elements of Hall's high-low context dichotomy (Hall, 1960) can be found in Hofstede's descriptions of PDI and IDV; similarly, several dimensions in Hampden-Turner and Trompenaars' model (Hampden-Turner and Trompenaars, 1994) relate to those of Hofstede's: Individualism/Communitarianism and Specific/Diffuse, to IDV; Achievement/Ascription, to PDI, and so on. Some frameworks, e.g., GLOBE survey (House, Hanges et al., 2004) explicitly include Hofstede's dimensions. Differences between frameworks do exist, however, none of the dimension-based alternatives considered for

being used as the foundation for the research offered distinct advantages making them fit the research questions, aim and objectives better than Hofstede's.

As a whole, the combination of the methodological requirements of the first objective with allaying the concern regarding the loss of complexity in the data by mixing it with a qualitative approach, as well as the pragmatic considerations, were deemed sufficient to justify the choice of Hofstede's dimensions as the main cultural framework.

### **2.5.3. Culture: Conclusion**

To summarize the key themes, it needs pointing out that the subject of culture was brought to the management research community in the early eighties and is now seen as one of the key areas of organizational research (Alvesson, 2012).

Deal and Kennedy (1982) described culture and 'the way things are done', i.e., a particular way the same tasks can be performed in different organizations. Schein (1985) suggested culture is a multi-level phenomenon, and the aforementioned 'way to do things' is a surface manifestation of the values and beliefs underpinning it.

The field is quite mature, and different views exist on where the culture originates from, i.e., whether it is the founder/CEO/owner (Schein, 1985), or someone else that is the source, for example, 'heroes' (Deal and Kennedy, 1982) or top management (Lorsch, 1986). Different perspectives also exist on whether culture is an organization-wide phenomenon, or it can be broken down into a number of sub-cultures (Martin, 1992; Martin and Frost, 1995); and on the lists of factors and components that either influence it or make it up (Denison, 1990; O'Reilly, Chatman et al., 1991).

A large number of authors agree, however, that whatever the origins and the make-up of culture might be, it is an important factor as far as KM is concerned, and certain values can be an important success factor for KM initiatives (Davenport, De Long et al., 1998; DeTienne and Jackson, 2001; Barrett, Cappleman et al., 2004; King, 2007; Zheng, Yang et al., 2010).

A distinction is often drawn between *national* and *organizational* cultures: some traits are attributed to systems of surface manifestations, values and basic assumptions characteristic to particular *organizations*, and some can be observed across whole *nations* (Hofstede, 1998a).

As far as the latter are concerned, one of the most prominent frameworks dealing with the comparison between different national cultures is Hofstede's cultural dimensions (Ailon, 2008). Despite some criticism and the framework's continuous development – the last published version has been expanded again, now to include the sixth dimension – it can be used as the basis for this research for the reasons dictated by the research question and pragmatic considerations.

A conclusion can be drawn that combining the evidence for the importance of culture in KM success with the national culture frameworks suggests that KM should be national culture-sensitive. At the same time, Web 2.0 is labelled as a 'new version' of the Internet because it is, as it will be shown in the next section, believed to be fundamentally different, technologically and behaviourally, from the 'old' one, and thus the validity of the conclusions with regards to its sensitivity to national culture traits can't be *assumed* to hold, and it would need to be verified empirically.

In order to clarify some of the issues raised above, as well as to provide a further foundation for the research, the last section of the literature review is dedicated, firstly, to

describing what Web 2.0 is, and then to discussing the literature related to the role of culture in Web 2.0's adoption and use.

## 2.6. Web 2.0

### 2.6.1. Literature Analysis

The term 'Web 2.0' was suggested in 1999 (Ruiz, 2008). It describes the 'new' version of the Internet, whereby the content is created by a multitude of users, rather by a limited number of website creators (the 'old' way); it is exemplified by such types of web services as Wikis (Wikipedia, WikiHow), social networks (Facebook, MySpace), and media sharing sites (Youtube, Instagram).

The term and the field of study are young even in comparison to Knowledge Management: about fifteen years old. It does not mean it is not published about; instead, the publication profile is very different from longer-established established fields.

One of the most cited authors is an MIT researcher Andrew McAfee, who coined the term 'Enterprise 2.0' for companies utilizing Web 2.0 technologies in their operations in an article titled "*Enterprise 2.0: The Dawn of Emergent Collaboration*" (McAfee, 2006) and subsequently published a book on the same subject (McAfee, 2009). The paper and the book do not differ conceptually from one another, and the book expands and enriches the framework set out in the paper by using examples and case studies as well as providing a more detailed discussion.

One of McAfee's key contributions is identifying six key features that make 2.0 technologies different from the 'older' platforms; the author uses an acronym SLATES for them, which stands for Search (a built-in search mechanism), Links (interlinked context, e.g., Wikipedia articles connecting with one another), Authoring (content co-creation), Tags (a facility to mark certain content with subject labels), Extensions (linking user activity with a wider context – i.e., 'customers who viewed this, also viewed...') and Signals (instant notifications of content updates). Some of these features existed in the past and some did

not; most Web 2.0 examples, such as Facebook and Wikipedia, however, combine them all, and arguably this is what sets them aside.

McAfee (2009) identifies two 'ground rules' that are present in all Web 2.0 platforms: usability (one does not need to be anything but a PC-literate user to fully participate in content creation and use) and absence of structure, which in turn leads to a shift in the role of a manager: Web 2.0 does not require directive management style, and such style will only inhibit it.

In the last two chapters of the book, McAfee (2009) brings up two topics already touched upon in this review. The first one is the benefits of Web 2.0 implementation, or being more precise, the use of return on investment (ROI) for its justification. McAfee is highly critical of the purely financial approach, invoking Kaplan and Norton (1996) and suggesting that a business case should, instead of ROI, include costs vs. improvements of organizational capability and footprint (geographical, functional, divisional etc.); in the author's view, this is a more meaningful approach that will, even though not providing a financial justification for a decision, give managers enough information for making a choice.

Another subject is in line with the topic of this research. Citing (Argyris and Schön, 1996), McAfee establishes a link between Web 2.0 tools and the behavior they both require and promote: the author argues that Web 2.0 has essentially a *double-loop* philosophy, whereby the *single-loop* learning implies trying to solve the same problem repeatedly without modifying the approach or questioning the aims, and the *double-loop* one involves learning the *method* of addressing the problem (single- and double-loop learning behaviors are referred to in the book as 'Model 1' and 'Model 2' respectively). Web 2.0 is egalitarian and pluralist, the information is created and distributed freely with little management control or without it altogether; therefore, organizations using it will drift towards 'Model

2' behavior (McAfee admits, though, that mere implementation of Web 2.0 will not be enough to drive the change on its own).

Another book is worth mentioning before moving on to the journal publications (Tapscott and Williams, 2008). It offers an explanation of why Web 2.0 and the modus operandi it drives make economic sense. The authors refer to Coase's Law, a principle explaining the relationship between transaction costs and diminishing returns in relation to a firm's expansion: the growth will continue until the cost of establishing a new transaction exceeds returns from it. The authors argue that Web 2.0, due to its openness, peering, sharing and global reach, is dramatically reducing transaction costs, and therefore Enterprises 2.0 will have competitive advantage over the 'old-school', higher transaction cost ones.

As far as the journal articles are concerned, there are several common themes among approximately fifteen hundred entries in ABI/INFORM (as per January the 9<sup>th</sup> 2011, full text search for 'Web 2.0' keyword in the Business and Management section). A large proportion (just over a hundred papers) are concerned with the use of Web 2.0 technologies in libraries. Slightly fewer are dealing with the matters of marketing and consumer/customer management and roughly the same number - with the new technologies' application in education; a few are covering the issue of information security.

The uses of Web 2.0 covered in the literature can be split into their internal and external applications. Externally, Web 2.0 technologies are used for marketing, sales and customer support (Bernoff and Li, 2008; Venkatraman, 2010; Andriole, 2010) as well as CSR (Jones, Temperley et al., 2009; Chen, 2009; Fieseler, Fleck et al., 2010).

Internally, they can be employed for innovation and R&D; Newbold and Azua (2007) and Bjelland and Wood (2008) are talking specifically about how Web 2.0 is used for innovation purposes in IBM, and Ribiere and Tuggle (2010), Andriole (2010) and Bennett, Owers et al. (2010) – about the same aspect in general. The positive impact of Web 2.0 usage on R&D

identified by the authors is the increase in speed and agility (Ribiere and Tuggle also point out that the new technologies enable ‘bottom-up’ innovation processes); this is attributed by most authors to improved communication and more efficient collaboration between team members. Other non-KM uses of Web 2.0 mentioned are internal communications: CEO’s blog (Wyld, 2007), training (Andriole, 2010) and productivity improvement (Siddiqui, 2009).

Some papers are discussing the positive effect of Web 2.0 on morale, e.g. (Bennett, Owers et al., 2010) – through decreasing the degree of isolation one feels at the workplace, and manifesting itself in better employee retainment through an improvement in job satisfaction (Strategic Direction, 2009).

As for the role of Web 2.0 can play in KM, just over sixty articles in this area can be grouped into 20 streams sometimes represented by an isolated paper, such as business benefits (Andriole, 2010) or synthetic worlds (Burley, Savion et al., 2010); other topics discussed are various software and platforms, e.g., (Grossman, 2008) – iBridge, and (Donnelly, 2010) - GIS in libraries; tagging and folksonomy (Grinham, 2007; Parise, Guinan et al., 2009; Lee and Ge, 2010; Matthews, Jones et al., 2010; Wu, Gordon et al., 2010); Wikis (Grace, 2009; Yates, Wagner et al., 2010); however, the matters of collaboration and knowledge sharing stand out as receiving the most attention.

Two papers provide a general overview of the role Web 2.0 plays in knowledge management. Patrick and Dotsika (2007) are discussing such issues as difficulties with knowledge modeling in Web 2.0 context, the matter of standardization, security concerns and the question of maintenance, but more importantly, the key idea is that Web 2.0 provides an opportunity for knowledge sharing systems to be developed ‘from within’, i.e., through the empowerment of the end-user via a bottom-up process, meaning further shift from an approach focused on IT systems to the one “*building on the information and*

*knowledge stored within the organization*" (ibid., p. 398), which is yet another sign of the epistemological schism discussed earlier.

Another paper, (Paroutis and Saleh, 2009), looking at the success factors for Web 2.0 in knowledge sharing from a managerial perspective, identifies five key 'determinants': history, outcomes (perceived benefits and rewards), organizational/management support, and trust. Linked to the latter point, also referred to briefly in (McNamee, Schoch et al., 2010, and Schneckenberg, 2009), the authors found that the degree of using Web 2.0 for organizational learning and knowledge sharing depends on such factors as the degree of freedom, openness and employee empowerment, pointing out that the *social* setting differs in those respects from the corporate environment. These findings are supported by the conclusions of Prasarnphanich and Wagner (2009), who found that altruism is a prevalent motivating factor for Wiki collaborators, and thus it can be argued that a closed, tightly controlled and disempowered culture, whereby little proactive action in order to help others without clear personal benefit is taken, will be less conducive to collaboration using such Web 2.0 platforms as Wikis.

Overall, this group of papers opens up a discussion about the role of the end user in sharing knowledge through Web 2.0, shifting from the IT-centric view towards such consideration as trust, empowerment and culture in general, a topic that is being continuously discussed in KM literature but not widely researched in relation to Web 2.0 in KM context in particular.

Another group of papers can be broadly placed within Nonaka and Takeuchi's SECI model – e.g., Martin-Niemi and Greatbanks (2010), have identified ten enabling conditions making blogs a successful *ba* (environment) for knowledge conversion, including – yet again – mutual trust, and being purely behavioural rather than ICT-related. Two other papers in the same group are dedicated to the matter of Personal Knowledge Management – PKM: Zhang

(2009), refers to Web 2.0 as offering an opportunity for organizations to tap into personal knowledge (i.e., to facilitate its conversion), similar to (Razmerita, Kirchner et al., 2009), who highlight a number of ways how Web 2.0 can be used to enhance PKM through making it more dynamic and increase the utilization of its tacit component.

Finally, another group of articles is dedicated to particular projects and applications related to collaboration and knowledge sharing: innovation management (Ribiere and Tugge, 2010); pan-European collaborative projects (Siakas, Georgiadou et al., 2010), which suggests that Web 2.0 can be an enabler for cross-cultural collaboration; healthcare (Aherne and Pereira, 2008); ERP (Wu and Cao, 2009); the military (Mittu, Guleyupoglu et al., 2008); e-learning (Kane, Robinson-Combre et al., 2010); the concept of open knowledge (García-Peñalvo, Figuerola et al., 2010; Llorens, Bayona et al., 2010), and data mining (Wang and Wang, 2008).

As a whole, these papers suggest that Web 2.0 can facilitate knowledge creation, conversion and sharing processes as well as collaboration in organizations via a variety of relatively new, more social approaches, which again, signifies a departure from KM being merely an incarnation of data management in the direction of tapping into the tacit and the contextual sides of knowledge.

Furthermore, there is a view that some problems with the 'traditional' KM are related to dealing with information redundancy, lack of collaboration, difficulties with access and categorization as well as the issues of information reliability (Douglas, 2009). Web 2.0 addresses most of them: collaboration and access are straightforward (the latter through the search facilities), whereas handling redundancy, and categorization, are dealt with through tagging (Parise, Guinan et al., 2009) and links (redundant information will not be tagged or linked to). Quality remains problematic (Kuo and Lee, 2009), if not increasing in importance due to less control over the content. Despite this issue, however, it can be

argued that Web 2.0 can complement the ‘traditional’ KM approach through covering those gaps; e.g., Sinclair (2007), is talking about Web 2.0 ‘rejuvenating’ KM by bringing communities into it, and Gururajan and Fink (2010) – about informal systems complimenting the formal ones in case if they fail.

### **2.6.2. The Role of Culture in Web 2.0 Adoption**

It brings the discussion to the last key point of the subsection, namely the role of culture in how successfully Web 2.0 is adopted. As numerous examples have already shown, culture is considered to be important for organizations as a whole as well as for IT systems implementation and KM. There is very little, however, published on culture’s relation to Web 2.0 in particular: most authors do not venture far beyond the aforementioned issues of trust and collaboration.

Herold (2009), looking at the adoption of Web 2.0 in Asian cultures, gives an example of Chinese high collectivism index, arguing that propensity to share values and collaborate may be an explanation to the eagerness with which the Chinese have taken on such activities as blogging. The author points out, however, that cultural differences manifest themselves not only in *how much* Internet in general is used in a country, but also *for what*: the Chinese tend to use it mainly for entertainment purposes rather than gaining information from it, which is in line with findings by Li and Kirkup (2007) and Shin (2010) (American/Korean study).

Providing an additional angle to Herold’s point about Chinese collectivism, Liu and Porter (2010) argue that there are three cultural phenomena that greatly influence how knowledge sharing goes in China: *Shifu* – a master, or a functional guru, which may be seen as a sole holder of certain knowledge; *guanxi* – relationships between people established

over the time; and *quanzi* – a group of people with *guanxi* developed between them. It is argued that if there is an established group and its leader does not object, some knowledge sharing will be present, even though the new knowledge should still emanate from the power figure; at the same time, propensity for out-of-group knowledge sharing will be low – with reference to Herold's point (Herold, 2009), a conclusion can be made that Chinese collectivism must play a positive role in sharing knowledge in established groups, but not *between* them. Even though Liu and Porter were talking about knowledge transfer in general rather than about Web 2.0, it is not hard to make a connection with Web 2.0 and its open and egalitarian nature vs. tightly-knit groups and the role of the master, respectively.

Finally, there are three papers very close to this research's focal area.

The first one, (Chau, 2008) is very brief (three pages) and theoretical. Outlining briefly Hofstede's framework, the author then states that collectivism/individualism is "*particularly relevant*" and proceeds to deconstruct the differences between collectivist and individualist cultures in more detail, i.e., describing the importance of established relationships in collectivist ones. Chau identifies four key differences: personality orientation (idiocentric vs. allocentric), self-construity (independence vs. interdependence), communication style (high- vs. low-context) and time orientation (monochromic vs. polychromic – in essence, the degree of multitasking). The paper ends shortly after this.

Although the paper is titled "Diffusion, Adoption, and Infusion of Web 2.0", there is no discussion of the matters. The paper does offer a theoretical framework for understanding collectivism and individualism in Hofstedian terms in more depth, but it is not referring specifically to Web 2.0 despite the title.

The other paper, (Ribiere, Haddad et al., 2010), focuses specifically on the link between national culture and Web 2.0. It is based on questionnaires covering both re-evaluation of

Hofstede's dimensions and the use of Web 2.0 administered to undergraduate students in business and management aged between 19 and 27 years old (predominantly under 24); 91 in the US, 178 in Thailand and 96 in Bahrain.

The research findings were split between the expressive and instrumental use (i.e., for self-expression or pragmatic purposes respectively). It was found that for expressive use, perceived usefulness of Web 2.0 was the strongest factor, followed by a negative correlation with uncertainty avoidance, and positive – with ability to maintain relationships and feeling of security. For instrumental use, perceived usefulness was at the top of the list again, followed by moderately positive correlation with long-term orientation.

This paper's research methodology could be critiqued for a number of reasons. The age and occupation group is highly restrictive; a proprietary scale for the dimensions is used, covering only three countries and not allowing the reader to understand how significant the deviations between them are. It also contradicts Hofstede's findings, although they were used as the basis for the paper: some of the differences in Dimensions' values between the three countries is in disagreement with Hofstede's results. Furthermore, such factors as perceived usefulness and concern for online security are included in the study, although there is no evidence in support of their relation to national cultures.

Overall, the paper, from the methodology point of view, has limitations. At the same time, it paves the way to further research and perhaps even hints at some pitfalls and mistakes to be learnt from.

The third, and the most recent paper (Barron and Schneckenberg, 2012) proposes a superposition of a cultural framework very similar to Hofstede's, GLOBE Survey (House, Hanges et al., 2004), although only three of its elements elements (Power Distance, Uncertainty Avoidance and Individualism) vs. a list of potential factors influencing user adoption. The authors look at the relationship between the aforementioned dimensions

and such factors as employee freedom to participate in corporate decision-making, employee collaboration and knowledge exchange, and curiosity about new technologies. The paper then proceeds to discuss potential impacts of the national culture, coming up with a number of propositions.

The biggest issue with the paper is that the choice of the framework and the limited number of its constituents is not explained or justified in any way. The other part – the adoption determinants – is equally arbitrary; one of the acceptance models, Technology Adoption Model (TAM) is mentioned (Davis, Bagozzi et al., 1989), but not discussed. The fact that another version of it - TAM2 – was published later on, and that there are newer user acceptance models, e.g., UTAUT (Venkatesh, Morris et al., 2003), is not attended to. Instead of reviewing the body of literature, the authors (Barron and Schneckenberg, 2012) state that *“These factors, we argue, include...”* and simply provide a list of three items without any further justification.

Overall, the paper suggests two theories – on culture and on user adoption, a reduced version of Hofstede’s Dimensions for the former and the unjustified list for the latter – and goes on to examine the combinations between the two.

### **2.6.3. Web 2.0: Conclusion**

Web 2.0 as a field of study is still in its infancy, which makes an impact on both quantity and quality of the literature published on the matter. There are, nevertheless, some common themes.

The definition of Web 2.0 is not a point of contention, and most authors accept McAfee’s view based around the SLATES elements to describe it (McAfee, 2009). Most see it as a set of tools helping to promote collaboration and communication, all in an egalitarian and

unstructured way – or rather, in a way that implies a degree of dynamism and emergence in its structure (Ribiere and Tuggle, 2010; Siakas, Georgiadou et al., 2010; Aherne and Pereira, 2008; Wu and Cao, 2009 and Mittu, Guleyupoglu et al., 2008; Kane, Robinson-Combre et al., 2010; García-Peñalvo, Figuerola et al., 2010; Llorens, Bayona et al., 2010; Wang and Wang, 2008).

In an organizational context, it can be used in two ways: as an interface between the organization and the outside world (customers, consumers, stakeholders - Bernoff and Li, 2008; Venkatraman, 2010; Andriole, 2010; Jones, Temperley et al., 2009; Chen, 2009; Fieseler, Fleck et al., 2010), and internally – either for internal communications, or for KM purposes (e.g., Grinham, 2007; Parise, Guinan et al., 2009; Lee and Ge, 2010; Matthews, Jones et al., 2010; Wu, Gordon et al., 2010; Wikis Grace, 2009; Yates, Wagner et al., 2010), for which its particular strength is in harnessing the collective knowledge and making IT systems contextual, significantly enhancing the information management-based approach (Paroutis and Saleh, 2009),.

Among the issues associated with Web 2.0 implementation in an organizational context, the most often mentioned are the matters of trust and collaboration (Paroutis and Saleh, 2009), as well as openness and motivation (Prasarnphanich and Wagner, 2009). Most of those traits can potentially be linked to national culture, however, verifying whether this is true is the aim of this thesis.

Finally, it must be said that the matter of national culture's consequences on Web 2.0 adoption has virtually not been researched, and this is an opportunity to make an original contribution into a new field. As it was shown in sections 2.5 and 2.6, some research has been previously carried out in the adjacent fields (organizational culture or KM in general), and some attempts have been made to address similar questions directly (Chau, 2008;

Ribiere, Haddad et al., 2010; Barron and Schneckenberg, 2012) however, no definitive answers have been found so far.

## 2.7. Literature Review: General Conclusion

In this chapter, an overview of the literature dedicated to four major subject areas: knowledge, knowledge management, culture and Web 2.0 has been carried out.

Three areas out of four have proven to be very complex with a large number of different and often mutually incompatible schools of thought. As far as knowledge is concerned, the delineation between knowledge and data/information (Bell, 1999), as well as Cook and Brown's framework (Cook and Brown, 1999) bringing together the individual and collective, tacit and explicit knowledge, and knowing as an action, will be maintained. The attractiveness of this model is in its simplicity, which at the same time still allows for inclusion of all elements relevant to this research. This framework is important, since Web 2.0 stretches beyond mere *information* management systems, e.g., by providing users with an online space to interact with one another and exchange knowledge that is not necessarily explicit.

Culture as a research area has a hundred and fifty years' worth of research in social anthropology that serves as a foundation for it (Hatch, 1973), but *organizational* culture is universally seen as an important business factor (Alvesson, 2012).

As far as the *national* culture is concerned, by far the most prominent theory, despite its limitations discussed above, is Hofstede's Dimensions (Ailon, 2008).

Finally, Web 2.0 is under-investigated by the social scientists from the organizational point of view, and there is potential for further research. From the KM perspective it is mostly used for collective knowledge creation and knowledge sharing (Patrick and Dotsika, 2007; Paroutis and Saleh, 2009). Culture is recognized as a potentially important factor in Web 2.0 adoption, too (Chau, 2008; Ribiere, Haddad et al., 2010; Barron and Schneckenberg, 2012).

One of the main results of this review was that the relevance of the cultural matters in relation to Web 2.0 adoption is quite clear, and there have been attempts at investigating the potential links, yet none generated conclusive results. This is a clear gap in the research, and the thesis addresses it directly.

### **3. Research Methodology**

#### **3.1. Introduction**

The purpose of this chapter is to discuss and justify the choice of the methodology used in addressing the aim and objectives, including its ontological and epistemological underpinnings, as well as to describe its particulars.

To do so, the chapter covers the variety of approaches potentially applicable to the research; discusses the argument for and against using them, and then proceeds to address the methodological dilemmas posed by the aim and objectives. The latter starts from the discussion of different levels of analysis implied by the research question and requiring a mix of methods to be employed in addressing them. It describes the ontological and epistemological debates around the acceptability of mixing methods and provides justification for the mixed methods' applicability for this thesis. It then discusses the particular variety of mixed methods used and shows where it fits into the overall mixed methods context. It describes in detail the research strategy and its stages, concluding with discussing its ethical implications.

### **3.2. Ontology and Epistemology of Social Science: Competing Paradigms**

Given that there are a variety of philosophical and methodological positions available to a social researcher, the key question this chapter aims at answering is which position would provide the best fit for the aim of the thesis, i.e., to find out whether the national culture has an impact on the adoption and use of Web 2.0 in organizations, and in what way.

One of the widely used approaches to describing the wide array of different ontologies, epistemologies and methodologies available in business and management research is to place them on a scale, literal or implied. Items put on the opposing sides of the scale are, for example, realism/strong positivism and nominalism/strong constructionism (Easterby-Smith, Thorpe et al., 2012), objectivism/positivism and constructionism/interpretivism (Bryman and Bell, 2006), and shallow realism/empiricism and idealism/constructionism (Blaikie, 2007). The use of terminology may differ, however, the overarching principle remains the same. On one side, there are approaches associated with the assumption of an independently existing reality, knowledge of which can be discovered by an independent observer. On the other side are those that treat reality as something that is socially constructed through such processes as sensemaking, and thus the knowledge of it being subjective and a matter of interpretation.

These different sets of philosophical assumptions with regards to the nature of reality and of knowledge, often referred to as paradigms (Alise and Teddlie, 2010) have been argued by some methodology researchers to be entirely incompatible (the 'incompatibility thesis' (Howe, 2006), which shall be discussed in more detail in the section dedicated to mixed methods). This gave rise to the so-called 'Paradigm Wars' (Alise and Teddlie, 2010), whereby the strengths and weaknesses of each paradigm have been debated upon by their respective proponents.

The aim of the thesis – to explore *whether* Web 2.0’s adoption and use is affected by the national culture and *how* it might be happening – could be achieved from a number of available angles. For example, a strongly positivist epistemological stance coupled with a realist ontological position would mean looking for underlying generalizable trends and causal links, as discussed in more detail in the section dedicated to positivism; this would be appropriate for the first research objective and the first sub-question addressing the Web 2.0 usage at the level of entire countries. At the same time, this approach is frequently described as atomistic and reductionist (Easterby-Smith, Thorpe et al., 2012), and can be seen as sacrificing the depth of descriptive, contextual detail for the breadth of coverage, which is a limiting factor in terms of the objective related to the mechanisms behind the link between national culture and Web 2.0. Alternatively, a constructionist approach, looking at phenomena at more depth, as described in the corresponding section, would allow for more complexity to be captured in the data, and thus serve the objective of explaining the mechanisms involved in shaping up the adoption and use of Web 2.0 better than the positivist one, but it would not be appropriate as far as macro-scale trends are concerned.

It is argued in the following sections that the answer to the apparent impasse can be found in adopting one of the ‘interim’ options, i.e., one lying between the extremes on the positivism/constructionism scale. It is suggested that the main research question could be answered the best way by adopting a ‘softer’ positivist stance related to the *internal realism* ontology (as opposed to the ‘strong positivism’ and realism, Easterby-Smith, Thorpe et al., 2012). This viewpoint, described in more detail in Section 3.5, still assumes the existence of an objective reality, accepting, at the same time, a degree of subjectivity in its perception by human mind. As a methodological consequence, it allows for a wider variety of methods to be employed, which is suitable for answering research sub-questions

implying different levels of analysis and thus calling for a combination of quantitative and qualitative methods, as demonstrated in Section 3.6.

In order to provide a more detailed justification of how the aim of the research dictates the adoption of a positivist/internal realist paradigm, the contrasting sides of the scale will be discussed in the following two sections.

### 3.3. Positivism

The origins of positivism lie in works of such natural scientists as Rene Descartes, Francis Bacon and Auguste Comte, among others (Kolakowski, 1968). The key argument put forth in their works was that the only valid kind of knowledge is the one based on objective, 'real-world' observations.

It has been suggested (Bryant, 1985) that the key tenets of positivism can be best described by a series of rules and 'suppositions', laid out in (Kolakowski, 1968) and (Giddens, 1975), respectively.

The first rule is the *rule of phenomenalism*, which states that the only entities one is allowed to record are those that manifest themselves in experience. Positivism, although, importantly, *not* precluding the enquiry from looking into the immediately invisible causes of events, shuns their metaphysical explanations inaccessible to objective knowledge.

The second rule is the one of *nominalism*, i.e., that "*we may not assume that any insight formulated in general terms can have any real referents other than individual concrete objects*" (Kolakowski, 1968, p.5), meaning that the abstract entities found, for example, in metaphysics ('virtue', 'evil' and so on), or theoretical sciences such as Mathematics, are not to be assumed to exist in reality.

The third rule is that of a refusal to accept cognitive worth in value judgements and normative statements; the *existence* of values and moral judgements or one's freedom of expressing them are not denied, however, by this rule, one is not entitled to assume that they are 'scientific' or made on anything but one's arbitrary choices.

The fourth rule is that of the essential unity of the scientific method, meaning that all sciences, regardless of their subject area, have a fundamental methodological

underpinning, and that there are no reasons to believe that the differences between sciences exist due to “*anything more than characteristics of a particular historical stage in the development of science*” (*ibid.*, p.9).

Giddens’ (1975) three suppositions complement the four rules. The first one states that the methods of natural science are directly applicable to the social science; the second one posits that the end result of sociological enquiry should be the discovery of generalized laws, similarly to natural sciences; and finally, the third supposition regards social science as purely technical and instrumental, with its findings not carrying “*any logically given implications for practical policy or the pursuit of values*” (Giddens, 1975, p. 4).

In methodological terms, what the rules and suppositions lead to is that the aim of *strong* positivist research (Easterby-Smith, Thorpe et al., 2012) lies in discovery of the nature’s laws by an independent observer. Human interests are not taken into account, hypotheses serve as a starting point for inquiry, and explanations must show causality. The researcher is supposed to operate with numbers and facts so that concepts involved could be measured, verified/falsified and generalized onto a larger population via the means of statistical probability, which also implies a preference for larger sample sizes. The desired outcome of the enquiry is a confirmation or falsification of a theory (Easterby-Smith, Thorpe et al., 2012).

Despite being the chronologically first paradigm, and virtually the *only* one in science as a whole until around 1970s (Alise and Teddlie, 2010; Easterby-Smith, Thorpe et al., 2012), the positivist approach has eventually come under criticism by some social scientists for a number of reasons.

Blaikie (2007), sums up the *negativist* stance, i.e., the one that accepts the validity of the positivist approach in natural sciences, but challenges its applicability to social world, in nine points, based on the work of Karl Popper (Popper, 2002). Most of the critique comes

down to the higher complexity and dynamism of social phenomena compared to those studied by natural sciences. For example, the 'laws of nature' universally applicable throughout time and space, it is argued, are impossible to formulate in the case of an ever-changing social life. Equally, reproducible experiments are said to be unrealistic due to the complexity and the open nature of social systems. The possible interplay of elements in social systems (e.g., interaction between group members) invalidates, according to the author, the reductionist, atomistic approach, since what is happening in a group may be more than just a sum total of individual experiences.

Blaikie (2007), also points out that both predictions made based on the research outcomes, and the researcher themselves can affect the reality, and thus it is impossible to detach the observation and/or the observer from the phenomenon under study. Furthermore, the matter of the role that ideas, knowledge, beliefs, values and norms play in shaping up the social reality is mentioned – i.e., the subjectivity of an individual and that each person may evaluate things differently dependent on their social context . A further critique is that the aim of social science is to understand meaning and purpose rather than seek out causality; and a more technical matter of difficulties in *measuring* social phenomena with much precision is brought up.

One possible counter-argument to the positivism's inapplicability to complex settings is that the representation of positivist approach as universally reductionist and atomistic, regardless of the subject area it is applied to, is not necessarily a fair one. Indeed, the scientific inquiry often starts from understanding the fundamental laws based on simple models; there are countless examples of that in Physics and other natural sciences. This approach, however, allows for the further expansion of the theory by inclusion of more and more contributing factors, approximating it to what is happening outside the 'clean'

laboratory conditions, thus eventually refining the theory so that it is capable of explaining the complexity of real-life phenomena.

One such example can be found in Newtonian mechanics, based, in its simplest form, of Newton's three laws describing how material bodies gain or lose speed if a force is applied to them. The 'reductionist' critique would argue that real-life scenarios are complex, and there can be influences other than a single force making a body accelerate; therefore, what can be observed is that a body might move in an apparent contradiction to Newton's laws. This, however, does not invalidate the laws or the modelling approach: if *all* forces are taken into account, bodies will move in the way predicted by the theory, and this is not a matter of inapplicability of the scientific method to complex settings, but rather, that of a particular model's boundaries. Should the need arise, the model can be expanded to approximate 'real life' scenarios, e.g., incorporating multiple forces acting, however, on the same basic principles as per the original 'simplistic' theory. The same statement could be related to Popper's point about the allegedly static nature of science.

The points concerning the impossibility of an entirely detached observation, the difficulties with precise measurement in social settings and the role of values, beliefs and other subjective factors in shaping human actions are harder to argue against. In some cases it can be a matter of instrument validity, that is, a question of method rather than philosophical underpinnings; this can be dealt with by a variety of means such as triangulation (e.g., using mixed methods, discussed in detail in the relevant subsection).

Despite the criticism, positivism and related paradigms remain the prevalent approach in business and management research (Cameron and Molina-Azorin, 2011). At the same time, dissatisfaction with its apparent drawbacks by some social scientists led to the development of alternative approaches, most notably social constructionism.

### 3.4. Social Constructionism

The social constructionist paradigm has developed in the last five decades as a response to the critiques aimed at positivism outlined above (Easterby-Smith, Thorpe et al., 2012). The central tenet of this ontological position is that social reality and its meaning are continuously constructed by people living in it (Bryman and Bell, 2006). The researcher should not assume the pre-existence of phenomena under study, but rather, examine the process through which they are constructed (Walsh, 1972). This downplays the importance of the existence of the physical entities behind the *social* phenomena quite strongly in comparison to the objectivist position, up to an 'extreme relativist' view that the only way for things to exist is to do so is in discourse (Burr, 2003). Some authors, such as (Parker, 2014), adopt a less solipsistic position by asserting that although material objects *do* exist, the only way to *know* about them is through discourse; this point shall be discussed further down in this section.

A key consideration of constructionist research, since the social reality is treated as socially constructed, is seen as to discover the meaning people, individually or collectively, give to the events and artifacts, as well as their thoughts and feelings, rather than measuring 'facts' (Easterby-Smith, Thorpe et al., 2012); the researcher is considered to be part of what is being observed. Human interests should be taken into account, and the aim is to understand the situation rather than to demonstrate causality. A holistic approach capturing the complexity of the observed phenomena is employed to generate new insights and actions through theoretical abstraction of sensemaking and interpretation, typically operating with smaller sample numbers providing richer data (Easterby-Smith, Thorpe et al., 2012).

Hancock (1999) sums up the critiques of the social constructionist position in six points in response to its key principles put forth in (Gergen, 1994).

Gergen (1994) defines the two contrasting epistemologies as those of *exogenic* and *endogenic* knowledge, according to which, respectively, knowledge is objective and is based on an external reality, versus subjective knowledge constructed by a 'processing agent'. The author equates the exogenic view with empiricism, whereby the knowledge about reality is perceived through the senses, and the endogenic one with constructionism. Further, it is argued that even if an exogenic viewpoint is adopted, it is clear that the interpretation of the sensory data is carried out by an agent through the use of language, involving values and beliefs, and thus, any knowledge has a socially constructed nature. In response to this, (Hancock, 1999), states that the assumption that the exogenic view equates with empiricism is "*quite mistaken*" (Hancock, 1999, p. 250), and instead, the *real* opposing stance to constructionism would be that of classical realism. In Hancock's view, empiricism and constructionism are "*bedfellows*" (ibid., p. 251), both essentially endogenic in nature because of the weight they put on the role of an agent in the creation of knowledge, and thus, Gergen's argument concerning the 'collapse' of two opposing views on knowledge into a single, constructionist epistemology, is fundamentally flawed: the two allegedly opposing alternatives are not opposing each other from the outset.

Hancock's second critique (Hancock, 1999), following from the first one, relates to the alleged impossibility of a *knower* to be independent of their own historical (or in the broader sense, social) context, which would mean that the theoretical abstraction can only reflect the "*observer's conceptual construction of the world*" (Gergen, 1994, p.204) rather than the reality itself, making it impossible for the objective knowledge to exist. Hancock responds to this by using a simple example of mathematicians; they could come from a variety of national, gender and linguistic backgrounds, yet five times five always equals

twenty-five. *Knower* can be contingent upon one's background, but the *object of knowing* does not have to be, and the spatio-temporal circumstances the knower is contingent upon can be transcended.

The third critique is of a generic nature, and it relates to the constructionists' view that there is no single 'Truth', i.e., no theory or viewpoint can be claimed to be universally valid. Yet, the author asks, how can then social constructionism claim to be the universally true paradigm (Hancock, 1999)? The counter-argument "*commonly made by Rorty, Derrida, and the Wittgensteinians*" (Hancock, 1999, p. 253) is that social constructionism is true 'locally', as opposed to 'globally', that is, it is a language game useful in this particular instance because it helps up organize our knowledge of science. However, Hancock argues, the very local/global distinction still implies the existence of the global truth, which goes against the fundamental principles of constructionism.

The fourth point is a question of how can competing claims between 'language games' be solved. Hancock uses an example of the Nuremberg trials; the Nazi criminals were being judged in accordance with the allies' belief system, and it only made sense in their language game. But since constructionism assumes that there is no prevailing truth, does it mean that the Holocaust could be justified in some way, e.g., in accordance with the Nazi's beliefs system? The author points out that this line of argument is "*most unbecoming*" for an "*epistemology which aims to reassert moral values back into scientific discourse*" (ibid., p. 254). Hancock goes on to generalize that the anti-realist epistemology does not hold against specific examples like this.

The fifth point addresses Gergen's view that knowledge is not a product of an individual mind, but rather, is a result of a social process of communication. Hancock argues that this statement implies the physical existence of other people; otherwise communication would be impossible – it takes more than one person to communicate – and if it is asserted that

one communicates with constructs rather than physical bearers of consciousness, the argument would reduce itself to solipsism. The question whether society is made up of real persons represents a dilemma: if the answer is yes, then it contradicts the non-realist ontology; one would have to admit the existence of 'real', physical, extramental and non-constructed entities. If the answer is no, a solipsist view that the receiver of the communication is not real, but rather, a product of our own mind, would result.

The sixth and the final critique is moral rather than philosophical, and it is a continuation of the fourth point. By Gergen's own assertion (Gergen, 1994, p. 205), *"The sociobehavioral scientist is invited, if not compelled, to return to the moral concerns so central to August Comte's view of the science. Moral debate must come to play an increasingly important role in the new science."* However, as the Nurnberg trials' example has demonstrated, the constructionists' shunning of universal truths taking form of, in this case, moral systems, makes this line of enquiry pointless: since there are no right or wrong moral systems, it is not clear what it is that the sociobehavioural scientist is compelled to return to.

It is worth pointing out that Gergen's description of constructionism's key principles (Gergen, 1994) and Hancock's critique of them (Hancock, 1999), similarly to Blaikie's of positivism (Blaikie, 2007), relate to the stronger, more uncompromising varieties of those paradigms, i.e., 'strong positivism' and 'strong constructionism' (Easterby-Smith, Thorpe et al., 2012). Interim positions are available along the positivism/constructionism continuum; it can be argued, however, that comparing the extremes provides a clearer picture in terms of highlighting and contrasting their key features.

As the preceding two sections have shown, the opposing sides of the continuum differ quite significantly in their fundamental assumptions related to reality and knowledge, which in turn leads to some notable methodological consequences. The next section of this

chapter discusses the choice of paradigm based on its academic fit with the research aim and objectives.

### 3.5. Finding the Fit

One of the key points this chapter addresses is the choice of the philosophical and methodological positions most appropriate for answering the research question and its constituents, and to achieve the aim and objectives of this thesis.

The question of whether Web 2.0 is adopted and used to different degrees and in different ways depending on the host country's culture consists of two fundamentally different parts. The 'whether' part, designed to achieve the first objective (the verification of the initial hypothesis concerning the link between the use of Web 2.0 in public domain) addresses a macro-scale phenomenon, i.e., something pertaining to whole nations, and given the population size, it requires the sample to be quite large in order to maintain claims for generalizability. Sample sizes that even the largest *qualitative* studies would be able to cover – a hundred, or even several hundred respondents – would not be sufficient. A large-scale quantitative statistical analysis is inevitable, and in this respect, this part falls firmly into the positivist paradigm: the phenomenon, manifesting itself, if it exists, in differences between user statistics by country, can be measured comparatively easily, and those numbers are not a matter of interpretation. The difference between countries either is present, in the statistical sense, or it is not.

Thus, in the ontological/epistemological frame of reference laid out in (Easterby-Smith, Thorpe et al., 2012), the position dictated by the 'whether' part of the main research question should lie at the objectivist/positivist side of the scale. At the same time, although capable of showing that some trends may or may not exist, large scale statistics cannot be deemed sufficient for providing the level of granularity meaningful at the level of an organization and resolving enough detail to explain the *how* part of the question.

An analogy with clinical research can be drawn here. If a drug is tested for safety or efficacy, bodies such as the FDA would expect evidence from double-blind controlled trials of a sufficient magnitude before any approvals could be granted. And it does make sense if the data is to be used for strategic decision making; if one drug has ten per cent higher efficacy than the other, it would be sensible to recommend it for adoption for the sake of helping ten per cent more people in the long run.

However, any figures derived from the macro-scale results, or ever more so, systematic meta-reviews such as Cochrane reports (The Cochrane Collaboration, 2011), will have only limited predictive power insofar as every individual case is concerned, and the case outcome will depend on a particular combination of a virtually unlimited number of variables. In this sense, the large-scale results can only give an indication of an outcome's *probability*; every patient's history and circumstances will be unique, and therefore decisions concerning their treatment and potential outcomes can only be made on a case-by-case basis, founded on the holistic picture of qualitative clinical evidence. An example of such approach can be found in (Plano Clark, Schumacher et al., 2013), where embedding qualitative methods in a randomized clinical trials in a cancer pain management context is discussed in order to enrich the understanding of the randomized control trials' results.

In a similar way, the main question of this thesis requires answers at two levels: the 'whether' at the macro - large scale, quantitative - to be followed by the qualitative case-based 'how', i.e., an explanation and an illustration of the context and the circumstances and above all, how trends highlighted in the macro analysis manifest themselves at the organizational level. The ontological and epistemological stance for the research as a whole needs to incorporate an assumption of objective reality and knowledge, leaving, at the same time, enough space to reflect the more descriptive and subjective side of the matter explaining *why* users treat Web 2.0 one way or another.

As it was mentioned in Section 3.2, the positivism/constructionism delineation is a continuum rather than a dichotomy, and between the two extremes, a number of 'softer', compromising alternatives can be found.

Given the above considerations, it could be argued that within the frame of reference laid out in (Easterby-Smith, Thorpe et al., 2012), the aim of this thesis would be served best if the *internal* realist ontology and positivist epistemology (as opposed to *strong* positivism matched by *realism*) are adopted.

The term 'internal realism' has been proposed by Putnam (Putnam and Conant, 1992), and its fundamental meaning is that the reality is viewed as *causally* independent of the human mind, but the *structure* of the world as ontologically dependent on it; the Universe objectively exists by itself, human mind or not, however, the structure, the categories and so forth, are the mind's product.

To cite an example given in (Forrai, 2001), Mount Everest, the mountain itself, exists independently of our concept; however, where the Everest stops and Lhotse, the neighbouring mountain, begins, as well as their very existence as *separate entities*, is down to a human interpretation.

This approach resembles the constructionist one in some respects: despite Hancock's portrayal of constructionism as strictly anti-realist (Hancock, 1999), the 'softer' versions of constructionism do not necessarily deny the existence of physical reality (Easterby-Smith, Thorpe et al., 2012), as could also be seen in (Parker, 2014); rather, they assert that our *understanding* of the reality is always subjective, and thus there is no Truth.

(Forrai, 2001, p. 24), explains the difference: "*If internal realism does not want to degenerate into a kind of cheap relativism, it has to recognize 'objective' wrongness, a kind of wrongness which does not derive solely from our preferences. Conceptual schemes should*

*not be allowed to dictate the criteria of their own adequacy: there must be 'objective' constraints".* As it is put in (Easterby-Smith, Thorpe et al., 2012), the internal realist ontology assumes that the single Reality does exist, and there is the single Truth, but they can be hidden away and discovered through indirect evidence.

If a positivist/internal realist stance is adopted for a piece of research, from the methodology point of view it means (Easterby-Smith, Thorpe et al., 2012) that the aim of the research is to expose the reality through the use of large surveys and multi-case designs, starting from propositions and analysing numbers and words by means of correlation and regression, with theory testing and generation as the desired outcome.

This stance allows the research to remain based on the objectivist foundations (the user statistics), allowing, at the same time, to incorporate the explanatory qualitative data into the picture. Its comparative methodological flexibility allows for the different methods to be combined in addressing different levels of analysis required by the main research question and its constituents (the 'whether' and the 'how'). All of these make this position highly suitable for the aim and objectives of this thesis.

However, to further justify a combination of different methods and to show that this does not create a paradigmatic conflict, a more in-depth review of the mixed methods area is provided in the next section.

### 3.6. Mixed Methods

The mixed methods approach started receiving attention from methodology researchers about twenty years ago, although it has been routinely applied in various other fields before that. For example, in anthropological demography, research in such phenomena as marriage and kinship, required studying of both large-scale trends and localized explanatory mechanisms, much like this study (Greene, 2008). Similarly, according to (Franz, Worrell et al., 2013), in *psychology* mixed methods are *regaining* popularity after the field went through a positivism-dominated period between 1930 and late 1960s, followed by a split between extreme positivist and post-modernist wings. Health researchers, too, have been mixing qualitative and quantitative methods (Morgan, 1998). In management and business studies, mixed methods are gaining popularity as it was shown by meta-reviews (Cameron and Molina-Azorin, 2011), accounting for about 14% of all empirical papers in business and management, the quantitative and qualitative methods scoring 76% and 10%, respectively.

At the moment, the idea of mixing methods is still not seen as problem-free, and there are multiple debates going on, but at least it is not rejected as something not worth discussing (Johnson, Onwuegbuzie et al., 2007), to the degree of SAGE launching a dedicated journal in 2007, the *Journal of Mixed Methods Research*.

Most often seen as a combination of qualitative and quantitative approaches (Johnson, Onwuegbuzie et al., 2007; Denscombe, 2008) or simply a methodological mix from whatever paradigm (Brannen, n.d.), it came out of the ‘paradigm wars’ of the second half of the XX century, and it appears that the key contention point with it is paradigmatic, not methodological (Greene, 2007). According to Greene’s view, it would be fine to mix methods, were they not to be seen as representative of conflicting philosophical realms as

it was referred to in the last subsection, each with their own set of ontological and epistemological assumptions.

Whether such combination of different paradigms is a valid approach is still a matter of some debate (Bryman, 2006b). Some authors (Guba, 1987) argue that the paradigms are totally incompatible, and that the epistemological differences do not allow for the argument to be put to rest (Howe, 2006). Sale, Lohfeld et al. (2006), however, cite a number of proponents of the opposite opinion, i.e., the so-called 'compatibility thesis'. Haase and Myers (1988) and King, Keohane et al. (1994), for example, claim that different methods are mixable because they pursue the same goal of understanding the world, and because they share a unified logic, respectively. Reichardt and Rallis (1994), argue that both paradigms are united by such factors as "*the theory-ladenness of facts, fallibility of knowledge, indetermination of theory by fact, and a value-ladened inquiry process...* [as well as] *by a shared commitment to understanding and improving the human condition, a common goal of disseminating knowledge for practical use, and a shared commitment for rigour, conscientiousness, and the critique in the research process*" (ibid., p.87). Furthermore, such authors as Clarke and Yaros (1988) and Steckler, McLeroy et al. (1992), suggest a more results-oriented argument for the compatibility thesis, namely that some research questions would benefit from a broader spectrum of methods used even if they study different phenomena, and knowledge about them, in combination, could provide a more in-depth understanding of the matter under investigation.

Some, however, suggest that the link between the methodologies and paradigms is questionable (Bryman, 1984; Caracelli and Greene, 1993), or that *all* methods are parts of a continuum, i.e., a mix – in different proportions – of positivism and interpretivism, and thus the either/or argument is futile (Howe, 1992). Yet other sources argue that the mixed approach belongs to the world of pragmatism (Denscombe, 2008; Greene, 2008; Feilzer,

2010), a paradigm giving researchers a license to be oriented towards solving the problems of the 'real world' and not be forced into a positivist-constructionist dichotomy, thus being free from constraints of any of the two (Creswell and Plano Clark, 2007). Miles and Huberman (1984) suggest that the paradigm debate is not productive since it is unlikely to be settled in the foreseeable future - a prediction that 30 years after it was made has proven to be true - and that epistemological purity does not necessarily mean better research. Echoing this argument and summing up the pragmatist viewpoint, Howe (2006), suggests that truth is 'what works', and therefore researchers should not be preoccupied with the debate altogether, choosing instead such combination of methods as the research question dictates.

Since it was shown in the previous section that answering the main research question of this thesis involves two significantly different levels of analysis as well as a combination of broad-sweep quantitative data with more in-depth qualitative, explanatory set, the mixed methods approach is necessary.

Collins, Onwuegbuzie et al. (2006), have identified five possible reasons to use mixed methods: first, to improve the accuracy of the data; second, to paint a more complete picture by utilizing complimentary sources; third, to avoid biases in the data and to compensate for weaknesses inherent to one data type; fourth, to develop the analysis from initial findings using contrasting kinds of data and methods; and fifth, as an aid in sampling. As it will be shown further on in this chapter, for the purpose of this research it is proposed that a qualitative stage follows a quantitative one, enriching the numbers with contextual data as well as aiding the sense-making process. The chosen approach, thus, will have links to at least three of the points above. The complementarity of sources will aid in combining the 'whether' and the 'how' parts of the research question (second) and will help address the issue of representativeness of the sample vs. its descriptive power (third); it will also

serve the purpose of developing the analysis and taking it to the next level of detail (fourth).

Linked to the various reasons to mix methods, Creswell and Plano Clark (2007), based on a meta-review of twelve papers dedicated to taxonomizing different mixed method approaches, came up with four categories for mixed method strategies: explanatory, exploratory, triangulation, and embedded.

The *explanatory* strategy (Ivankova, Creswell et al., 2006) consists of two stages; the quantitative followed by the qualitative one, and as the name suggests, the function of the latter is to provide an explanation for the former, especially if the first results differ from what would be expected (e.g., Way, Stauber et al., 1994). The strength of this strategy lies in its relative straightforwardness and the ease of planning associated with distinct stages the approach can be broken down into; at the same time, its sequential nature means that it is more time-consuming (Ivankova, Creswell et al., 2006). An example of such research can be found in (Carr, 2009); it refers to two pain management studies, one where interviews were done as a follow-up to questionnaires concerning patients' post-surgery experience, and the other one was dedicated to combining interviews with previous observations of anxiety frequency and patterns in order to design an appropriate strategy for nursing interventions. An example from management and business studies can be seen in (Thøgersen-Ntoumani and Fox, 2005). The study is dedicated to understanding the relationship between physical exercise and employee wellbeing in a corporate environment, testing the assumption that certain patterns in them would allow the researcher to classify potential combinations into a set of clusters. Three hundred participants filled out a questionnaire about their exercise routines and wellbeing; the scores were used to cluster the responses, and then further semi-structured interviews

were administered within clusters in order to gain a better understanding about each one of them.

The *exploratory* strategy differs from the explanatory one by the sequence of steps: the qualitative one goes first, followed by the quantitative one. In this case not only the sequence is reversed, but the aims of the strategy are changed, too (Morgan, 1998): the second stage's purpose is still to aid the interpretation of the first one's results (in this case, quantitative and qualitative stages, respectively), but this time it is there to test the emerging theory or to generalize the qualitative findings onto a wider population. This strategy shares the same merits and drawbacks with the exploratory one, although Creswell (2009) suggests that it can also be used to make qualitative studies more acceptable to a quantitatively-oriented audience. An example cited in (Creswell, 2009) is (Goldenberg, Gallimore et al., 2005), in which a number of predictors for family literacy practices in a Latino setting were hypothesized about based on a case study, which was then tested using a quantitative path analysis. Another study (Wu, Hsu et al., 2007) employed the same strategy with different methods to identify determinants for knowledge sharing. A number of in-depth interviews were used to devise a set of hypotheses, and were followed by a questionnaire in order to test them. Similarly, (Jane Zhao and Anand, 2009) used a large number of interviews (31 open-ended and 26 semi-structured) as well as field observations to devise hypotheses (something the authors referred to as 'exploratory approach'), followed by a quantitative testing stage ('confirmatory' approach, in the authors' own terms).

The *triangulation* strategy is reputedly the most common and the best-known mixed methods approach (Creswell and Plano Clark, 2007; Creswell, 2009). Its purpose is to address the research question by gathering different, but complimentary data (Morse, 2003) in order to increase the understanding of the problem by using methods with non-

overlapping strengths and weaknesses (Creswell and Plano Clark, 2007) and to compare the different data sets seeking confirmation, disconfirmation, cross-validation or corroboration (Creswell, 2009). The stages are equal in their standing in the sense that neither is dependent or secondary in relation to the other, and they can happen at the same time rather than in sequence, which is why this strategy is referred to in (Creswell, 2009) as a *concurrent triangulation strategy*.

The strengths of the triangulation strategy lie in its concurrent nature and therefore comparatively low time intensity, as well as its familiarity to the research community. At the same time, a major methodological problem (Sale, Lohfeld et al., 2006) is in the fact that combining the methods this way implies that they are targeting the same phenomenon from different angles, which is one of the central points in the incompatibility argument, i.e., quantitative research targeting an external, objectively existing referent, and the qualitative one - personal interpretations or meanings. Sale, Lohfeld et al. (2006), suggest that it is undesirable to triangulate methods in order to study different aspects of the same phenomenon, simply because the phenomena studied by different methods are inevitably different, too. The authors' solution to the problem is to be clear about what actually is under study, and if the *phenomena* complement one another in the way suitable for the research question, proceed with it.

As an example of a triangulation study within a cultural context, Rinne and Fairweather (2012), have used cultural modelling (a qualitative technique aiming at identifying knowledge and thought-oriented schemata through the discourse analysis), and cultural consensus analysis (a quantitative method looking for shared knowledge of a specific cultural domain among respondents) in order to understand New Zealand's performance in international innovation.

The last type of mixed methods strategies on Creswell and Plano Clark's list is the so-called *embedded* one (Creswell and Plano Clark, 2007), also known as the *concurrent embedded* one (Creswell, 2009). It differs from the first three in the sense that one data type has a primary role, and the other one is secondary and supportive (Creswell, Plano Clark et al., 2003). The authors admit that telling this strategy from the others might be difficult – after all, the secondary data set could be used for explanatory purposes, for example. The key question that highlights the distinction is whether the secondary stage makes sense in isolation from the primary one. For example, qualitative methods can be used to examine the process of a quantitative experiment or an intervention; in this case the former would not have an autonomous role. Similarly, a subservient stage can be used to *develop* the intervention, or as an aid in sampling and participant selection (Donovan, Mills et al., 2002).

Taking into account the purpose of the two stages in this study, it fits into the *Explanatory Design* category and its *follow-up explanation model* variety: "*the follow-up explanations model [...] is used when a researcher needs qualitative data to explain or expand on quantitative results... ...In this model, the researcher identifies specific quantitative findings that need additional explanation, such as statistical differences among groups...*" (Creswell and Plano Clark, 2007, p.72). The quantitative stage, containing the macro-level analysis, will highlight any trends evident at the national level; the second, qualitative, stage, will give necessary explanations and illustrations.

This leads the discussion back to the point raised before the beginning of this section, namely whether this approach contradicts the positivist stance. As it could be seen from the overview of the mixed methods literature, proponents of the compatibility thesis argue, from a variety of viewpoints, for the acceptability of combining different methods. Furthermore, none of the central tenets of positivism outlined in (Kolakowski, 1968) and (Giddens, 1975), make it fundamentally incompatible with qualitative methods. Moreover,

authors such as Yin (2003), although careful in accepting that case studies are as rigorous as the more traditional research designs employed in natural sciences, do accept that they have a place in positivist research as long as the design is clear from the outset covering “*the main questions or propositions, the units of analysis, links between data and propositions, and procedures for interpretation of data*” (Easterby-Smith, Thorpe et al., 2012, p. 55). As will be shown in the corresponding section of this thesis describing the qualitative stage’s design, all of those requirements have been duly satisfied.

The chapter will now proceed to the more detailed discussion of the quantitative and the qualitative stages.

### 3.7. Quantitative Stage

#### 3.7.1. Data Sources

The first data gathering stage consisted of looking for any signs of culture-dependency in Web 2.0's use. The literature analysis has shown evidence that Web 2.0 can be culture-sensitive; it relies on collaboration and open communication; it also is unstructured and egalitarian. It could be expected therefore that it will be more readily adopted in cultures that are collaborative, accepting uncertainty well and neither require nor endorse existence of figureheads.

Quantitatively, the earliest indication of something previously unaccounted for exerting an influence on Web 2.0's cultural acceptability was the observation made in 2010 with regards to the size of Wikipedia's sections in different languages: some differences could not be readily explained by economic, demographic or other factors. For example, the size of Russian section on Wikipedia, despite Russia's population alone exceeding in 2011 140 million inhabitants (the figure would be much greater if the Russian-speaking population of the post-Soviet space was included), turned out to be smaller than the Polish (38 million) and the Italian (ca. 60 million) (Burgess, 2010). This, however, is a very vague symptom, and it would need expansion and further evidence.

The proposed way forward would be to gather and analyze the usage statistics for applicable Web 2.0 sites and to look for any correlations with Hofstede's dimensions globally. Furthermore, to take account of the factors like GDP, ICT infrastructure availability and so on, all site demographics would need to be calculated as percentage of the country's Internet population.

One challenge associated with this approach is that the site statistics by country which can be sourced *directly* only from server logs, is commercially sensitive and thus only very rarely

published by the site owners – as per March 2011 only Wikipedia and LinkedIn have published their numbers, the former as an ongoing process (Zachte, 2011) and the latter as a one-off PR exercise (Verde, 2011). The secondary data, published by external bodies, such as commercial agencies (e.g. Socialbakers.com) or a variety of individual bloggers, is rudimentary, fragmented and unreliable in the sense that sample sizes are often small, and neither the data sources nor the calculation methodology are disclosed; furthermore, discrepancies between various data sets are aplenty.

Google's DoubleClick Adplanner database (Google.com, 2011) offers a better secondary source at least from the reliability point of view: even though the methodology is not disclosed, the numbers come from the same database, and the methodology is consistent. Furthermore, a triangulation check has been carried out between AdPlanner's figures and own numbers available for Wikipedia and LinkedIn. The correlations were shown to be statistically significant: 0.871 for Wikipedia (n=55) and 0.992 for LinkedIn (n=41),  $p < 0.01$  for both. Thus, a conclusion can be made that the numbers triangulate at a sufficient level, and despite Google's methodology remaining undisclosed, it can be used for further analysis.

### **3.7.2. Target Sites**

To aid further analysis, the multitude of Web 2.0 sites and platforms have been divided into seven subtypes depending on their purpose and functionality: 1) general social networks (Facebook, Myspace, Vkontakte.ru); 2) professional social networks (LinkedIn); 3) Wikis (Wikipedia, Wikihow, Wiktionary); 4) blogs (Wordpress and similar, or hosted individually); 5) media sharing services (Flickr, Fotolog); 6) microblogging sites (Twitter); and 7) tagging/folksonomy platforms (Delicious and Stumbleupon). This typology is based on distinct kinds of content generated and shared (social interactions, subject knowledge, journal entries and so on) and appears to be exhaustive. A special distinction is made for

general and professional social networks based on the different kinds of Web 2.0 users' behaviour in a business environment and in a non-work related setting highlighted in (Schneckenberg, 2009), also in line with Hayes and Walsham's idea of political and safe enclaves (Hayes and Walsham, 2000).

The nature of the analysis required the target sites to have global coverage. For example, such social networks as VampireFreaks.com receive visitors from Western Europe and North America only, and Ravelry.com, a knitting network, is popular predominantly in Northern Europe. A closer site-by-site analysis reveals that despite technological commonalities, the vast majority of Web 2.0 sites are specialized either geographically, or by subject area, or both, and the choice is restricted.

To avoid these unwanted interferences, the analysis had to be kept to non-specialized, thematically generic sites with global coverage (defined as at least 90% of Google's list – effectively the World's top 50 Internet usage countries, allowing 10% for fluctuations). Furthermore, some of the subtypes identified above could not be analysed. Social networks are a difficult group to generalize about at the global level due to a high degree of geographical concentration. For example, some of them are outperforming Facebook locally, but do not have global presence: Hi5 in Central America, Hyves in the Netherlands, and Vkontakte.ru in Russia and in the post-Soviet space, which distorts the between-countries comparison. Facebook, the World's biggest social network by the total number of users, is also banned in China. By contrast, for example, Wikipedia allows for global figures to be relatively easily aggregated and analysed.

Another group, blogs, represented yet another analytical challenge in the sense that the three blog hosting platforms on the list of top social media sites, even though high in overall users' count, are not necessarily representative of the so-called blogosphere, i.e., the multitude of all blogs in existence: unlike all other technological groups, keeping and

maintaining a blog does not require a specific service provider, and anybody with a basic grasp of HTML and access webhosting can have one.

Out of professional networks available on the Web, only LinkedIn, a global business networking giant visited by forty million people in February 2011, satisfied both criteria.

The last group, Wikis, consists of Wikipedia, eHow, Wikihow, Wiktionary and Wikia. The latter, however, is fundamentally different from the rest: it is a so-called *wiki farm* – a platform that supports users creating and running their own Wikis, as such representing a collection of – according to Wikia themselves – over 150 000 communities (Sannse, 2011), comparatively small and highly specialized. It, thus, had to be excluded from the analysis due to insufficient size and excessive specialization of its constituents.

Following this discussion, the list of Web 2.0 sites included into the analysis is shown in Table 2.

Type	Site
Professional Networks	LinkedIn
Wikis	Wikipedia; eHow; Wikihow.com; Wiktionary.org;
Media Sharing Sites	Flickr; Photobucket; Deviantart.com; Last.fm; Buzznet; Multiply.com
Microblogging	Twitter.com; Tumblr.com
Tagging Sites	Stumbleupon.com; Tagged.com

Table 2: Social Media sites selected for the correlation analysis.

### 3.7.3. Statistical Processing

The processing methodology was determined exclusively by the requirements of the corresponding objective and the sub-question related to it: whether there are any culture-related trends between usage statistics and cultural parameters per country, i.e., Hofstede's dimensions. To answer this, the ratio between Google AdPlanner's site visit

numbers per country and the Internet population estimates from InternetWorldStats.com was calculated for each site/country series. The resulting subsets were processed in SPSS, and Pearson correlation coefficients were calculated between them and Hofstede's dimensions. Statistical significance was assessed using a standard t-test.

### 3.8. Qualitative Stage

The purpose of this stage was to provide explanations to the numerical results as well as to enhance the 'dry' numbers with the contextual information and to explain not only *whether* the culture has an impact, but also to illustrate by examples *how* it is happening. In other words, it served the purpose of *complementarity* (Greene, Caracelli et al., 1989) and fitted into Bryman's *offset, completeness, explanation, context* and *illustration* categories (Bryman, 2006a), i.e., it added the strengths of qualitative methods where quantitative ones were lacking; it created a more complete picture by achieving the third objective (finding out *how* the national culture has an impact on Web 2.0 adoption and use); provided an explanation to the quantitative results; examined examples of the organizational context; and supplied an illustration to the trends highlighted during the first stage.

This, according to (Tsoukas, 1989) could be achieved via a *comparative idiographic* approach, i.e., via a multi-case in-depth analysis. According to the author, the aim of such research is to discover certain combinations of circumstances whereby generative mechanisms produce observable phenomena (in case of this research, national culture, potential mechanisms for it to impact on Web 2.0's adoption and use, and the effect, i.e., the implementation results, respectively). Moreover, it is stated that (ibid., p. 555) "*Similarities between the units of analysis are explained by the generative mechanisms and the similar type of contingencies that have been responsible for the mechanisms' activation. Differences may be due either to the operation of different generative mechanisms or to the dissimilar contingencies within which the operation of a similar set of mechanisms has taken place*".

From the data gathering and analysis viewpoint, there were a number of options to consider. As Bryman and Bell (2006) point out, qualitative researchers are typically dealing with large volumes of unstructured textual data, and unlike in the case of quantitative research, there is no established convention as to how exactly the analysis should be carried out. It is worth, therefore, outlining the overall strategy employed at this stage of the research.

### **3.8.1. Qualitative Data Collection and Analysis Strategy**

A multitude of qualitative research strategies used in business and management studies have been identified by various authors; lists of options differ in detail, but they frequently include such items as ethnography, action research, case studies, phenomenological research and grounded theory (Myers, 2013; Creswell, 2009; Hair, Money et al., 2007). Bryman and Bell (2006), however, argue that the two most cited approaches for the gathering and analysis of primary qualitative data are the *grounded theory* and *analytical induction* ones, although the authors acknowledge that other approaches exist (ibid., p. 425). Bryman and Bell also point out that despite both being described initially as data *analysis* strategies, the iterative nature of the qualitative research means that collection and analysis stages are in a state of constant interplay, and therefore the two strategies can be viewed as those for *both* data collection *and* analysis.

Easterby-Smith, Thorpe et al. (2012) suggest a similar dichotomy for the qualitative analysis strategies with grounded analysis on one side, and content analysis on the other, however the authors highlight that although it is easier to describe the two as a pair of distinct opposing alternatives, they are two extremes of a continuum, and in-between lies the multitude of combined options.

Both (Easterby-Smith, Thorpe et al., 2012), and (Bryman and Bell, 2006) agree on the key distinction between the two extremes: the grounded approach, stemming from the work of Glaser and Strauss, aims at *generating or discovering* a theory from data (Glaser and Strauss, 1967), whereas the analytical induction and content analysis are centred around testing pre-formulated hypotheses.

The framework behind the *grounded* approach, Grounded Theory, has significantly developed since its original publication in 1967, with Glaser and Strauss diverging from one another in thinking of the ways the fundamental principles of the theory should be applied (Strauss, 1987; Strauss and Corbin, 1990; Glaser, 1992), giving raise to two different schools of thought. The more orthodox Glaserian school advocates an open approach allowing a theory to emerge almost as if by itself (Easterby-Smith, Thorpe et al., 2012). The more popular (Bryman and Bell, 2006) Straussian school is more systematic and prescriptive, with a defined three-level (open, axial and selective) approach to sampling and coding (Strauss and Corbin, 1998). Regardless of the significant differences in the particulars of the method, its fundamental nature, whereby a researcher addresses the question with a theoretical 'blank slate' and develops the theory through an iterative process of going between data and emergent theory, is less suitable for the mixed method design chosen for this study. According to Johnson and Onwuegbuzie (2004), mixed methods *can* include a grounded stage; the authors suggest that the ability to test something developed with the means of a grounded approach is a strength of mixed methods. This, however, is an example of the exploratory, rather than explanatory, design. Its primary purpose is to generate new theory based on the qualitative data, and then to see via the application of a larger-scale quantitative study whether it can be generalized; it is incompatible with the explanatory strategy whereby some sort of an initial framework already exists and is in need for further expansion, illustration or enrichment with detail. Since the qualitative stage in this research

serves the purpose of explaining and expanding on findings from a previously existing quantitative data set, a different qualitative strategy had to be employed.

The analytical induction strategy depicted on Fig. 7 (Bryman and Bell, 2006, p. 426) offers a better fit: it starts from a set of hypotheses developed on the basis of previously existing knowledge and/or data (quantitative results in this particular case), and then proceeds to evaluate and develop them through the cyclical process of testing the hypotheses against the accumulating body of qualitative data.

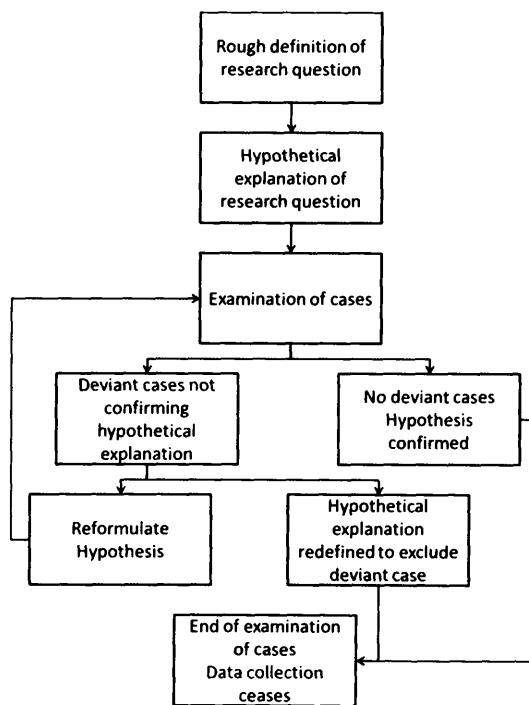


Figure 7: The Analytic Induction strategy (Bryman and Bell, 2006, p. 426)

The method has been in use in social science for a long time, and it pre-dates the currently more popular alternative, the grounded approach, by a few decades. It was first applied in

(Thomas and Znaniecki, 1918), formally stated in (Znaniecki, 1934), and elaborated upon by Robinson (1951). It has gained some prominence in social science and especially in the works carried out by the Chicago School of Sociology (see, for example, Becker, 1953 and Cressey, 1950), although Bryman and Bell (2006) and other sources, such as (Manning, 1991), point out that its popularity has dwindled; in Bryman and Bell's words (*ibid.*, p. 426), "*the rigours of analytic induction have not endeared the approach to qualitative researchers*". Manning's main points of critique (Manning, 1991) were that the method has low predictive power and is not very good at generating causal theory. However, as Gilgun (1994), citing (Bogdan and Biklen, 1992), point out, the method has more applications than just causation and prediction. As far as this research is concerned, as it was discussed in the preceding sections, its purpose is explanatory and illustrative rather than either of the two highlighted by Manning.

A number of authors (Sutherland, 1934; Cressey, 1950; Robinson, 1951) outline the main steps of the analytical induction process: 1) it starts from a tentative definition of a phenomenon under investigation or the research question; 2) explanatory hypotheses are then formulated; 3) the first case is examined to determine whether the hypotheses explain the facts; 4) if they do not, a choice of two options arises: to reformulate the hypotheses to reflect new deviant cases, or to redefine the phenomenon so that the deviant case is excluded; 5) should all data conform with the hypotheses, the latter are tentatively accepted as confirmed, although a single negative case would evoke step 4 again; 6) the process is followed again in a cyclical fashion, and steps 1-4 are repeated until a universal relationship satisfactorily explaining all evidence is established.

Robinson (1951) describes the options the researcher has at the fourth step in detail. The first one – reformulating the hypothesis – is, according to Robinson, a well-established scientific approach called *the method of working hypothesis*, and it is an iterative process of

finding the right explanation by trial and error, each explanation being more accurate than the previous one. The second option, i.e., that of redefining the phenomenon or the research question, is sometimes called *limiting the universal* (Dubs, 1930). The name refers to narrowing the phenomenon's definition down i.e., limiting its universal applicability or coverage. The example Robinson uses is that of Newtonian mechanics which for a long time was accepted as a theory describing with acceptable accuracy how material bodies move. Some evidence arose, however, showing that at speeds close to that of light Newton's laws do not work, and the scope of the theory was therefore redefined from claiming to be universally applicable, to only *non-relativist cases* (those where speeds involved are sufficiently less than the speed of light). In sociology the approach could manifest itself, for example, in rephrasing the research question so that it refers to a particular (or a narrower) demographic group to exclude outliers.

In case of this thesis, Steps 1 and 2 – the definition of the research question and the hypotheses – were based on the quantitative stage's results.

The aim of the thesis was to gain understanding whether national culture has an impact on how well Web 2.0 is received in different countries, and as it was discussed in the section dedicated to the quantitative stage, Hofstede's cultural dimensions were used as a framework describing the cultural differences. As it will be shown in the discussion of the quantitative results, some trends have been found even if the factors such as the Internet's availability were taken into account. Some dimensions were found to correlate, in a statistically significant way, with the use of major Web 2.0 sites.

The results, however, did not explain *how* it was happening, i.e., what mechanisms were involved. Further search of the literature dedicated to national culture, KM and Web 2.0 was carried out in order to come up with potential explanations, based on prior evidence from elsewhere, providing insights into what mechanisms could be at play. The

hypothetical explanations were in the format of 'Phenomenon X can be explained by the mechanism Y', and the analysis at the qualitative stage was aiming at verifying/falsifying these explanations and adjusting them where necessary.

### **3.8.2. Data Collection: Interviews**

In a way similar to the data collection strategy, the choice of data collection *method* offers a number of different options. Some authors, such as Hair, Money et al. (2007) or Maylor, Blackmon et al. (2005) are more quantitatively-oriented and generalize the qualitative side of the research spectrum to a large degree; the latter book contains a chapter titled "5. *Scientist or ethnographer? Two models for designing and doing research*" (Maylor, Blackmon et al., 2005, p. 135) and discusses the multitude of qualitative methods as if they were all manifestations of ethnography one way or another. Myers (2013) splits the qualitative data collection techniques into interviews, participant observations and fieldwork, and the use of documents. Others, e.g., Easterby-Smith, Thorpe et al. (2012) go into more detail and list in-depth interviews; group and focus interviews; diary-based approaches; critical incident technique; various kinds of observations; and action research; qualitative analysis of secondary data is also mentioned. Bryman and Bell (2006) follow very similar lines and point out ethnography and observations; unstructured and semi-structured interviews; focus groups; conversation and discourse analysis, and documentation analysis.

The choice of qualitative technique for this thesis was determined chiefly by the nature of the research question and the phenomenon under study, as well as by the access arrangements. Observations were ruled out due to the fact that they would have to be focussed on fewer organizations (Myers, 2013), thus generating data confined to a particular organizational context and having a lower potential for generalization. Hofstede's

own approach could be employed here, i.e., data could potentially be gathered in subsidiaries of the same organization, which alleviate this concern, however, no such opportunities arose. Furthermore, no organizations were found prepared to grant the researcher the *observational* access. Besides, a number of factors that the data was gathered about were based on opinions, such as system's pragmatic value, and although observations could be useful to collect the relevant data (e.g., observing discussions concerning the systems' expected performance), other options discussed below were found more fit for the purpose. Last but not least, given the international focus of the research question, doing a sufficient amount of observation work would incur unrealistic costs in terms of both money and time.

Some very limited documentation analysis was done, but its restricted scale was caused by the confidentiality agreements. Some respondents have shared such information as policy documents and standard communication packs (in all cases Powerpoint presentations designed for employee induction or for other general communication purposes) and demonstrated the workings of their systems on a computer screen, however, only one gave permission to publish the documents.

As discussed above, the qualitative data was to serve as an explanation and an illustration to the quantitative results; the technique allowing for the right kind of data to be collected, fitting the circumstances well and also relatively easy to arrange in terms of its logistics, were interviews. There was, however, a question of structure – or rather, *how much* structure should there be in them.

### **3.8.3. Choice of the Interviewing Technique**

It is quite common to divide the multitude of interviewing techniques into structured, semi-structured, and unstructured; for example, Fontana and Frey (2005) provide a detailed

overview of the various types and cite a wide array of literature discussing them. Easterby-Smith, Thorpe et al., (2012) and Bryman and Bell (2006), discuss the three types too. The latter put the structured variety into the quantitative context, whereas the qualitative research, according to the authors, employs something between the “*almost totally unstructured*” (ibid., p. 343) and semi-structured approaches.

The exact positioning of an interviewing approach between the extremes in terms of structure is neither a precise matter nor, it could be argued from a pragmatic perspective, an important one, provided that it supplies data befitting the research question.

The explanatory nature of the data to be collected implied that a high degree of openness would need to be present in order to let the respondents express themselves more freely and to be able to capture the potential complexity and contextuality. At the same time, a completely unstructured, Rogerian therapy-style free-flow conversation (Cepeda and Davenport, 2006) would be of little use. It would not interface well with the quantitative stage based on Hofstede’s framework and therefore already having some structure in it; arguably, similar incompatibility issues would be likely to arise in case of *any* explanatory mixed methods design, where the qualitative data follows the quantitative, which is structured one way or another by default. Furthermore, Easterby-Smith, Thorpe et al. (2012) warn against non-directive, unstructured interviews as tempting researchers with an apparent ability to create a clearer picture, but producing confusion on both sides of the interview table and bad quality data as a result, instead. As a solution, most sources discussing the matter in some detail suggest having a *topic guide* (ibid., p. 127) or an interview guide (Bryman and Bell, 2006) as a means of ensuring that the areas crucial to the research question are covered.

### 3.8.4. The Unified Theory of Acceptance and Use of Technology (UTAUT)

This study was, in essence, dedicated to understanding the role of culture in shaping the users' decision making determinants with regards to whether they would or would *not* use a particular system, provided that they had some freedom in making the choice. An interview guide would need, therefore, to include both a cultural part (Hofstede-based) and a framework with a list of factors potentially playing a role in the decision-making process, i.e., it could benefit from using, at least as a foundation, a theory outlining potential factors determining the adoption and use of Web 2.0.

The matter of technology acceptance and adoption determinants has received a significant amount of attention in IT-related literature over the last two or three decades, with a number of models and theories developed and widely applied, such as Technology Adoption Model (TAM – Davis, 1989 – and its more recent incarnation, TAM2), Theory of Reasoned Action (TRA – e.g., Davis, Bagozzi et al., 1989), Motivational Model (MM - Vallerand, 1997 and Davis, Bagozzi et al., 1992), Theory of Planned Behaviour (TPB - Ajzen, 1991), Combined TAM and TPB (C-TAM-TPB - Taylor and Todd, 1995), Model of PC Utilization (MPCU – originally in Triandis, 1977, adapted to IT systems context in Thompson, Higgins et al., 1991), Innovation Diffusion Theory (IDT – e.g., Rogers, 1995), Social Cognitive Theory (SCT – grounded in psychology, applied to ICT by, for example, Compeau and Higgins, 1995), and the Unified Theory of Acceptance and Use of Technology (UTAUT - Venkatesh, Morris et al., 2003).

The latter, apart from being one of the most recent ones (including some suggested expansions and revisions, e.g., Cody-Allen and Kishore, 2006; Sykes, Venkatesh et al., 2009), has a benefit of taking all the aforementioned theories into account: the original 2003's UTAUT paper was written as an empirical test of its eight most prominent predecessors (TRA, TAM/TAM2, MM, TPB, MPCU, IDT and SCT), incorporating their constituent

constructs and leading to the development of a unified theory that, according to the authors' own findings, explains 70% in variance in usage intention, which is notably higher than any of the predecessors: only TAM and TAM2 reach 53% and 53% respectively (Venkatesh, Morris et al., 2003).

It is worth pointing out that another model, TAM3, was developed by Venkatesh and Bala after the publication of UTAUT (Venkatesh and Bala, 2008), which is, therefore, not covered in (Venkatesh, Morris et al., 2003). This version combines TAM2 with an earlier published model of the determinants of perceived ease of use (Venkatesh, 2000), thus offering another level of detail in deconstructing the adoption determinants. The new model still explains 53% of usage intention, similarly to TAM and TAM2. Although the authors claim that the second of their three objectives - to carry out an empirical test of the proposed model - has been achieved, this can only be said to be true in the sense that the test, indeed, has been carried out. However, given that the test results show the same explanatory power as the earlier versions of TAM, it could be argued that the merits of the new model lie elsewhere, namely in its greater focus on the pre- and post-implementation interventions aiming at achieving greater levels of user adoption. At the same time, design of interventions is not something that either of the objectives of this thesis are targeted at, therefore TAM3 was deemed to be of lesser applicability than UTAUT.

UTAUT has been empirically tested in a number of studies, some of them related to either culture (USA vs. China - Srite, 2006; Saudi Arabia - Al-Gahtani, Hubona et al., 2007; Korea vs. USA - Im, Hong et al., 2011; across eight countries - Oshlyansky, Cairns et al., 2007) or Web 2.0 (Dapper, 2007; Ismail, 2010). Finally, Ribiere, Haddad et al. (2010), used some UTAUT elements on par with cultural dimensions; the methodological limitations of this paper are discussed in the literature review.

UTAUT proposes to assess seven determinants of the user acceptance (Venkatesh, Morris et al., 2003): performance expectancy ("the degree to which an individual believes that using the system will help him or her to attain gains in job performance"); effort expectancy ("the degree of ease associated with the use of the system"); social influence ("the degree to which an individual perceives that important others believe he or she should use the new system"); facilitating conditions ("the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system"); attitude towards using technology; self-efficacy, and anxiety (not defined explicitly). The latter two are theorized not to determine the acceptance directly, but to be mediated by effort expectancy. The direct determinants are mediated by gender, age, experience and voluntariness of use.

In the context of this research, UTAUT's constructs were used to structure the inquiry and to partly shape up the interview guide, as described in the next sub-section.

### **3.8.5. Interview Guide**

As it was mentioned before, the interview guide (Appendix 1) was developed based on Hofstede's questionnaires and UTAUT determinants in order to serve the purpose of the qualitative stage, i.e., to provide evidence in answer to the second and the third research sub-questions (whether the national culture has an influence on the adoption and use of Web 2.0 within organizations, and what mechanisms could be involved) and to achieve the corresponding objectives.

As it was discussed in Sub-section 3.8.3, the interviewing technique chosen for the qualitative stage was semi-structured interviews. What it meant was that the questions asked were open, with a deliberate effort made not to lead the respondent to certain answers. The Guide, thus, played the role of a list of subjects to be covered rather than of a

precise set of questions to be asked, serving as a departure point for a more open conversation. As it is illustrated in Appendix 2a, the interviews were not restricted to a rigid list of items, and the respondents were encouraged to elaborate on their points, with additional probing questions asked if necessary, in order to let them express their opinions and let any additional themes come to light. For example, one such theme in the Appendix 2a was the propensity of subordinates to avoid too much visibility in the management's eyes, which apparently was exacerbated by the organization's attempts to launch online knowledge sharing systems. The explanatory and illustrative evidence, highlighted at the coding stage, was then incorporated into the cases' discussion in order to paint a richer picture of how Dimensions, UTAUT constructs and hypothetical mechanisms were manifesting themselves, as further explained in Sub-section 3.9.1.

The Guide can be broken down into three sections: 1) the background information about the company and their Web 2.0 experience; 2) Hofstede's Dimensions; and 3) UTAUT constructs.

Parts 2 and 3 were based on the original questionnaires used to develop the frameworks by their respective authors (Hofstede, Hofstede et al., 2010 and Venkatesh, Morris et al., 2003). Some areas were not asked about in case if enough evidence was provided by the interviewees unprompted. It was quite common that some direct evidence was provided in answer to a different question.

The purpose of the first part was a background information gathering: facts about the company such as its age, location, industry, demographic profile, and so on; and the information about the implementation process: which systems were implemented, when, or which purpose, how the process was organized, and what was the outcome.

The second part, centered on Hofstede, was designed to probe for signs of different levels of Dimensions and to verify whether the observed behaviour in a given organization was

what to be expected for the given country based on Hofstede; as it will be shown in Chapters 5 and 6, this so in the majority of cases, but not in all of them.

The third part of the guide contained items investigating the factors affecting users' decisions whether to adopt a system or not. It is this part where the evidence for sub-questions 2 and 3 was gathered. When the determinant-related data was analysed in conjunction with the culture-oriented evidence, any links between culture and user adoption could be highlighted, and not only in terms of *if* (i.e., showing a lower level of adoption in, for example, high-PDI cases), but also, *how*, i.e., outlining the mechanisms involved and thus allowing for the explanatory hypotheses to be verified.

The questions were prompting the respondents to elaborate more freely on their views, and themes relevant to the hypotheses to emerge, thus providing additional illustrative evidence as highlighted above. For example, in response to the questions about one of UTAUT's constructs, Performance Expectancy (i.e., how useful respondents thought the system was), responses ranged from 'it is making my job easier because I can collaborate with a wider range of people' to 'not useful for me personally, but it is used by the higher levels in the organization to get the information they want', which, in combination with low or high PDI, respectively, would not only provide evidence for or against H1, but also give an illustration of *how* the mechanism it is based upon can manifest itself. Similarly, questions about social pressure, attitude towards the system or anxiety associated with it, could bring up issues of trust and the role of strong/weak ties, related to H2, and so on.

### **3.8.6. Sampling**

The sampling strategy adopted for the qualitative stage was the *purposeful* one (Flick, 2009). This approach means that the researcher "*actively selects the most productive*

*sample to answer the research question*" (Marshall, 1996, p. 523) by setting a number of selection variables according to the research question.

The first selection criterion for the companies was the use of Web 2.0 for knowledge management; thus, companies using social media for other purposes, such as advertising or PR, were not targeted. Equally, some companies that were approached at the beginning of the research reported using systems with built-in Web 2.0 functionality (e.g., SharePoint), but the corresponding parts of the systems came as part of a package and were not intended to be used. Such cases were excluded, too.

Geographically, cases in Russia/Ukraine and the UK/North America were focussed on, which was justified by the significant difference between Russian and Anglo-Saxon values of Hofstede's dimensions, as has been shown in Table 1. All respondents spoke either Russian or English fluently. Although some cases from other countries were examined (Germany, Austria, India), there was not enough of them to make a three- or four-way comparison, and they were eventually put aside.

Following recommendations in (Patton, 2014) for inclusion of *typical* and *deviant* cases, companies both successful and struggling with Web 2.0 adoption and use were included. Similarly, cases exhibiting behavioural patterns in line and contradicting Hofstede's predictions for a given country, as discussed in the qualitative data analysis chapter, were covered.

Eighteen interviews out of the of twenty-four were found through the author's professional network, mostly existing before the commencement of the research, and six were secured via a snowball mechanism, whereby at the end of the interview the respondent was able to provide a reference to someone else, in all cases but one within the same company as themselves. All interviewees were middle to senior managers in various roles, but never from the technical IT development, i.e., always from the 'receiving' end of the

implementation process. Both criteria - the level and the non-technical IT function - were formed after a few trial conversations with potential research participants when it became clear that the junior level employees could rarely provide information about such matters as business justification or the implementation history, top managers (sometimes at VP level) did not know much operational detail, and the technical IT managers' scope of attention ended at the point of handover to the internal customer; the mid-level non-IT users were found to be the most informative group.

Although the company size and the industry were initially not taken into account as selection criteria, all companies engaged in KM 2.0 were of high knowledge intensity, and therefore the sixteen cases came from aerospace, IT, banking, higher education, consulting and hi-tech manufacturing (heavy machinery or highly automated FMCG) industries. The companies were of medium to large size, from a few hundred employees to the world's biggest multinationals, although the user groups in question were always localised and never exceeding a hundred or two in size. With only one exception (EnergyConvert, Case Twelve), no major events, i.e, mergers, acquisitions, or any other changes, were happening at the time of the interviews. EnergyConvert was preparing for a takeover by a larger multinational corporation; this is mentioned in the case write-up, Section 5.12.

24 interviews across 16 organizations were carried out; the list is presented in Table 3.

No.	Company Alias	Country	Company Size	Industry/Core Activity	Interviewee's Alias	Position	Date of the Interview
1	PiggyBank	Russia	8 500	Retail banking	R1	Portal Implementation Manager	July 2011
2	SoftCorp	Russia	450	Software development	R2	Marketing Director	September 2011
3	The Management School	Russia	1 100	Higher Education	R3	Assistant Professor	November 2011
4	MobiCorp	Russia	450	Mobile content development and sales	R4	Marketing Manager	November 2011
5	NaviSoft	Russia	300	Navigation systems	R5	Project Manager	January 2012
6	TrainingSolutions	Ukraine	24	Educational software development	R6	CEO	January 2012
7	InterFood	Russia	10 000+	FMCG manufacturing	R7	IT Service Delivery Manager	March 2012
8	FashionOnline	Russia	100	Fashion retail sales (online)	R8	COO	January 2014
9	EnviroCom	UK	10 000+	Environmental services	R9a	Production Manager	January 2012
10	SandWitchCo	UK	3 000	FMCG manufacturing	R9b	Communications Manager	February 2012
11	Space Inc.	USA	10 000	Aerospace	R10a	Manufacturing Excellence Manager	February 2012
12	EnergyConvert	UK	5 300	Power conversion	R10b	Manufacturing Excellence Manager	February 2012
13	The Business School	UK	200	Higher education	R10c	Kaizen Coordinator	February 2012
14	Planes'R'Us	UK	10 000+	Aerospace	R10d	Knowledge Management Project Manager	August 2012
15	ConcultiComp	USA	10 000+	Consulting	R11a	Scientist/Wiki Champion	September 2012
16	AgriCo	UK	5 000	Food manufacturing	R11b	Process Innovation Manager	February 2013
					R12	IT Director	February 2013
					R13	Internal KM consultant	September 2012
					R14a	Innovation Manager	March 2012
					R14b	Sr. Social Software Product Manager	April 2012
					R15a	Social Media Consultant	April 2012
					R15b	HR Manager	March 2013
					R15c	Six Sigma Black Belt	December 2012/December 2013

Table 3: Interview participants

As is described in the ethics sub-section (Section 3.10), all respondents were anonymised, thus the companies' aliases listed in the table are based on their industries without bearing any resemblance to the real names.

Equally, respondents' aliases are mere labels for differentiation in the text and are assigned based on the case's number in sequence. The company industries and respondents' job titles are close to what they represent: unlike names, the nature of their business and duties, respectively, could provide some valuable contextual information. They are, however, generalised to a degree sufficient for anonymity: for example, 'FMCG manufacturing', pointing out that we are dealing with companies producing high-volume short-lifecycle goods, is not specific enough - whether it is food, personal hygiene, home care or other sub-types – to make any plausible guesses with regards to the company's true identity.

All interviews but three were carried out via Skype or conventional phone. Prior to the conversations, all participants were sent an executive summary of the project with all necessary details.

The interviews were recorded where possible, however, those carried out over the phone or via Skype with the use of headphones did not allow to do so, and notes were taken during the interview and written up into a more detailed narrative immediately after. All records were done immediately in English without interim notes in any other languages.

Each interview took about an hour, although in some cases respondents kept talking for longer, which was only encouraged. Similarly, some of them *led* the conversation instead of merely answering questions, in which case they were allowed to talk instead of trying to restrict the conversation to the list of questions, making sure, however, that they were answered too.

### 3.9. Qualitative Data Analysis

#### 3.9.1. Within-case Coding and Analysis

As far as the individual case analysis is concerned, Bryman and Bell (2006) do not identify any particular methods associated with analytical induction, and dedicate the discussion in the corresponding chapter to the details of the grounded approach without any further explanations. Easterby-Smith, Thorpe et al. (2012) are more helpful in that respect and suggest a choice of two suitable models.

One is *template analysis* (King, 2004). By the definition in (Easterby-Smith, Thorpe et al., 2012), it is not a distinct, strictly defined method, but rather a loosely connected multitude of ways and means to organize and analyse qualitative data thematically. It aims at producing a list of codes (a 'template') showing a structure of interconnected, often hierarchically, themes identified in the data. Although this is not part of its formal definition, the method is a combination of the grounded and inductive approaches in the sense that some of the codes might be defined *a priori*, but the final template is arrived at by continuously revising of, and adding to, the initial version. The authors warn against predefining too much because of the risk of 'suffocating' the data and thus preventing the themes from emerging by effectively introducing confirmation bias into the process.

It is also pointed out that one of the method's strengths is its flexibility and applicability to both the more positivist/realist research concerned with objectivity and the coding reliability as described in (Miles and Huberman, 1994), and 'context constructivist' research (e.g., Madill, Jordan et al., 2000). The authors, however, argue that it is not appropriate for mixed method analysis since the flexibility of template coding means that there is no definite correlation between the frequency of a code and its "*salience*" (King, 2004, p. 256). It is worth pointing out, however, that mixed methods referred to are applied to *the same*

dataset, i.e., when thematic analysis and statistical methods are used for analysis of the same piece of text, for example, when thematic structure is defined using the template approach, and importance of themes is measured by the corresponding codes' frequencies.

Miles and Huberman (1994) describe an alternative option, although without defining a specific term; it is labelled "*Codes and Coding*" (ibid., p.55), and also stated that "*Coding is analysis*" (ibid., p. 56).

The authors suggest that the process should start from creating a list of codes, something between a dozen and fifty or sixty; codes should be based on conceptual frameworks, hypotheses, research questions, problems or main variables under study. Although the grounded approach and the other alternative, 'accounting-scheme guided' method (Lofland and Lofland, 1995; Bogdan and Biklen, 1992) are acknowledged as useful, Miles and Huberman suggest that any of the approaches involves a degree of revision for codes, and go as far as to say that *when* codes are developed is less important than *how well structured* they are. Codes can be mostly developed based on the hypotheses and frameworks and then revised to a lesser degree as the process goes on (Miles and Huberman's method), or they can be developed in a post-hoc fashion, as per the grounded approach, or via a combination of both, as King suggested (King, 2004). Where on the scale a particular design resides is said to be of lesser importance than how good the coding structure is (Miles and Huberman, 1994).

Going back to the research strategy employed in this thesis, however, it can be said that the approach it dictated was leaning more towards Miles and Huberman. Some authors (e.g., Denzin and Lincoln, 1998), point out that Miles and Huberman's method not only includes elements of analytical induction, but that "...they [Miles and Huberman - PB] - *believe in studies that can be replicated and judged against the canons of good science*" and that "*as deployed by Huberman and Miles, this model satisfies the positivist critics of qualitative*

*research..." (ibid., p. 40). The process of analytical induction used in this study is focussed on testing hypotheses, and therefore the coding list would have to be predefined to a larger degree, which conforms with Miles and Huberman's approach.*

The hypotheses, derived from the quantitative results, were based on a superposition of Hofstede's dimensions and Web 2.0's distinctive features, with UTAUT's constructs serving as an additional way to structure the inquiry; as described in Chapter 4, the initial list of codes contained items related to the Hofstede's Dimensions and UTAUT, with an addition of two codes to mark the attribution to the national or organizational culture. Other codes were used to mark instances directly linked to hypotheses. The initial list of codes is shown in Tables 4 and 5.

The list of codes grew to some degree during the coding process in order to reflect some categories of evidence that were not initially foreseen. For example, when it came to such cases as MobiCorp, one strong component in their decision-making process was pragmatism – that is, such matters as the choice of a system were decided upon based on its fitness for their intended purpose. The same theme was present in a few other cases, such as Space Inc., and a dedicated code was used for that. Similarly, SoftCorp and a few others indicated a strong tendency to see knowledge as a power base, for which a code was created, too. Overall, if paired codes such as, for example, 'ANX (+/-)' are counted as two, there were about fifty codes used in total.

The data was transcribed and coded. In each case, several key areas were explored in three steps, each consisting of two or three passes through the evidence in order to ensure that no relevant items were left out. First (Step 1), the evidence for behaviours corresponding to high or low levels of cultural dimensions was highlighted. This was done to check whether the cases conformed to Hofstede's theory, i.e, whether Russian cases demonstrated high PDI, low IDV, low MAS and so on, and vice versa in Anglo-Saxon ones. As it shall be seen

from the cross-case analysis in Chapter 6, this was so in the majority of cases, but not in all sixteen, and this led to some revision of the explanatory hypotheses in line with the analytical induction strategy. Furthermore (Step 2), UTAUT elements were identified in responses, if present, and used to provide structure to understanding the adoption process in every given case. Moreover (Step 3), hypotheses-related evidence was sought, and co-occurrence of cultural dimensions codes and evidence for hypotheses was looked for; e.g., by the first hypothesis (Subsection 4.2.1), high power distance was expected to lead to the prevalence of the top-down information and knowledge flow, and vice versa. Furthermore, where such evidence was found, it was enriched by the data arising from responses containing the explanatory and illustrative information showing *how* the key factors (Dimensions, UTAUT constructs and hypotheses-related mechanisms) were inter-linked. For example, some cases have shown that not only high Collectivism leads to lower propensity of users to share knowledge beyond their immediate group, but it also creates a tension if a Web 2.0 system, aimed at increasing open knowledge sharing, is introduced, as the case in Appendix 2 shows. Similarly, multiple low-Power Distance cases contained an emergent theme of the role of the end user in Web 2.0 implementation, which was either *driven* by them, matching the egalitarian nature of Web 2.0, or was done with their active involvement, based on pragmatic considerations (i.e., Performance Expectancy was the key determinant). Conversely, in high-Power Distance cases, Social Influence, and particularly the pressure from the higher tiers in the hierarchy, had a stronger influence.

This explanatory data helped not only to confirm, develop or falsify the hypotheses, but it also provided emergent richer, contextual evidence going beyond Hofstede's Dimensions and UTAUT constructs, and illustrated the way hypothetical mechanisms were manifesting themselves.

The evidence showing the points above was highlighted during the coding process, discussed in cases' write-ups and pointed out in case summaries, thus helping develop the understanding of the 'how' part of the main research question (the third objective).

A *typical* Russian case confirming all hypotheses would have the following codes in pairs: PDI+/TDIF; COLL/ StrTP; UAI+/HSP; FEM/FemP; LTO+/LTP; IVR-/Slmg. A typical Anglo-Saxon case would have PDI-/SIF; IDV/WTP; UAI-/LSP; MAS/MasP; LTO-(or neutral/mixed for the UK)/ShTP; IVR+/Flng. Russian companies were also expected to experience more difficulties with the adoption and use of Web 2.0 systems because the Dimensions' levels (high PDI, low IDV, high UAI and LTO, and low IVR) were shown at the quantitative stage to correspond with lower usage numbers, opposite to the UK/US cases. *Deviant* cases, requiring revisions of the hypothetical explanations, would be represented by mismatches in one or more of the pairs, or success/failure despite the expected combination of codes. The contextual, illustrative data was written up into cases in order to provide more detailed explanations of the mechanisms involved. Each write-up followed the same template in order to make the cross-case analysis easier. For each one of them, some background information was discussed (the size of the company, the nature of the business and so on). It was followed by a description of the cultural context based on Hofstede and the evidence of any UTAUT constructs; then, the hypotheses were assessed and revised where necessary. Each case was also summarized in a separate sub-section to aid further analysis.

Code	Meaning
PDI+	Example of high Power Distance dynamic
PDI-	As above, low
IDV	High Individualism example
COLL	Highly collectivist example
MAS	High Masculinity example
FEM	An instance of high Femininity
UAI+	High Uncertainty Avoidance
UAI-	Low Uncertainty Avoidance
LTO+	High Long-Term Orientation
LTO-	Low Long-Term Orientation
IVR+	Indulgence-prone example (high IVR)
IVR-	Restraint-prone example (low IVR)
PE (+/-)	Examples of high/low importance of Performance Expectancy
EE (+/-)	Examples of high/low importance of Effort Expectancy
ATUT (+/-)	Examples of high/low importance of Attitude Towards the Use of Technology
SI (+/-)	Examples of high/low importance of Social Influence
FC (+/-)	Examples of high/low importance of Facilitating Conditions
SE (+/-)	Examples of high/low importance of Self-Efficacy
ANX (+/-)	Examples of high/low importance of Anxiety
NAT	A trait in line with Hofstede's expectations for the host country
ORG	A trait/behaviour attributable to the particular organization

Table 4: The codes related to Hofstede's Dimensions and UTAUT constructs.

Hypothesis	Code	Comments
H1	TDIF	Top-Down Information Flow; examples of information and knowledge exchange between subordinates and superiors;
	SIF	Sideways information flow – information and knowledge exchange between peers, at the same hierarchical level;
H2	StrTP	Strong Ties Preference; propensity and/or desire to work in tightly knit groups with well-established relationships;
	WTP	Weak Tie Preference; opposite to the above;
H3	HSP	High Structure Preference; expressed propensity and/or desire to have KM systems clearly structured;
	LSP	Low Structure Preference; opposite to the above;
H4	MasP	High Masculinity; an expressed link between masculine values and the use of systems;
	FemP	High Femininity; an expressed link between <i>feminine</i> values and the systems' use;
H5	LTP	Long-Term Preference; a desire/preference to work with the systems of long-term importance
	ShTP	Short-Term preference; opposite to the above;
H6	FImg	Fun Image; a perceived high level of frivolity/un-seriousness/non-business nature of a system;
	SImg	Serious Image –opposite to the above.

Table 5: The hypotheses-related codes.

### 3.9.2. Cross-Case Analysis

Another important consideration that had to be taken into account was the relationship between the cases, i.e., how individual pieces of analysis could be brought together to paint the overall picture, to compare and contrast the cases from similar backgrounds, and to critically analyse the commonalities.

This could be done in a number of ways, as Miles and Huberman describe in a dedicated chapter (Miles and Huberman, 1994, pp.172-206).

The key distinction the authors draw is that the cross-case analysis can be centred on cases, or variables, or, in a mixed way, on both. The variable-oriented approach means that a certain parameter is looked at across a high number of cases in order to see patterns,

trends and between-variable interdependencies and correlations. The unit of analysis in this approach is a data series, independent of the multitude of individual contexts. For example, if drug use habits are studied across a number of cases, the data referring to them will be extracted and compiled into a dataset, possibly with other relevant variables depending on the research question. However, what it means is that the complexity of an individual case is lost to a large degree; the variable under study will be abstracted from the cases' context, and the findings would tend to be more conceptual and theoretical, with little explicit comparison between cases (Miles and Huberman, 1994).

The case-oriented approach takes an individual case as the primary unit of analysis, and looks at it in all its complexity, addressing the causations, linkages and interdependencies *within* each case, and only then proceeding to the cross-case comparison, typically between fewer cases.

Miles and Huberman identify a number of different case-oriented options (Miles and Huberman, 1994). *Replication* strategy suggests that the first case is addressed in depth using a theoretical framework, and the outcomes are used as a template for further cases' analysis. The *multiple exemplars* approach suggests breaking down a phenomenon into constituent parts, collecting multiple examples, searching for essential elements within them and then re-constructing the whole picture out of the outcomes. The *types*, or *families-oriented* strategy is based upon comparing cases and trying to see if they form groups or clusters sharing some commonalities.

The authors, however, advocate a combination of the variable- and the case-oriented strategies; in the authors' own words, "*It's possible, and usually desirable, to combine or integrate case-oriented and variable-oriented approaches*" (ibid., p.176). Miles and Huberman call the suggested mixed strategy *stacking comparable cases*, and it could be broken down into a number of steps: 1) using a standard set of variables (allowing for some

flexibility for emergent themes), a series of cases is written up; 2) each case is analysed in depth; 3) once the understanding of each case is achieved, the case-level findings are ‘stacked’ in a meta-matrix and systematically compared and analysed.

From the viewpoint of this research, the biggest advantage of this approach was how well it fitted the analytical induction strategy. Each individual case would need to be written up, reduced and coded, and analysed in search for examples of cultural dimensions and UTAUT constructs, hypotheses-related evidence, and any emergent themes. The findings would then be stacked together, one by one, testing the hypotheses as one went and duly modifying them, if need be. The stacking process could be gradual, with each case added as soon as the case-level findings were finalized; this approach would have the benefit of keeping the hypotheses up to date all the time rather than having to deal with a large volume of tests to be done if the whole multitude of cases were stacked all at once. After this, all individual results would need to be collated into a meta-matrix and systematically analysed looking for clusters, patterns and causal links.

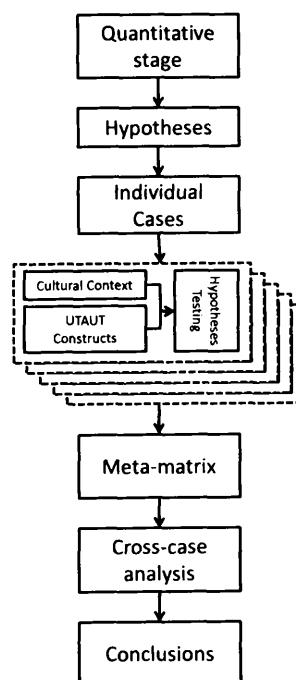


Figure 8: The qualitative analysis flowchart

The flowchart for this process is depicted on Fig. 8. The quantitative stage is shown on it to highlight how the process fits into the overall mixed method strategy.

It was, therefore, decided to proceed with this approach, and the results are discussed in Chapter 6. The way the overall qualitative stage was designed, was as follows. Each interview produced either a recording where possible, or a set of field notes, or both, as well as a set of post-interview notes taken immediately after the session. All records were first transcribed and arranged to follow the actual sequence of events in the interview, regardless of the relevance. The data was taken through the first coarse round of reduction, with clearly irrelevant parts (e.g., small talk and other opening remarks) put aside. Several rounds of coding took place, concentrating on three areas: cultural context (dimensions); UTAUT constructs, and the evidence for or against the hypotheses. The process of coding consisted of going through the transcripts and identifying whether any of the passages, or parts thereof, matched the descriptions of the frameworks' elements, or fell into other categories that were on the list (e.g., hypotheses-related evidence or emergent themes).

The process was repeated two or three times, depending on the richness of the evidence.

Finding the evidence contradicting the hypotheses, on a number of occasions, led to the hypotheses' revision. An account containing the background information, a description of the cultural context, a summary of the evidence related to UTAUT constructs and the assessment of hypotheses was written for each case, along with producing what Miles and Huberman call 'a conceptually ordered display' (Miles and Huberman, 1994), i.e., a matrix outlining the key findings from the case related to dimensions, constructs and hypotheses. A deliberate effort was made to keep these matrices uniform in order to make stacking them easier.

On a number of occasions, evidence was found that would not fit satisfactorily into the hypothetical explanations, and the hypotheses had to be adjusted. This is discussed further down in corresponding cases' write-ups. This concluded the within-case stage of the qualitative analysis.

The cross-case stage consisted of collating the individual findings matrices into a case-ordered two-variable meta-matrix outlining the evidence for any links between the cultural dimensions and UTAUT constructs, in pairs (42 were theoretically possible, however, some were absent from all cases). The results were then fed into a conceptually-ordered display, i.e., a 6 x 7 matrix (cultural dimensions vs. UTAUT elements). The findings were compared with the hypotheses, and the final set of explanatory statements was produced.

LUMS operates a system of ethical approvals that automatically initiates if the research involves humans or non-human vertebrates, and all the endorsements and approvals have been duly filed for and acquired; however, the research methodology literature often takes it a few steps further than merely requiring an informed consent, as the LUMS procedure demands, and it was clear that a more detailed ethical risk assessment was necessary.

Silverman (2011), Saunders, Lewis et al., (2012) and Easterby-Smith, Thorpe et al. (2012) suggest slightly different lists of potential ethical concerns (e.g., Saunders and Lewis are the only source that include the researcher's safety as something to consider), but the universally discussed items are: avoiding deception; acquiring informed consent; respecting the participants' dignity and privacy; maintaining anonymity and confidentiality; avoiding misrepresentation or miscommunication of the research results, and ensuring that no harm is done to participants or their organizations.

No participants were exploited, deceived, coerced, disrespected or otherwise harmed during the research process. Their informed consent was sought by explaining the purpose of the interview, the process, and the fullness of the anonymity, as well as pointing out that the interview could be stopped at any time and that answering any of the questions was entirely voluntary and they could skip any of them if they so desired.

This was done twice: once during the initial contact when an appointment for the interview was being made, and once more, at the beginning of the interview, when the respondents were reminded about the key points. Furthermore, during the initial conversation they were supplied with an executive summary of the research with some background information and the points mentioned above.

In one case, the respondent company, although quite happy to provide an informed representative to answer questions, also requested a confidentiality agreement to be signed. Its key requirement was the anonymity and non-disclosure of any business-sensitive information, both of which were satisfied.

About a half of all respondents indicated a strong preference towards their and their organization's anonymity. Although this requirement was not universal, and nine organizations didn't mind being identified (although none requested an explicit reference to them either), it was decided, for the sake of consistency, to anonymise all respondents and their companies.

This was done in such a way that neither an outsider, nor a different person working in one of the respondents' organizations would be able to recognize them. Aliases were used for all names; the industries were changed slightly or made more generic (e.g., 'FMCG manufacturing'), as were the job titles. At the same time, none of the changes affected the accuracy of the data directly relevant to the research question.

All data was stored safely and securely on the University's servers. No personal information apart from the nature of the job, was asked for, collected or retained.

Overall, from the ethical point of view the research was of low-risk, and with due considerations given to privacy, anonymity and data security, no other major issues arose.

### 3.11. Methodology: Conclusion

To summarize this chapter, it can be stated that the ontological and epistemological position that fitted the research question and the aims/objectives of the research was that of internal realism and positivism (Easterby-Smith, Thorpe et al., 2012). The study adopted a realist belief in the objectivity of reality, yet at the same time, accepted the importance of the human mind in terms of making sense of it. Methodologically, this stance allowed some freedom of choice in terms of quantitative/qualitative methods, which suited the research objectives. The objectives implied a combination of different levels of analysis, which, in turn, meant that different methods were required to address them. The first objective addressed the macro-scale variables, and to remain representative, sample sizes involved in the investigation had to be quite large; statistical methods (Pearson correlation coefficients) had to be used in order to highlight any correlations between Hofstede's scores and the Web 2.0 usage statistics by country.

This, however, could answer the 'whether' part of the main research question, i.e., *whether* national culture had an impact on the use of social media, but provided little insight insofar as the mechanisms involved were concerned.

The latter required going a level deeper and investigating cases on a company-by-company basis in order to find an explanation for the trends highlighted at the first stage, which meant using qualitative, comparative idiographic methods in combination with the earlier conducted statistical study.

The mixed methods approach, although still a matter of some debate, has established itself as a valid research methodology in business and management studies (Cameron and Molina-Azorin, 2011).

Different sources dedicated to mixed method identify various types of research designs, and by Creswell and Plano Clark's typology (Creswell and Plano Clark, 2007), this study fell into the explanatory category whereby the first stage is quantitative and provides the basis for the second, qualitative one, explaining and expanding on the numerical findings.

For the qualitative stage the choice was made to use what Bryman and Bell (2006) describe as the analytical induction strategy – a process whereby a hypothesis (a suggestion of a mechanism underlying statistical trends identified at the first stage, in this particular case) is continuously compared against the evidence. Should any cases contradicting the hypothesis be found, it is re-formulated and adjusted in order to reflect the evidence until no more non-conformant cases are found and the revised version of the hypothesis can be tentatively assumed as confirmed.

Influenced chiefly by the requirements of the objectives, semi-structured interviews were chosen as the qualitative data gathering technique, with the Unified Theory of Acceptance and Use of Technology along with Hofstede's dimensions serving as the foundation for the interview guide and the initial list of codes in accordance to the process laid out by Miles and Huberman (1994). The overall coding, within-case and between-case analysis processes were guided by the latter source as well. Evidence was sought in the cases for different levels of dimensions and instances supporting or refuting the hypotheses, which in some cases led to the adjustment of the explanations they provided, in line with the analytical induction process.

Finally, the research has been assessed in terms of the ethical concerns, and was deemed low-risk, with any potential issues duly taken care of.

#### 4. Data Collection Results: Quantitative Stage

The purpose of this stage was to assess correlations between Web 2.0 usage figures by country and Hofstede's dimensions, highlighting the possibilities for culture-bound dependencies. This developed the initial idea, described in the Introduction to this thesis and based on evident irregularities in Wikipedia's user distribution by country, by means of large-scale data collection and analysis, and allowed to propose a set of explanatory hypotheses that were further refined at the later stages of the research.

The rest of the chapter proceeds as follows. The findings of the stage are presented and discussed, first as a whole, and then by technological groups (e.g., Wikis vs. media sharing sites). Based on these, a set of hypotheses is put forth, on a dimension-by-dimension basis, supported by additional literature search and analysis. Later on, at the qualitative stage, the hypotheses are fed into the analytical induction process.

#### 4.1. Findings

The data from over a hundred social media sites was gathered on Google AdPlanner, but the list was reduced to fifteen sites with global presence and universal coverage by topic, as was discussed in detail in section 3.7.2.

The results are presented in Table 6. As it can be seen from it, the analysis has been done for all fifteen sites combined, as well as individually (the combined figures would highlight any general trends, whereas analysis by site would offer more detail and provide further evidence of any individual differences). For the combined figures, the usage data for the sites have been added up on a country-by-country basis and divided by the estimate Internet population for that country. This ratio describes the probability of an Internet user visiting one of the fifteen sites if they go online. Similarly, the site-specific figures were calculated by dividing the visitors' numbers by the Internet population, both per country, and their meaning is the probability of a user to visit that particular site.

The figures were processed in SPSS to check for any correlations with Hofstede's scores. The sample size was the same for each site; the combined sets, however, varied slightly (from 52 to 57) depending on the country data availability in Hofstede's table, in Google's database and on InternetWorldStats' list.

Several levels of significance are highlighted in the table. The colour coding (green or red) indicates correlations significant at  $p=.10$ , positive or negative respectively. In addition,  $p=.05$  and  $p=.01$  are highlighted with one asterisk or two, correspondingly.

The significance level of  $p=.10$  was taken as the basis for the discussion. Despite being comparatively high, it could be argued that these figures are used as a foundation for developing the hypotheses, rather than leading to any concrete claims. In that respect, this significance level appears sufficiently strict.

		Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-Term Orientation	Indulgence vs. Restraint
15 Sites Combined	Pearson Correlation	-.321*	.311*	.035	.011	.101	.030
	Sig. (2-tailed)	.020	.025	.803	.938	.456	.826
	N	52	52	52	52	57	56
LinkedIn	Pearson Correlation	-.413**	.515**	-.317*	.241	-.168	.309*
	Sig. (2-tailed)	.002	.000	.022	.086	.213	.021
Wikipedia	Pearson Correlation	-.330*	.290*	.110	.199	.049	.184
	Sig. (2-tailed)	.017	.037	.437	.157	.715	.174
Flickr	Pearson Correlation	-.205	.125	-.076	-.148	-.010	.181
	Sig. (2-tailed)	.145	.376	.592	.294	.940	.181
Twitter	Pearson Correlation	-.007	-.080	.041	.132	-.034	.214
	Sig. (2-tailed)	.962	.571	.770	.350	.802	.113
Photobucket	Pearson Correlation	-.197	.132	.109	.030	-.043	-.078
	Sig. (2-tailed)	.161	.352	.440	.835	.749	.569
eHow	Pearson Correlation	-.261	.406**	.109	-.468**	-.242	.278*
	Sig. (2-tailed)	.062	.003	.444	.000	.070	.038
Buzznet	Pearson Correlation	-.304*	.439**	-.011	-.077	-.247	.234
	Sig. (2-tailed)	.029	.001	.938	.586	.064	.082
Deviantart.com	Pearson Correlation	.014	.112	-.059	.074	-.042	-.019
	Sig. (2-tailed)	.922	.428	.677	.601	.756	.892
Last.fm	Pearson Correlation	-.112	.246	-.060	.047	.036	-.016
	Sig. (2-tailed)	.428	.079	.673	.740	.789	.904
Multiply.com	Pearson Correlation	.264	-.258	-.058	-.175	-.148	-.040
	Sig. (2-tailed)	.059	.065	.681	.215	.274	.769
Stumbleupon.com	Pearson Correlation	-.146	.275*	-.011	-.213	-.211	.066
	Sig. (2-tailed)	.301	.049	.938	.129	.115	.630
Tagged.com	Pearson Correlation	.256	-.235	-.190	-.101	-.376**	.034
	Sig. (2-tailed)	.067	.093	.177	.478	.004	.802
Tumblr.com	Pearson Correlation	-.139	.265	.113	-.243	-.033	.280*
	Sig. (2-tailed)	.325	.058	.427	.082	.810	.037
Wikihow.com	Pearson Correlation	-.286*	.382**	.071	-.451**	-.275*	.328*
	Sig. (2-tailed)	.040	.005	.618	.001	.038	.013
Wiktionary.org	Pearson Correlation	-.239	.241	-.009	.378**	.178	-.083
	Sig. (2-tailed)	.088	.085	.949	.006	.186	.545

Table 6: The correlation analysis results

As it can be seen from the table, several trends have emerged.

First of all, the fifteen sites combined have shown statistically significant at  $p=.05$  negative correlation with power distance (PDI) and positive with individualism (IDV).

The dimension-by-dimension analysis highlights that PDI, in line with the aggregate figures, shows signs of mostly negative correlations across the set; out of eight sites with significant coefficients, only two are positive; they are quite weak both in the magnitude of the correlation coefficient (ca. 0.26) and its significance; furthermore, as the aggregate figure shows, they are out-balanced by the negative ones.

IDV, in accordance with the aggregate figure, is mostly positive in a 11:9:2 ratio (total:positive:negative).

Masculinity (MAS) stands out in the sense that only one site shows a correlation with it, and it is LinkedIn (-.317,  $p=.05$ ). It is an interesting finding in two respects: first of all, no other dimension has so little impact; all others show correlations with at least four sites. Masculinity has shown little relevance for the Web 2.0 world as a whole. Another point is that LinkedIn is the only professional network on the list, and one explanation for its masculine link can be that by its nature, it caters for professional people with a higher drive for career building and achievement rather than a wider population of general public.

Uncertainty avoidance (UAI) does show some correlations, although fewer than the first two dimensions. They are largely negative with one positive outlier (Wiktionary). This result is somewhat unexpected: although the correlations that exist are negative, as could be predicted based on the unstructured and dynamic nature of Web 2.0 and the meaning of uncertainty avoidance, there are comparatively few (four) negatives and one positive, and the aggregate figure does not correlate with the user statistics. Wiktionary as an outlier is unusual too; it conformed with the majority in case of the previous two dimensions.

Overall, the link between UAI and Web 2.0's adoption rates can be tentatively considered weakly negative.

Long-term orientation (LTO) was similar to UAI, demonstrating four correlations, all of them negative, but without any positive outliers, and in this respect the picture is more consistent. The result should be interpreted as 'the more short-term oriented the culture, the higher the propensity to use Web 2.0', however, it must be pointed out that the same as in the previous case, the link is relatively weak.

Last but not least, Indulgence vs. Restraint shows five positive correlations, i.e., the more indulgent a culture, the higher the probability their users will be using Web 2.0.

A within-group comparison demonstrates that correlations shown by Wikis are consistent with each other (Table 7, an extract from the overall table).

		Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-Term Orientation	Indulgence vs. Restraint
Wikipedia	Pearson Correlation	-.330*	.290*	.110	.199	.049	.184
	Sig. (2-tailed)	.017	.037	.437	.157	.715	.174
eHow	Pearson Correlation	-.261	.406**	.109	-.468**	-.242	.278*
	Sig. (2-tailed)	.062	.003	.444	.000	.070	.038
Wikihow.com	Pearson Correlation	-.286*	.382**	.071	-.451**	-.275*	.328*
	Sig. (2-tailed)	.040	.005	.618	.001	.038	.013
Wiktionary.org	Pearson Correlation	-.239	.241	-.009	.378**	.178	-.083
	Sig. (2-tailed)	.088	.085	.949	.006	.186	.545

Table 7: Wiki correlations

All of them are correlating negatively and positively with PDI and IDV, respectively, and none correlate with MAS. The remaining three dimensions are less consistent, although there is only one significant contradiction – the aforementioned Wiktionary/UAI combination. eHow and Wikihow match each other on the rest of the table completely, whereas Wikipedia and Wiktionary show no correlations.

As it can be seen from Table 8, the media sharing sites show much less consistency than Wikis: Flickr, Photobucket and Deviantart do not have any correlations; Last.fm has one, Multiply has two, and only Buzznet has four.

		Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-Term Orientation	Indulgence vs. Restraint
Flickr	Pearson Correlation	-.205	.125	-.076	-.148	-.010	.181
	Sig. (2-tailed)	.145	.376	.592	.294	.940	.181
Photobucket	Pearson Correlation	-.197	.132	.109	.030	-.043	-.078
	Sig. (2-tailed)	.161	.352	.440	.835	.749	.569
	Sig. (2-tailed)	.062	.003	.444	.000	.070	.038
Buzznet	Pearson Correlation	<span style="background-color: red;">-.304*</span>	<span style="background-color: green;">.439**</span>	-.011	-.077	<span style="background-color: red;">-.247</span>	<span style="background-color: green;">.234</span>
	Sig. (2-tailed)	.029	.001	.938	.586	.064	.082
Deviantart.com	Pearson Correlation	.014	.112	-.059	.074	-.042	-.019
	Sig. (2-tailed)	.922	.428	.677	.601	.756	.892
Last.fm	Pearson Correlation	-.112	<span style="background-color: green;">.246</span>	-.060	.047	.036	-.016
	Sig. (2-tailed)	.428	.079	.673	.740	.789	.904
Multiply.com	Pearson Correlation	<span style="background-color: green;">.264</span>	<span style="background-color: red;">-.258</span>	-.058	-.175	-.148	-.040
	Sig. (2-tailed)	.059	.065	.681	.215	.274	.769

Table 8: Media sharing sites and their correlations

Microblogs and tagging sites, two groups of two members each, show similar trends (Tables 9 and 10): one member shows none or just one correlation (Twitter and Stumbleupon), and the remaining ones (Tumblr.com and Tagged.com) show three.

		Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-Term Orientation	Indulgence vs. Restraint
Twitter	Pearson Correlation	-.007	-.080	.041	.132	-.034	.214
	Sig. (2-tailed)	.962	.571	.770	.350	.802	.113
Tumblr.com	Pearson Correlation	-.139	.265	.113	-.243	-.033	.280*
	Sig. (2-tailed)	.325	.058	.427	.082	.810	.037

Table 9: Microblogging sites' correlations

		Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-Term Orientation	Indulgence vs. Restraint
Stumbleupon.com	Pearson Correlation	-.146	.275*	-.011	-.213	-.211	.066
	Sig. (2-tailed)	.301	.049	.938	.129	.115	.630
Tagged.com	Pearson Correlation	.256	-.235	-.190	-.101	-.376**	.034
	Sig. (2-tailed)	.067	.093	.177	.478	.004	.802

Table 10: Tagging sites' correlations

The remaining site, LinkedIn, the only professional network on the list, is consistent with Wikis with the exception of MAS (negative correlation) and LTO (no correlation).

## **4.2. Discussion and Hypotheses**

Several conclusions could be made based on these results. Various dimensions have shown different degrees of prominence in the quantitative results. PDI and IDV showed the strongest correlation with the usage figures; MAS was consistently free from correlations. UAI, LTO and IVR have shown comparatively weak negative, negative and positive links, respectively.

Out of five Web 2.0 categories, Wikis and a professional network have shown a consistent pattern; media sharing sites, microblogs and tagging sites had noticeably fewer links, with a several of them being indifferent to the cultural dimensions, and others behaving inconsistently. As the qualitative stage revealed later on, Wikis and professional networks were the most frequently used types of social media in participating organizations, thus being the most relevant to this study.

All of the dimensions have shown some prevalent trends: PDI, UAI and LTO, a negative one; IDV and IVR, a positive, and MAS, a consistent absence of correlations. In order to explain these, an additional literature search was carried out, and a set of possible explanations was provided to serve a starting point for the analytical induction process. These are reviewed in the following sub-sections. All references to Hofstede are meant to relate to the latest, 3rd edition of "Cultures and Organizations: Software of the Mind" (Hofstede, Hofstede et al., 2010).

### **4.2.1. Power Distance**

PDI characterizes the degree to which inequality is accepted by representatives of a culture (Hofstede, Hofstede et al., 2010). The scores for the dimension were derived in the original IBM-based surveys based on responses to three questions: how afraid were non-

managerial employees to speak up against their boss, how paternalistic was the prevalent management style, and what was the *preference* for the decision making style – autocratic vs. consultative. The three questions co-varied as a cluster: in case if a respondent had indicated being afraid to speak up, it was also likely that not only would they identify their boss's style as autocratic, but they would state that they would *prefer* it that way, too. It is a two-way process: in high PDI-cultures not only an authority figure *can* be autocratic, but they are *expected* to behave that way by those in subordinate positions.

The behavioral leitmotif Hofstede highlights is the dependency of subordinates on their superiors: if the PDI is high, subordinates are less capable of acting on their own, without some sort of direction from their superior. It manifests itself in a number of behavioral patterns that fall well in line with the specifics of Web 2.0 and can be used to explain its cultural sensitivity. At school, for example, teachers are seen as *the* source of knowledge which is their personal wisdom rather than merely impersonal, objective information. Students are treated as subordinates, or in the worst cases, as inferiors; there is little space for self-expression ('only when spoken to'), and the whole educational process goes essentially one way.

Developing Hofstede's' ideas, a number of authors have published papers dedicated to the influence of cultural dimensions on learning and knowledge-related processes. High PDI is seen as a factor inhibiting its free flow - e.g., Bhagat, Kedia et al. (2002), point out that in 'vertical' cultures (which is equivalent to high PDI) the information flows from top to bottom only, whereas in 'horizontal' ones (low PDI) it does so in both directions in equal measures. The authors also show that in case of inter-cultural knowledge transfer PDI matters most in case of the *social* knowledge transfer (as opposed to *human* and *structured*). Similarly, Ardichvili, Maurer et al. (2006), have shown on the example of Caterpillar Inc. that in selected high-PDI countries (Russia, China and Brazil) managers are

prone to trying to control the information flow, taking the ‘knowledge is power’ maxim literally; Thongprasert and Cross (2008) came to the same conclusions with regards to Thai students’ participation in online learning communities, citing half a dozen other papers that support the postulate of high PDI inhibiting the knowledge flow. Another example is (Zaidman and Brock, 2009), who have found that in high-PDI India (77 points), hierarchy was a significant barrier to knowledge transfer in two ways: first, because “*there is tendency to monopolize and control knowledge mainly by seniors*” (ibid., p. 317), and second, because of “*a hesitation to ask about knowledge between junior employees and senior employees*” and that “*juniors in the Indian branch hesitated to approach seniors*” (ibid., p. 318), the latter for two reasons, namely a fear of a negative response as well as juniors avoiding a possibility to leave an impression that they know more than their superiors.

The key aspect of PDI in the knowledge management context is high power distance implying that in any given group there will be a limited number of people that are accepted as potential sources of knowledge – teachers, masters, gurus, *shifus*, experts or anything else along these lines. The knowledge is passed in a top-down way from an authority figure to those further down the hierarchy. In a low-PDI context knowledge exchange can go in any direction, between hierarchical levels as well as within them, virtually mirroring the Web 2.0’s ideology (Fig. 9).

The PDI-based hypothesis therefore was formulated as:

*H1: in high-PDI context the use of Web 2.0 tools is impeded by the information and knowledge moving predominantly in the top-down direction with little knowledge exchange happening in the bottom-up way as well as within the same level in the organization.*

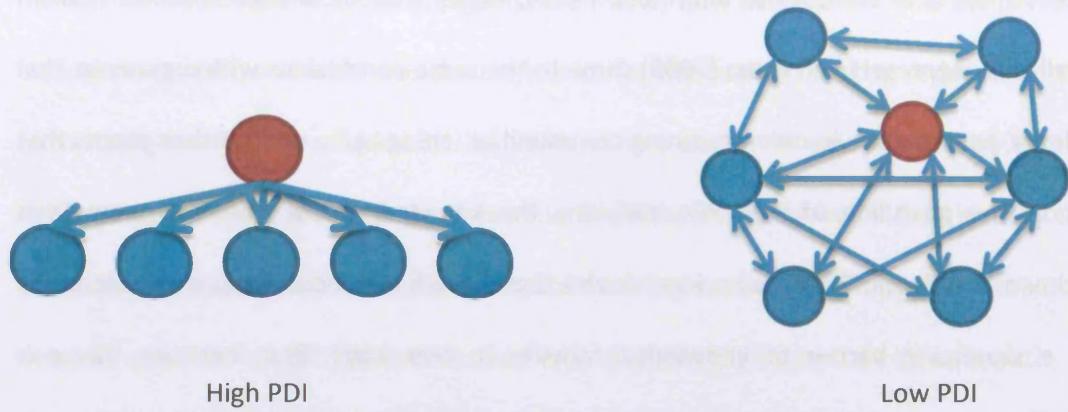


Figure 9: Knowledge flows in high vs. low PDI contexts.

Should the hypotheses hold, there would be clear examples of relevant behaviours: first of all, the communication channels should be used in Russian companies to pass the knowledge down from the management with little movement in the opposite direction and little exchange within the same levels in the hierarchy. Conversely, in Anglo-Saxon ones there should be comparatively more ‘horizontal’ exchange without much involvement of the higher tiers in the management capacity; it would be acceptable, however, if a higher-level manager was still involved either as an expert or a facilitator, acting either from *within* the user group or from without it, but at the same level.

#### 4.2.2. Individualism

Individualism/collectivism characterizes a society from a viewpoint of prevalence of the individual interests versus those of a group or a collective (Hofstede, Hofstede et al., 2010).

Another way of describing it is through the strength of ties forming between people (Granovetter, 1983) – the more collectivist the culture, the stronger they are, whereas an

individualist society would be more fragmented, nuclear, with only weak connections existing between its constituents.

The notion of the connections' (ties') strength, even though not as such central to Hofstede's definition of individualism and collectivism, is quite useful in explaining why Wikis, relying on active collaboration between users, and social networks, involving high volume of communication through extended groups within a number of communities, work better in cultural context where individualism prevails; the discussion shall return to it a little later.

Refraining from re-telling Hofstede's corresponding chapter in full, several points can be highlighted that are useful for explaining why Web 2.0 correlates with IDV the way it does, listed in the order of appearance in (Hofstede, Hofstede et al., 2010):

- Cultural collectivism is characterized by a well pronounced distinction between in-group and out-group; typical example of which can be found in aforementioned Liu and Porter's description of *guanxi* and *quanzi* (Liu and Porter, 2010), i.e., well-established relationships and the 'circle of trust', as well as in the Russian practice of *blat* (Ledeneva, 2008) - a widely used form of nepotism;
- In Hall's high-low context dichotomy (Hall, 1976), collectivism is associated with the former and individualism with the latter; the higher the IDV, the more explicit and the less tacit is communication;
- Individualist cultures show strong leaning towards gregarious behaviour, however only if spending time with others is a matter of an individual's free choice;
- Typically, a student in collectivist environment would hesitate to speak up unless the teacher is around, especially if out-group members are present – however, the smaller the group, the easier it gets for them, and it is advisable to break large classes into small group in case if more active student participation is needed; it is

not hard to see how the same behaviour should be observable in other settings with the same group and power dynamics (i.e., large group meetings at work with or without the manager in the room);

- ICT is used significantly more actively in individualist cultures; it is speculated that this is caused by the collectivists having more offline, ‘real life’ interactions with fellow humans allowing them to satisfy their needs – however, individualists’ gregariousness could play a role in it as well. Hofstede also claims that ICT “*links individuals*” (Hofstede, Hofstede et al., 2010, p.123) and therefore is used more willingly in high IDV environments; this is, however, a point that does not take into account the groupware aspect of modern ICT;
- Individualists are prone to having a larger quantity of more ‘shallow’ conversations – ‘small talk’ and socializing are quite common, which is linked to the last, but not least notable point:
- At the very fundamental level, the higher the IDV, the weaker the ties between individuals. In collectivist cultures friendships, business partnerships and employment may be harder to establish, but they last for longer, are harder if it all possible to break and are fewer in numbers. In individualist environments, conversely, they are more numerous, but have less emotional attachment in them and are easily established and broken up.

Singling out a factor underlying all of the above is more difficult than it was with PDI. The in/out group dilemma, introversion/extraversion, and propensity to having shallow social interactions can be directly linked to in preferences towards social ties of certain strengths (Granovetter, 1983): weak in individualist cases and strong in collectivist ones. The lower level of ICT use in collectivist cultures can be explained by the most modern ways of communication applying some degree of codification – from high-speed video-conferencing (relatively low) to instant messaging and microblogging (very high) and thus stripping the

tacit dimension off messages and de-contextualizing them, which makes ICT less suitable for high context communication. The high-low context difference, in turn, can be explained by Hall's view (Hall, 1976) that high context cultures are strongly oriented towards in-group interactions (creating context takes time and stability, which implies higher interaction intensity over the time).

All but one items on the list above point towards the direct or indirect link to ties' strength. The only remaining one – speaking up in class – is an example of a particular behavioral pattern, but it is worth mentioning due to its relevance to Wiki behavior: by writing an article on Wikipedia one would get exposed to a wide community without a 'teacher' present. Besides, it could be attributed to low inclination towards going out of group in collectivist context and through this, linked to the ties again.

All points lead to a conclusion that Wikis and social networks are likely to be used more actively in cultures where weak ties are prevalent than in strongly-tied communities. Although this conclusion arises from looking at Hofstede's description of collectivism, McAfee employs the same concept for explaining the Web 2.0 functionality in terms of social networks; a whole chapter in (McAfee, 2009) is dedicated to strong, weak and potential ties (Chapter 4, "New Approaches To Old Problems", pp. 81-127), and it is suggested that Web 2.0's ability to facilitate weak ties as well as to convert potential ones into weak, is one of its success secrets. The two paradigms converge at this point: Hofstede describes how ties depend on culture, and McAfee – how Web 2.0 tools can be used in facilitating them.

There is a well-developed body of literature supporting Hofstede's views on the positive link between collectivism and the strength of ties, specifically in the business context.

The aforementioned phenomena of *blat* and *guanxi* have been much written about - e.g., (Ledeneva, 2008), among many others. In a sense, the prominence of both phenomena in

Russia and China respectively as well as a virtual absence of anything similar in the Western world is a vivid enough illustration of how different can be ways of conducting business depending on the degree of collectivism.

A large amount of research has been done along those lines aimed at particular aspects of the relationship. For example, Tiessen (1997), writing about the cultural side of entrepreneurship, and in particular about Japan and the phenomenon of *keiretsu* – long-term inter-firm alliances – points out that the higher the level of collectivism, the more important is the role played by relational ties (well-established business relationships) in forming alliances, as opposed to a more pragmatic way of choosing a business partner. This view is supported by Steensma, Marino et al. (2000), who have shown that in individualist cultures it is more common to form alliances based on pragmatic criteria such as minimizing the transaction cost, and that such relationships are likely to be of 'arm's length', whereas more collectivist approach could manifest itself in forming equity ties (mutual investment).

The former represents a weaker-tie approach in comparison to the latter.

Bringing it closer to the knowledge management area, Liu and Porter (2010), specifically identify *guanxi* as a major hurdle in KM systems implementation in China. Li (2010), describing the implementation of an online knowledge sharing system in a Fortune 100 multinational corporation, points out that Chinese participants were reluctant to partake in knowledge sharing specifically because they were afraid that the context of what they were about to share could be lost (i.e., the conversion of knowledge into the explicit form would lead to the loss of its tacit component), whereas Americans, conversely, were quite interested in learning something from a different context, regardless of how much of it would get through; the perceived importance of context in communication was remarkably different, directly supporting Hofstede's claims of the lower propensity to use ICT in collectivist cultures and related higher-context preference in communication.

Continuing the theme of online collaboration, Cho and Lee (2008), found in their study concerning culture-related patterns in online behaviour (collaborative information seeking) that pre-existing social networks and intergroup boundaries (subgroups within groups) have a negative influence on knowledge acquisition and transfer. A strong tie between two individuals could provide a means of quicker and more reliable communication, however, in case of knowledge search, restricting oneself to a pre-existing circle of friends and ignoring the weak ties would lead to knowledge-related inbreeding. Furthermore, the authors also found that this in-group preference was culture-dependent: Singaporeans preferred staying within group, whereas Americans didn't mind venturing outside, similar to the case in (Li, 2010).

An investigation of the culture's influence on co-worker relations (Morris, Podolny et al., 2008) led to conclusions that Americans are pragmatic about establishing ties and drop them more easily as soon as they become redundant; Chinese are more prone to directing their ties towards super-ordinates and to be more affectionate about them; Germans rely on formalized rules and procedures in establishing social connections, and the Spanish like to spend time having a social chat during work and have long-lasting friendships, but average-lasting exchange connections.

A conclusion can be made that there is a convincing amount of evidence supporting Hofstede's claims that collectivism means stronger ties with fewer people, thus leading to creation of tightly knit nuclei, which may – in bigger groups, where there is enough people – lead to fragmentation and formation of subgroups. This trend manifests itself at many levels, from the individual one to the alliances between organizations, as well as in a variety of applications. Furthermore, conforming to the general principles of the network theory laid out by Granovetter (1983), collectivism leads to inhibition of out-group knowledge

flow, which in case of complex meta-groups means slowing down the overall knowledge exchange and sometimes (at least partial) refusal to collaborate.

Little academic literature can be found dealing directly with the notion of ties on Web 2.0. McAfee devotes a lot of attention to ties, but “Enterprise 2.0” is a practitioner-oriented book and lacks the depth of research. Another one (Easley and Kleinberg, 2010) is more precise about the theory and even mentions how Facebook and Twitter make use of weak ties, but it is based on a blog post (Marlow, Byron et al., 2009), which is providing background data to an article published earlier in The Economist (2009). Although Marlow - according to The Economist, Facebook’s in-house sociologist - has an advantage of internal data access, the findings are not detailed enough: the only conclusion is that the number of strong ties users tend to have online is the same as online, whereas the weak ties are more numerous online. The study is purely American and covers only Facebook and Twitter, so it is hard to generalize the findings onto the whole of Web 2.0 and the cross-cultural context.

The key conclusion to be taken from this body of literature to be formulated into a hypothesis is that essentially Web 2.0 means weaker ties, and so does individualism. Collectivism implies the opposite dynamic; this could explain the positive correlation with the individualism score.

The IDV-related explanatory hypothesis was formulated as:

*H2: in highly collectivist environment the use of Web 2.0 tools is inhibited by users' low propensity to utilise the weak ties and preferring to work in strongly-tied small groups instead.*

Evidence in support of this hypothesis would be, for example, instances of Russian organizations showing higher propensity for in-group work and knowledge exchange with lower level of out-group activity as well as, similarly, a higher level of reliance on well-

established relationships in both, as opposed to involvement of wider audience (strong-weak ties).

#### 4.2.3. Uncertainty Avoidance

As it was mentioned in the quantitative results subsection, UAI and Web 2.0 usage figures correlate mostly negatively, although only in comparatively few instances and with one significant positive outlier.

The link, therefore, is relatively weak. The negative nature of it, however, matches the theory well; indeed, the combination of Web 2.0's unstructured, non-hierarchical and haphazard nature with behavioural preferences implied by various degrees of uncertainty avoidance would mean that the higher the UAI, the lower should be the likelihood of people from a given country to use social media.

By Hofstede's description (Hofstede, Hofstede et al., 2010), UAI means trying to escape from any ambiguity, and it can take forms more complex than mere preferences for structures and well-defined procedures.

Starting from such things as the degree to which dirt and danger (both as archetypal manifestations of uncertainty) are avoided, Hofstede also mentions pluralism of thinking and ideas, and flexibility of rules, as well as saying that any ambiguity in relation to knowledge and its sources is more, or less, acceptable depending on the level of UAI. In highly uncertainty-avoidant countries a teacher (or a doctor, or any other figure of expertise) is expected to know the answers for certain, however, the answers are not supposed to be easy to understand by their students/patients/subordinates. The use of cryptic language is, therefore, common. Conversely, in places such as the UK, where uncertainty avoidance is low, admitting that one doesn't know the answer instead of trying

to mumble one's way out of it is seen as a sign of confidence and professionalism. People in low-UAI environments also read more books and newspapers, which is could be related to the above phenomena, in the sense that in an environment where information and knowledge do not have to come from a centralised source, a multitude of them is likely to be used.

Hofstede also asserts that "*Technology, from the most primitive to the most advanced, helps people to avoid uncertainties caused by nature*". (ibid., p. 189). It isn't disclosed what evidence this assertion is based upon, but it would be logical to conclude, based on this statement, that high UAI (i.e., cultures where demand for uncertainty-reducing means, such as technology, is high) should lead to higher rates of technological adoption. Many papers, however, provide evidence of the opposite (Maitland and Bauer, 2001; Ess and Sudweeks, 2005 and Barnett and Sung, 2005). All have found a negative correlation between UAI and the spread of the Internet; Matusitz and Musambira (2013) confirmed the negative correlation with Internet use as well as that of mobile phones, and found no significant correlation with the number of telephone landlines.

Some research has been carried out recently looking at the influence of UAI on Web 2.0's usage. For example, Guo, Tan et al. (2008), compared the Chinese user preferences for means of communication, including such social media technologies as online chat, with those from Australia. The authors have found that the former preferred telephone and online chat, whereas the latter were leaning towards emails, which is explainable by higher UAI in Australia (51 points vs. 30 for China) making people prefer a means of communication closer to putting things in writing.

Yoo and Huang (2011) looked at the use of interactive technologies in education in South Korea (85 points) and the USA (46 points) and found a similar difference between high and low UAI countries insofar a choice between different technologies was concerned. The

Koreans were fine with blogs and online communities (e.g., forums), but had high levels of anxiety in connection with Skype and virtual environments such as SecondLife, where much less is written down in comparison, and the communication is more resembling that in real time. The Americans, by contrast, felt positively about instant messengers and have reported lower levels of anxiety towards the virtual environments and online conferencing.

Research carried out by Dotan and Zaphiris (2010), dedicated to studying Flickr user preferences in Peru, Israel, Iran, Taiwan and the UK, has highlighted some UAI-related trends: a positive (0.89) correlation with tagging activity, and negative (-0.71) with participation in public groups. Both points are explainable from Hofstede's point of view: assigning tags to photos effectively means categorizing or taxonomizing them, which helps reduce uncertainty. Participation in open public communities implies unstructured interaction with unfamiliar people and has the opposite effect. This study was done on fixed-size samples from the five countries, and can't say anything about user adoption as a whole (by the findings of this research, Flickr's usage does not correlate with any of the dimensions), however, it does indicate that some aspects of social media use can be UAI-dependent.

Overall, this dimension has shown correlations in line with the literature, Hofstede's comments about uncertainty-reducing powers of *any* technology aside, even though fewer of them in comparison to PDI and IDV. The hypothesis was developed based on negative correlation with the user statistics, with a caveat that link is comparatively weak. The suggested mechanism is that social media is an inherently uncertain type of technology, and therefore it shouldn't work as well in high-UAI environments (Russia scores 95, UK 35 and the US 46 points, which provides a suitably contrasting comparison set).

The UAI-based hypothesis was formulated as:

*H3: In a high-UAI environment the use of Web 2.0 will be inhibited by the unacceptability of its unstructuredness, dynamism and lack of control, as well as the pluralist nature of knowledge generation.*

#### **4.2.4. Masculinity**

Why exactly MAS is correlating only with LinkedIn, is a difficult question to answer given the number of unknown factors potentially playing a role. Based on the evidence from the quantitative study, the following hypothesis was put forth:

*H4: Masculinity/femininity will have no specific impact on the use of Web 2.0.*

#### **4.2.5. Long-Term Orientation**

The difficulty with the last two dimensions lies in their novelty: introduced in the later editions of Hofstede's book, they are still comparatively under-researched. Quite a few papers still use four dimensions out of five (pre-2010) or six (post-2010): (Al-Gahtani, Hubona et al., 2007; Yoo and Huang, 2011; Barron and Schneckenberg, 2012), and many others; those that include five dimensions are few and far between, and those based on all six are virtually non-existent.

There are, however, some examples helping to shed some light on potential reasons for a negative link between LTO and Web 2.0's adoption.

In their comparatively early (which also means Web 1.0-oriented) paper Marcus and Gould (2000) looked at cultural influences on Web interface design and stated that in high-LTO countries website design will make greater emphasis on pragmatic value, relationships as a source of veracity and patience as a means of achieving one's goals. In low-LTO cultures, as

the authors suggest, more emphasis would be put on truth and certainty of beliefs, rules as a proof of information validity, and the desire for immediate gratification and results.

These suggestions, however, are devised on the basis of the dimension's definition only, and are not supported by evidence apart from two screen shots, one from Siemens Germany and one from Siemens China. At the same time, these suggestions can be useful in developing LTO-related hypothesis for this research.

A similar question has been investigated in (Tsikriktsis, 2002), but with a 'quality' accent to it, analysing the users' expectations from websites and coming to a conclusion that there is a positive correlation between LTO and high quality expectations, recommending that sites targeting long-term oriented audience should avoid cluttered designs, maintaining the visual appeal and high efficiency.

Ribiere, Haddad et al. (2010) in a paper already mentioned, looked at instrumental (information and knowledge sharing, pragmatic) and expressive uses of social media, and found that in their demographically limited sample there was a higher propensity to use Web 2.0 instrumentally (there was no significant correlation found with the overall usage), which is in line with Marcus and Gould's suggestion that high LTO should lead to a greater orientation on practical use of things. Ribiere, Haddad et al., however, suggest a different explanation to it, namely that "*Web 2.0 applications can be considered useful for securing future positives in terms of social interactions, developing relationships of professional, humanistic or romantic nature*" (ibid., p. 355); it is worth mentioning that Hofstede does indeed list the importance of establishing and developing long-lasting relationships (similar to *guanxi*) as a typically high-LTO behaviour.

Both interpretations remain untested. However, there is evidence for the *instrumental* use receiving more emphasis in conjunction with higher LTO, yet the more general view on Web 2.0 as something fitting longer-term attitude because of its potential for networks building

has no evidence for it (there was no correlation with the overall use). Furthermore, the quantitative stage's findings in this research show that that LinkedIn, a professional network designed and used specifically for what Ribiere, Haddad et al. are discussing, does not correlate with LTO; Marcus and Gould's explanation (greater pragmatic orientation), therefore, is more plausible.

The long-term *pragmatic* value is a leitmotif in the LTO literature listed above; whatever has potential to lay a foundation for the future, will be accepted well in long-term oriented cultures, be it personal values (perseverance and thrift, by Hofstede), business models (strategic market position vs. focus on this year's bottom line) or corresponding technology.

In this sense, the hypothetical explanation of the weakly negative link between LTO and Web 2.0's usage could be that for whatever reasons relevant to the particular context, the four sites that show negative correlations (eHow, Buzznet, Wikihow and Tagged.com) are not perceived as useful in the long run, and the rest are received indifferently. This could be caused by the dynamism of Web 2.0, and in circumstances whereby every user is a potential co-author capable of instantly changing the content as they see fit, working towards any long-term goals represents a bigger challenge.

Based on this, the LTO hypothesis is formulated as follows:

*H5: LTO has a negative impact on the adoption of Web 2.0 because of its dynamism and short-term nature.*

#### **4.2.6. Indulgence vs. Restraint**

Indulgence vs. restraint has so far received almost no researchers' attention, and as per the end of 2013, the only paper including it in the research framework applied to a broadly

relevant subject is (Arenas-Gaitán, Ramírez-Correa et al., 2011), who looked at differences in e-learning systems adoption between Spain and Chile and found no difference in TAM-based determinants.

Hofstede's description of this dimension is noticeably shorter than the rest: 24 pages compared to the average 46 per chapter, and it is considerably less detailed (Hofstede, Hofstede et al., 2010). It is relatively straightforward, however, and restraint means that anything considered even vaguely as 'fun', is frowned upon. As a consequence, any leisure activities including web surfing or using emails for personal reasons is less popular in restrained cultures.

LinkedIn, Buzznet, eHow, Tumblr and Wikihow correlate weakly but positively with IVR, which means that the more indulgent a culture is, the more likely users are to visit one of them. Why it is these five, is hard to tell without more in-depth research into user preferences, and from a quick glance nothing in what the sites are about gives them away as more 'fun' than the remaining ten; after all, LinkedIn has no space for frivolities at all, and eHow and Wikihow are advice repositories, as their names suggest. This is not about the aforementioned level of the overall Internet use either – first of all, the figures used here are proportions of the Internet population per country (which can be IVR-dependent), and second, the picture is not consistent across all fifteen sites.

It can be suggested that given the nature of the dimension in question, the link should not be about the technology *per se*, but more about its purpose or its image. Unlike in case of, e.g., UAI, whereby a classic 'open' Wiki such as Wikipedia would have little formal structure and would therefore lead to some tensions in a high-UAI environment, there is nothing inherent in Web 2.0 technologically that would go against a restrained attitude. Knowledge can be gathered via a Wiki on the most serious of subjects; it can be made to look like a strictly business-related activity without any indulgence involved, and this should not be an

issue no matter how restrained the culture is. Conversely, a light-hearted approach to design and content of *any* website or IT system could not be received well despite their non-Web 2.0 nature.

A study similar to (Ribiere, Haddad et al., 2010) would need to be carried out that could highlight any links between IVR and the ratio between the expressive and the instrumental uses of Web 2.0 that could potentially shed some light on this point. In its absence, however, the hypothesis based on this dimension was formulated as:

*H6: In cases where Web 2.0 tools and systems are not strictly business-related and presented as 'serious', there will be a positive relation with IVR.*

#### 4.3. Conclusion

Overall, there are two strongest factors that may inhibit or stimulate the use of Web 2.0 in an organization depending on the cultural context. The first is the degree of how unidirectional the information flow is: the higher the PDI, the more top-down *and* more exclusively vertical it should be, and social media, due to its non-hierarchical nature, implies an opposite dynamic.

The other factor is the collectivism-bound propensity to rely on strong ties, leading to higher propensity to work in small, tightly-knit groups and avoiding wider collaboration. Web 2.0 is by McAfee's view (McAfee, 2009) relying on weak ties, and herein lies potential conflict or synergy.

There are also a number of weaker trends with some evidence in their support, but less so than PDI and IDV. It is suggested that the negative correlation with UAI could be explained by the lower degree of formalisation and structure on Web 2.0 in comparison with traditional systems. The relation with LTO, also negative, could be explained by the dynamism and fluidity of information and knowledge contained on social media as well as its structure. Finally, the positive correlation with IVR could be due to the 'fun' component of social media, but it is proposed that it would depend on the purpose and the image of a given system rather than the technology in question. MAS was the only dimension with no relation predicted.

The verification of all of these would comprise, in accordance with the analytical induction process laid out in the Methodology chapter, of searching for examples of these phenomena taking place.

Once the hypothetical explanations have been developed, the research proceeded to the qualitative stage, beginning with interviews and within-case analysis. These are discussed in the next chapter.

## 5. Qualitative Stage: Within-Case Analysis

As it was outlined in the qualitative methodology section, this chapter contains the case write-ups all structured in the same manner. Each starts from a summary of the background concerning the company, the KM 2.0 initiative, information about the participants and anything else of relevance.

The narrative then proceeds to describing the cultural context, citing examples for cultural dimensions found during the interviews, as well as any evidence for UTAUT constructs playing a role in the Web 2.0 implementation, adoption and use. Hypotheses are discussed and revised if dictated by evidence, and a summary is provided in a matrix format.

The process is repeated sixteen times over; since the research question was focused on comparison of the Russian and the Anglo-Saxon contexts, cases are grouped by their location: Russian, and one Ukrainian cases first, and then the Anglo-Saxon ones. The meaningfulness of the clustering by the nationality is discussed in more detail in the chapter that follows, Chapter 6, Cross-Case Analysis.

## 5.1. Case One: PiggyBank, Russia

### 5.1.1. Background Information

The first case was based on an interview with R1, a Portal Implementation Manager in a company hereinafter referred to as PiggyBank.

The initial contact was made via email allowing for the background information to be gathered; it was followed by an interview via Skype. R1 was previously informed about the purpose of the project as well as the key elements of the theoretical framework, such as Hofstede's dimensions, which was done to allay any potential concerns with regards to confidentiality and the way the results would be used. All communication was conducted in Russian.

PiggyBank was a subsidiary of a well-established large European financial institution with a comparatively long history of operation in Russia, with the head office in Moscow and branches spread across the country. Despite it being effectively a subsidiary of an MNC with fairly strong corporate governance, 70% of the board members were Russian, including the chairman. Being very IT-intensive as could be expected from a modern financial organization, on top of the core business ICT it was actively involved in various kinds of knowledge management activities, predominantly using SharePoint, which included Web2.0 functionality. The list of KM systems included, but was not limited to:

- Corporate sales portal allowing to track clients' history;
- Retail banking task monitoring system – a system similar to the above, also allowing task planning at the inter-departmental level and monitoring their completion;
- Portal for sales and service coordination, designed to facilitate collaboration within a small group of highly specialized employees, the functionality allowing to perform

group activity planning (synchronized parallel calendars) and containing a shared contacts database, small tasks tracker allowing to build up clients' cases, project register, personal tasks descriptors, a request management system and various others;

- Portal for reports cataloguing, reporting being a big part of day-to-day life, and gathering improvement suggestions for them;
- Improvement ideas forum with competitions;
- Training department portal (a training materials library);
- Financial security portal (a channel for anonymous reporting of any *irregularities*);
- Procedures updates information portal.

There were also plans to implement a few more: a planning system (notably, the intention was to use it down to the departmental level, from where the head of department would take over and split it down into individual tasks), a portal with a "*sales follow up*" system with action planning, referrals and so on. The bank had an Intranet site containing a fairly typical set of items such as news, corporate newsletter, some training materials on products and business-related skills, various labor law-related articles and even an "*ideas competition*", however, the site was reputed to be "*useless*".

### **5.1.2. Cultural Context**

The strongest trend was that of high **Power Distance (PDI)** confirming expectations based on Hofstede (Russia scores 93 points). It manifested itself, first of all, in a high degree of reliance on the levels above to drive the implementation processes and little initiative shown by the levels 'below' unless it was clear that the senior management desired certain

actions; moves not seen as fully supported by a level as senior as possible were almost openly resisted; R1 remarked:

*"in general, if it were not for the pressure from the top management, nothing would happen",*

and in more detail, talking about a discussion with a head of department about a new portal:

*"...he didn't want to do anything; he said they just didn't have the resources to implement the system I was on about, and I then said – you know what, it's the corporate who want to crank up the level of control... ...and they wanted you to do it offline, so every move would have a piece of paper filled out, and I am offering you an automated system that would save you all that time. He relaxed after that and took it all on".*

In some cases, like the one above, the allusion to the levels above could be enough. In some others, however, the top-down deployment could lead to a system used by a manager to pass the information down without participation of the 'main audience', i.e., the team it was designated for.

In some cases the matter could be seen as sufficiently important to insist on everyone to be an active part of it; the top management could resort to coercion and the subordinates would duly submit to pressure, giving a very clear example of the high-PDI relationship:

*"I've had it once, the senior guy really took to SharePoint and all departmental heads under him said "yes sir". One of them dared mentioning at a meeting that "some end users on the floor might be not that convinced in the technology", and the response was "But you are convinced, aren't you?" meaning that, well, if you're not, you'll get your butt kicked".*

It appeared that the top-down direction in the information flow manifested itself in two ways: first, the same as in previous examples, portal (i.e., Web2.0) deployment *had to come from above*:

*"As a rule, if the implementation was done "sideways", i.e., horizontally, from another department's level, it wouldn't work. I've had it once, when we were trying to put something in place, and the receiving department, although generally happy with the technical side of things, started complaining about whether a "mere senior specialist should be leading a portal implementation" – they thought it would be more appropriate for the whole thing to be led by the top-level corporate IT, not a mid-level person".*

There was evidence for some resistance from the lower levels towards letting the flow in the opposite (bottom-up) direction happen. In case of PiggyBank's retail task monitoring system, which was supposed to be a piece of groupware, nine users out of ten – all mid-level managers – were privately expressing serious concerns about too much transparency and the ability of the more senior managers to know exactly what was going on and to track their task completion rates. The tenth user, the only happy one, *was* that more senior manager. In another similar case,

*"...a head of department tried putting a task distribution thing on a portal, and nearly ended up with a riot on her hands. The problem was that if a task is assigned via emails, you can let it "mature" for a while and see if it's still relevant after a while and so on, you know, you can plan things in your own way; however, if it's up on a portal, the boss can see it. Interestingly enough, it didn't improve productivity, people just kept on doing what they were doing anyway, but everybody was really cheesed off".*

Furthermore, there were a few instances where the workforce was treated in accordance with a 'theory X'-style view (McGregor, 1960) that the workforce, given freedom, would abuse it and try to make their results and/or the amount of work they put in look as good as possible. Similarly, there was a certain level of distrust going the other way, in the sense that the workforce were trying to avoid too much visibility in the eyes of their superiors since it was perceived as giving them too much control.

*"...we were suggesting a piece of best practice from elsewhere whereby retail clerks would keep live records of their interactions with customers – what transactions done, what forms used and so on, to improve the system usability, but the manager refused. He said, since it's a new thing and there's no history to compare with, they will be all making numbers up to in order to look better".*

The 'knowledge is power' attitude was coming across quite strongly, and knowledge was seen as a valuable asset one could use to leverage one's political standing. Holding unique knowledge was perceived as something enhancing one's position in the company as a valuable expert. There were no signs of the bank trying to neutralise this trend, and on one occasion the boss was instructing a more junior colleague on why it is important to keep it that way:

*"It's like when somebody from a different department came to me to learn about how to work with SharePoint, but you know what, my job is not about how many portals someone else is putting in place across the bank. It's the opposite – if someone else can do it, that'll have an impact on my uniqueness as an expert";*

and

*"As my boss once said to me: "your value as an employee is measured by how much unique information you hold. How else would you justify a high salary? This way, if*

*someone needs a report only I can run, and I am on holiday, they'll see how important I am";*

and sometimes even stopping processes that could in principle happen, but could be seen as undermining their expert power:

*"...here's the thing: there's a lot of politics, and the IT wouldn't allow the business end to do things like that [implementing KM systems "sideways", from one department to another without involving the higher-level IT – PB] because they would feel threatened – you know, justifying their purpose, i.e., if the business departments can do it, why have IT around".*

The latter example highlights a point Hofstede was making about the role of a teacher (guru, expert and so on – anyone in possession of unique knowledge) and its relation to PDI. The knowledge can, too, form a basis for inequality – the 'above-below' distinction can be made based not only on hierarchical power, formalized or otherwise, but also on knowledge.

It might have a reflection on the Web2.0 use from its participatory nature point of view: theoretically, in a high-PDI setting it would be expected that the knowledge is passed down not necessarily only from a figure endowed with hierarchical power, but probably just as well from an intellectual leader regardless of their position – in principle, they could be the same people, but they do not have to. It would mean that in a hierarchically homogeneous group with high PDI where no one can be seen as a 'better' expert than anyone else, 2.0 systems would not be accepted too readily.

An example of it can be seen in PiggyBank's portal for sales and service coordination designed to facilitate collaboration of five experts in their fields, the manager being just one of them and having only superficial knowledge of the others' areas. After very enthusiastic

initial acceptance and panegyrical feedback about its usefulness and functionality, it gradually yet quickly fell out of use.

The other dimension coming across rather strongly was **collectivism** (Russia's IDV score is a below-average 39 points, making it quite collectivist), manifesting itself in a high level of distrust between groups of people unless they were working together on a day-to-day basis, and a low propensity for out-group knowledge sharing using 2.0 portals:

*"The politics plays the most important role at the inter-departmental level. Like, the head of retail banking granted access to their portal to [the head of] the micro-business department, but asked for their contact database access in return – quid pro quo. In general, some departments may simply refuse to use the same portal or to share database access, like the corporate banking refused to share theirs with the retail guys who could use corporate clients as a retail sales channel",*

and

*"...there's no trust between groups of colleagues; for example, we are sending out some database reports – there are 35 branches, and all of them get a separate section with their own customer data only, which is a big pain in the backside to generate, but when I asked why, they said that's because if "they", other branches, that is, get access to others' customer data, they'll go poaching. They sounded so sure as though there have been precedents, although I am not aware of any";*

However, R1, although noticeably unhappy with the predicament, was accepting it as a norm:

*"But their customers are their bread and butter, so that's understandable".*

As a consequence, knowledge was shared only if there was a benefit to the host group and sometimes not shared at all despite a clear business case from the overall company's point of view.

There were no strong signs of **Masculinity or Femininity** (Russia's MAS score is 36 – quite low, i.e., feminine). Even though the aforementioned expert reputation was mentioned a few times, it was closer to concerns related to job security - 'if someone else can do it, how am I not redundant?' - rather than trying to assert one's superiority. At the same time, there was no evidence at all for any feminine trends such as striving for good relations, instilling fairness and so on.

The mistrust towards non-group members and concerns towards job security can also be interpreted as high **Uncertainty Avoidance** (Russia's UAI is 90 points). It is worth pointing out that the system, reliant on wide participation and sharing one's expert knowledge, would threaten both.

Russia resides in mid-scale in terms of **Long-term Orientation** (LTO), and there were no signs either way, which is the picture to be expected. Short-term orientation would manifest itself in people trying to reap immediate benefits, or similar behaviour, whereas a longer-term attitude would show as them putting more effort in without an immediate payback, but hoping to get better returns in the future. The long/short term split was completely absent from the evidence.

Finally, as far as **Indulgence vs. Restraint** is concerned, the bank came across as a strict business-like enterprise without much space for any frivolity, which is in line with Russia's very restrained 20 IVR points, but is also possibly characteristic of banks as a whole. The Web 2.0 systems were also used in a strictly business-related way with no social element in it. The only instance of something resembling 'fun' was the ideas competition, which, quite indicatively, was reputed to be 'totally useless'.

Overall, the culture in PiggyBank could be described as high in power distance and collectivism, possibly uncertainty avoidant, neutral MAS- and LTO-wise, and restrained.

### **5.1.3. UTAUT Constructs**

As it was mentioned in the Methodology chapter, UTAUT is a theory that lists a number of factors that have been shown to influence people's decision as to whether they would use a piece of technology or not.

In this case there was evidence related to three factors out of seven: there was strong reliance on **Social Pressure**, especially in a top-down direction. There was also a degree of apprehension (**Anxiety** in UTAUT terms) from the lack of trust between groups' point of view. **Performance Expectancy** (how useful the system is believed, or expected, to be) was, on a number of occasions, overshadowed by political considerations (i.e., even when business benefit was to be had, political pressure prevailed).

### **5.1.4. Assessment of the Hypotheses**

There was evidence in support of H1 – the top-down information flow existing and impeding on the adoption and use of the system. H2 – the preference for stronger ties and unwillingness to go beyond one's immediate group – was supported, as was H3, the UAI-related one, in the sense that the system was putting one's job security and professional standing at risk. The H4, MAS-related one, suggesting that there would be no link, was supported too. There were no instances of H5. H6 had one example (the competition), which was not particularly strong.

### 5.1.5. Case Summary

The key findings from the case that will be used in the cross-case analysis in Chapter 5, are presented in Table 11.

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Quite high, in accordance with Hofstede (H.).	Collectivist (low IDV), in accordance with H.	Some evidence for possible uncertainty avoidance.	Non-masculine, in accordance with H. No feminine tendencies.	No evidence either way.	Restrained (agreeing with H.)	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
Secondary to the SI: the pragmatic value is undervalued in comparison to the boss's opinion.	Absent.	Very important, especially the boss-to-subordinate relationship. Politics is a key factor.	Absent.	Absent.	Absent.	Some present, linked to low level of out-group trust.
Hypotheses Testing						
H1	Supported. In a high-PDI environment, SharePoint was implemented and used in a top-down way, with little to none bottom-up or sideways knowledge exchange happening. As a consequence, SP was used only as and when the senior managers wanted it to. No grassroots initiative or active knowledge sharing on SP between peers evident.					
H2	Supported. There was evidence showing that the propensity to out-group sharing was low due to low level of trust. The successful use of SharePoint was implying an evidently uncomfortable level of cross-boundary collaboration.					
H3	Supported. The system was forcing people into working with non-group members as well as sharing one's expert knowledge, thus threatening one's professional standing and job security.					
H4	Supported. There was no evidence of a link between MAS and SharePoint.					
H5	No evidence either way.					
H6	Weakly supported: the only 'fun' component on the system was not received very well.					

Table 11: Case Summary (PiggyBank, Russia)

## 5.2. Case Two: SoftCorp, Russia

### 5.2.1. Background Information

The second case study was conducted shortly afterwards following the same overall structure and methodology: a semi-structured one-hour interview via Skype with questions designed in a way allowing to gather in-depth data not only about the Web 2.0 implementation process per se, but also concerning the behavioural side of it, i.e., how such things as group dynamics, intra-organizational networks and hierarchical relationships played a role in the technology adoption.

The respondent, R2, was a marketing director in a Russian software development company, SoftCorp. The company was similar to PiggyBank in several respects: roughly the same size and age (four hundred employees and twenty years in business, respectively), Russia-based, but geographically disperse operations and high knowledge- and ICT-intensity due to the nature of the business. This also meant that similarly to the bank, IT systems implementation and technological change was something the company did routinely as part of their day-to-day activities.

About three years before the interview it was decided to start using SharePoint specifically to facilitate knowledge sharing and collaboration. At the beginning, the idea was heavily promoted by the CEO and took off well, however, it quickly died out and the only two departments still using it at the time of the interview were the accounting (mostly to track working time allocation for payroll purposes) and the PR team, for electronically communicating anything that went into print.

### 5.2.2. Cultural Context

Three dimensions had shown presence rather strongly: **PDI**, **collectivism** and **UAI**, all in line with Hofstede's numbers. **MAS**, **LTO** and **IVR** were absent.

**PDI** manifested itself in the CEO's strongly autocratic style and some instances of other managers being rather directive in their approach, as well as in a high degree of reliance in their actions on the upper echelons' approval and a clear lack of autonomy in decision making.

The CEO was the person upon whom a lot depended as far as the amount of effort going into new initiatives was concerned, and practiced a controlling management style, "*from time to time taking over managing various departments*". Furthermore, although the official policy was – literally – not to fire anybody, it was quite common for managers to fall out with the CEO, which led to the person being almost overtly boycotted and gradually forced to leave. One consequence was that the turnover in middle- and top-management was quite high, and the younger generation managers often lasted for less than two years before moving on. On one occasion, a head of department had not spoken to the CEO "*for ten years*": effectively having a tenure, the person turned out to be ready to put up with the boycott and chose to go on playing by the rules, seemingly enjoying the job regardless of the strained relationship with the boss. The key point is that the hierarchical power meant a lot in SoftCorp, and it was often exercised in a *tour de force* fashion.

The attitude towards such initiatives as KM could be best described as 'can't someone else do it?'. KM "*sounded like a good idea in general*", but unless the CEO wanted it or it was seen as something absolutely necessary for running the business – and KM wasn't – there was little willingness seen in mid-management to dedicate time and manpower to it:

*"Everybody's view is that it's a nice to have; it sounds great, but it also looks like a fair bit of effort, so couldn't somebody else take care of it?"*

The initial sponsorship of the SharePoint implementation by the CEO quickly faded away; R2 described him as *"a man who loves his toys, but unfortunately only lasts for three or four months"*, and since the pressure was off, the process halted.

The top-down hierarchical mentality sometimes even formally expressed in rules and procedures, was quite strong. When asked about the inter-departmental collaboration – a question aimed primarily at getting more insight into the in/out-of group dynamics - R2 brought up an issue related more to the top-down information flow, as opposed to a more 'horizontal' exchange within layers:

*"You know, if you want to run a project involving different departments, which we often have to do, you can't just arrange for a kick-off meeting with them, you need to get your boss involved and get theirs to do the same; even if they decide not to attend, you still need to get their endorsement and keep them informed".*

This is an example of high PDI in action: the collaboration idea needed to be seen coming from higher up, and furthermore, it illustrated the management's unwillingness to allow the 'troops' to collaborate freely beyond the departmental boundaries.

In some cases the verticality of knowledge and information flow could be even more evident. Looking for examples of the upwards-downwards exchange, R2 was asked how much involvement the specialists had in running the company, i.e., generating and sharing improvement ideas and so on, and R2 responded rather strongly:

*"None at all. There is no democracy whatsoever and they are expected to do what they are told. Of course, you can have an idea and approach the top management with it officially, or to make a complaint if you want, and there is supposed to be a*

*formal procedure for that, but in reality, those who do, are pushed out of the job very quickly. In general, going above your manager's head is a big no-no, it's practically unthinkable".*

Examples of **collectivist** behaviour were of two kinds. The first one was the split between the old and the new generations in the company by the length of service, which is also a sign of high **UAI** (as a Russian saying goes, 'an old friend is better than two new ones').

It turned out that the knowledge sharing 'silos' formed not only around departments; there was also a divide between a comparatively small group of employees with about fifteen years of service who strongly felt that their expert positions could be threatened if they openly shared what they knew, and the 'newbies', i.e., people with two or three years of working in the company. The 'old guard' had a shared group identity, which could be traced back to the relatively high turnover in SoftCorp which meant that they *"went through a lot together, and preferred watching each other's backs"*.

As an unexpected consequence of the above that is very illustrative, it became evident that the push for knowledge sharing via SharePoint brought out the clique-based 'knowledge hoarding' mentality:

*"They realized how powerful knowledge can be and started being much more careful about it. As an example, we needed some product data from about five years ago and couldn't find it, so open requests were made on SharePoint discussion boards. One lady had it stashed away locally on her PC, and instead of releasing it, she tried to find out through her personal network in the company what the data was needed for and how she could use it for her benefit, what she could get out of it".*

The tension between the older and the younger strata and the unwillingness of the former to share the knowledge eventually led to the all-out sabotage of the whole initiative.

The second collectivist sign, supported by a number of individual examples, were the departmental silos and a low propensity to share information and/or collaborate with less familiar people from other departments.

R2 described her first experience in trying to share something within the company:

*"Going back a few years, when I was new in the role, I prepared and published internally a report about the marketing department – you know, graphs and stuff – showing what we did and how we did it, but I got knocked on the head by my boss straight away; he said, what the hell are you doing sharing information like that with everybody, they'll want to jump on the bandwagon and get a big freebie".*

R2 also said that

*"It's virtually impossible to get any info from a different department, which is really frustrating, and you're often aren't even aware about who knows what and who to ask",*

and

*"you cannot just get the information out of somebody you don't know. You gotta go and see them in person first, and you'd better bring a box of chocolates with you";*

overall, it was said that

*"Knowledge within the company is not for the whole company's use and benefit",*

echoing R1's view that knowledge was used largely as a source of power nobody is willing to let go of.

### **5.2.3. UTAUT Constructs**

Similarly to PiggyBank, the Performance Expectancy (how useful the system is seen to be) was overpowered by the political considerations and the CEO's view: regardless of the potential benefits, everything stopped as soon as the CEO "*has had enough playing*". Unlike PiggyBank, however, the Effort Expectancy (how much effort it might require to start using it) was present in the sense that too much of it was expected to be necessary, which had a negative impact on the attitude towards SharePoint. The reliance on the pressure from above is an example of Social Influence in UTAUT terms. The unwillingness to collaborate shown by the old-timers and the newcomers is a manifestation of Anxiety and as a consequence, a more negative Attitude Towards the Use of Technology (ATUT). There were no indications for the relevance of other UTAUT constructs.

### **5.2.4. Assessment of the Hypotheses**

H1 (top-down information flow) was supported. The other PDI-related behaviour - reliance on higher levels in the hierarchy for directions – was a generic element, useful in terms of characterising the culture, but not specific to the system in question.

H2 was supported too, and the unwillingness to use the portal to share knowledge with unfamiliar people with whom the ties were not strong enough was one of the most prominent themes in the interview.

MAS in its absence was supporting H4.

No evidence was found for H3, H5 and H6, in the sense that LTO and IVR did not show strong influence on the behaviour in the organization, and UAI could only be identified in some instances related to collectivism and the old/new employees split.

### 5.2.5. Case Summary

Overall, the picture was consistent with PiggyBank and the expectations for behaviour based on Hofstede's numbers, at least where evidence related to particular dimensions was found (Table 12).

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Quite high, in accordance with H.	Collectivist (low IDV), in accordance with H.	Some evidence for possible uncertainty avoidance.	Non-masculine, in accordance with H. No feminine tendencies.	No evidence either way.	No evidence either way.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
Secondary to the SI: the pragmatic value is undervalued in comparison to the boss's opinion.	The system was seen as requiring too much effort, low enthusiasm	Very important, especially the boss-to-subordinate relationship. Politics is a key factor.	Absent.	Negative in relation to the particular system (seen as threatening the status quo)	Absent.	Some present, linked to low level of out-group trust.
Hypotheses Testing						
H1	Supported. The top-down direction is represented very strongly and sometimes proceduralized.					
H2	Supported. Low level of trust between groups. Widespread view that the group's knowledge is for the group's benefit, rather than of the whole organization, even if there is some business justification to share it.					
H3	Supported, although weakly: the old-timers/newbies split can be interpreted as an instance of the system giving raise to some uncertainty-avoidance concerns.					
H4	Supported. There was no evidence of a link between MAS and SharePoint.					
H5	No evidence either way.					
H6	No evidence either way.					

Table 12: Case Summary (SoftCorp, Russia)

### 5.3. Case Three: The Management School, Russia

#### 5.3.1. Background Information

This case was different from the first two, and not only because this time the respondent (R3, an assistant professor) was quite happy to go public with their experiences, but perhaps more importantly, because the organization was successful in utilizing Web 2.0 for their internal purposes. On top of that, there were some notable differences in organizational respects that warrant some explanation.

The Management School was a well-established part of a bigger publicly-owned university based in St. Petersburg with a standard portfolio of business and management education both at the under- and post-graduate levels. Demographically, the primary audience of their Web 2.0 system (BlackBoard, broadly similar to Lancaster's Moodle) was largely young Russian adults of between 17 and 22 years of age, the vast majority from middle to upper-middle class background, about fifty per cent from St. Petersburg and the rest from the 'regions'. Although BlackBoard was available for staff use as well, it was mostly confined to student circles, and it was actively used for communication and collaborating on group projects.

The biggest difference organizationally was that Management School was a not-for-profit establishment with little hierarchy evident in the user audience, since most of them were of equal status with the level above represented only by their tutor, who had virtually no formal hierarchical authority over them.

As a result, the system was used in a specific cultural micro-climate quite different from the typically Russian one as described by Hofstede and from what was seen in the first two cases. At the same time, there were still some similarities, albeit quite subtle.

### 5.3.2. Cultural Context

The case represented a mixture of high and low PDI dynamics taking place in different sub-groups in the same organization. The primary audience of the system in question, a Virtual Learning Environment (VLE), were a demographically homogeneous student cohort without hierarchical levels, and there was active collaboration between students going on both on BlackBoard and the 'external' social networking sites such as Vkontakte.ru and Facebook. The social media was well-established as a useful tool, and from the School's point of view it was a question of which one was to be used – the VLE or others – rather than whether social media was to be used at all.

It was, however, driven by the top management (the role of the top tier again) in an authoritative fashion (high power distance approach). R3 described the situation as:

*"the student participation and bottom-up information flows are very heavily promoted by the higher echelons in the university, which, believe it or not, is combined with a rather authoritarian management style – in other words, the staff are under pressure from above to stimulate all that",*

pointing out that

*"the initiative from below stimulated from above, which is perhaps a good thing, because in an inert and paternalistic environment people need to be given orders to be more independent and show more initiative",*

also noting that

*"all the liberalism is not that relevant for the staff – I guess getting feedback from below is much more important in a commercial environment whereby there's a push for results and real money is at stake, whereas in a university with government*

*funding and where the reputation is your only capital, there's much more scope and space for political games".*

Thus, although the cohort was homogeneous with low level of PDI-related behaviour, there were multiple indicators that the University's management was not that liberal at all, and the School was run in a much more authoritative way (high PDI).

There were some signs of **collectivist** behaviour, namely a propensity to stay in groups formed during the first year throughout the course, and low willingness to openly share the details of their work on the VLE out of fear or plagiarism (an indicator of mistrust), but still taking part in more general discussions online.

It is noteworthy that despite the external social networks being used, and students being comfortable with it, the School was taking conscious efforts to bring it 'in-house'. This did not seem to serve the purpose of stimulating the sharing or collaboration; after all, students already had a platform to do it online. The VLE was not offered to bridge the gap, but rather, it was a replacement for something already working well. It seemed like the School was trying to establish a stronger feeling of control over systems, without, however, articulating it openly. It is in line with high **UAI**.

There were no particular examples of **MAS**, **LTO** or **IVR**.

### **5.3.3. UTAUT Constructs**

Out of UTAUT constructs, Performance Expectancy (pragmatism) was present in the sense that students used social networks voluntarily because it made their groupwork easier. The observed shift from external networks into using the VLE was directly attributed to the pressure from above. No other links were evident.

#### 5.3.4. Assessment of the Hypotheses

The question of whether the hypotheses were supported or not brings up a dilemma, and the first case of the hypotheses and/or phenomenon requiring some re-thinking, as per the process of analytical induction.

The Management School was a Russian organization, and by Hofstede's scores, high PDI should be present. As a consequence, should H1 hold, there should be no sideways sharing of information, which, as it has been shown, was not the case. There was, however, little space for high PDI to take hold within the student audience, and their particular cultural microclimate was lacking any power-distant dynamic: there were no levels in it distinct enough for the inequality to be present. Furthermore, this example complements the previous two cases well: in them, observed high PDI led to top-down knowledge flow and in some instances was slowing down the use of interactive KM. In the third case the observed PDI was low, and there was much more sideways knowledge sharing and collaboration.

The question, therefore, lies not in whether high PDI leads to top-down, and low PDI, to sideways flows, but rather whether the local cultural microclimate conforms with Hofstede's scores for Russia. In this sense, the phenomenon under study can be narrowed down (limited in its universality) to the observed behaviour. H1, and all others, therefore, would shift in their meaning to say that the hypothesized link between the dimensions and knowledge management is related to what is actually *evident in the particular organization*, regardless of whether it is or is not in line with the dimensional scores for the host country.

From this point of view, H1 was supported: low-PDI behaviour was associated with sideways sharing. This, given that the social media was used quite widely – reportedly,

*“virtually everyone”* used it, could be tentatively assumed to be a positive influencing factor. This type of behaviour, however, is out of sync with the supposed national trend.

H2, the collectivism vs. strong ties one, was supported as well, albeit more weakly than in the previous cases: no conflicts arose, and it took a milder form of preferring well-known groups to mixing them up all the time.

H3, UAI vs. lack of structure and control inherent in social media, was supported to a degree: although the School’s management did not shun the social media in its entirety and did not insist on using more traditional methods of managing groupwork instead of it, however, they were trying to bring it under the School’s control. Therefore, it influenced the choice of a particular Web 2.0 system rather than the choice of a paradigm (a more traditional VLE vs. a Web 2.0 one).

H4 was supported by the lack of any MAS-related trends.

There was no evidence in support of H5 or H6.

### **5.3.5. Case Summary**

The was chronologically the first with observed behaviour notably different from what could be expected in a Russian case based on Hofstede. Although it could be explained by the demographic and organizational homogeneity of the group – a student cohort – it meant that the link between Hofstede’s scores and the hypotheses was not directly evident. A low-PDI dynamic could be observed in it; treated as a low-PDI case, the outcomes could be explained by H1 well, but it would disagree with any predictions that could be made based on the national scores.

In accordance with the analytical induction process, the hypotheses had to be adjusted: instead of relating to the national figures for cultural dimensions, it was suggested that they should rather refer to observed behaviours. In this way, they would be able to explain this case, as well as two previous ones. The summary of the findings is presented in Table 13.

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Low among the student cohort (against H.), high in anything related to the management.	Some weak signs of collectivism (agreeing with H.).	Some evidence for possible uncertainty avoidance.	No evidence either way.	No evidence either way.	No evidence either way.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
Web 2.0 used voluntarily because it makes the groupwork more easy.	Absent.	The pressure from above determining the choice of the system.	Absent.	Absent.	Absent.	Absent.
Hypotheses Testing						
H1	Adjusted to reflect the observed behavior rather than referring to the national score. Supported in the adjusted form. Low-PDI dynamic was accompanied by a widespread sideways knowledge sharing.					
H2	Weakly supported: there was some preference towards working in established groups.					
H3	Weakly supported: external social networks being beyond the management's control, they chose to promote the interval VLE. Although they did not choose to abandon Web 2.0 entirely, they chose an option offering more control.					
H4	Supported. There was no evidence of a link between MAS and VLE					
H5	No evidence either way.					
H6	No evidence either way.					

Table 13: Case Summary (The Business School, Russia)

## 5.4. Case Four: MobiCorp, Russia

### 5.4.1. Background Information

The fourth case came from a mobile phone content developer and retailer based in St. Petersburg, MobiCorp, at the time of the interview (November 2011) the third largest player in their sector in Russia. Their core business was creating apps for mobile phones, tablets and other portable devices; some of the most recent launches were, for example, an audio-augmented instant messenger and a mobile phone-based instant payment system.

The company was founded in 2001 by three schoolmates who were at the time twenty-four years old, all with postgraduate degrees in economics, and one holding a PhD. The company's demographic profile was quite young: the average age was 28 years and most were not older than 36, including the directors. The culture was described by the interviewee as "*similar to that of Google, which was a deliberate effort*" – it was said that the managers succeed in keeping the atmosphere the same as what it had been when it was a postgraduate startup. The structure was very flat, and one's remuneration did not depend on the formal title: a project leader could earn less than a developer reporting to them; creative positions and tasks were paid better than the purely managerial ones. The procedures were quite informal with a lot of decision-making power devolved to the lower levels - for instance, one didn't need an approval to start working on a new product. Everyone was on first names' terms, untypically for Russia, and it was not uncommon for the directors and the CEO to come to work wearing T-shirts and flip-flops.

The first thing the interviewee, R4, the marketing manager, pointed out were the market conditions they were operating in:

*"The first and the most important thing you need to understand about what we do and the thing that determines the way we do it is that our products' lifespan is extremely short – about three months, in most cases. That's how long an app lives. You have to keep the project pipeline full all the time, you can't afford any gaps or delays. Can you remember Angry Birds? [a popular simple game for computers and mobiles on all platforms released in 2010 by Rovio Entertainment – PB] When was the last time you've played it?"*

R4 explained that because of the short product lifecycle the need for agility was quite extreme. In recognition of that, the company was run quite informally:

*"It is, quite frankly, organized chaos, and deliberately so. We just can't afford lengthy approval processes and all that. If you have an idea, you go on working on it, otherwise someone else will do it. If it doesn't sell, that's OK. You might think it's a risky strategy, but we're not doing too badly, so it must be working".*

It was also pointed out:

*"Now, the downside is that the right hand doesn't know what the left one is doing, and there's an awful lot of redundancy in the system that we know about. I bet at any moment in time there are two or three products of exactly the same kind being developed by different people. By no means we are a lean business, but the need for agility makes us put up with it. Besides, it's not such a bad thing, anyway. The company's culture is more about freedom and creativity than it is about making money, although as I said, we're doing well as a business."*

The situation, although said not to be a problem directly, was known in the company and had been discussed by the management. Being happy with the state of affairs but believing that more active communication and knowledge sharing would make things even better,

the company launched a series of company-wide seminars similar to IBM's 'innovation jams' whereby the staff met all together informally two or three times a year off-site and discussed their current work and ideas, took part in brainstorming workshops and so on. Although the direct effect of those jams was impossible to quantify, the interviewee stated that they were quite popular and were likely to continue in the future.

#### **5.4.2. Cultural Context**

This case took the deviation from Hofstede's picture of a typically Russian behaviour even further. There were multiple examples of very low PDI (the devolvement of the decision-making power, higher wages associated with the creative jobs, informality); high IDV (extreme dynamism of their structure, no established groups at all); extremely low UAI (the 'organized chaos'), short-term orientation and a high degree of indulgence.

#### **5.4.3. UTAUT Constructs**

Performance expectancy came across rather strongly: the tools were said to be chosen based on their pragmatic value rather than political motives.

*"It's just not the way we do things – you know, someone at the top decides to follow a fad and to use a new system. No, we are extremely pragmatic in this sense – developers use what they need to use, and it's up to them. Groupware is important for the core process, and the knowledge part of the bug tracker is very handy – the tracker is a good tool of the job, and there's a cherry on the top, a facility to gather people's experience, thoughts and ideas during the development process. But that's project-specific, and for the more generic stuff there's a Wiki. Both are used because*

*it's recognized that we'd all benefit from sharing more and being more clear about who's doing what. But we don't even call it knowledge management – it's just something we do as part of the day job."*

This could be a sign of a yet another way PDI influences the adoption process, complimenting rather than contradicting H1; examples of the opposite could be seen in PiggyBank and SoftCorp, where the pragmatic value could be forsaken for political reasons in high-PDI environment.

In a noticeable difference from most other Russian cases, the interviewee didn't mention anything related to the politics of organizational knowledge, e.g., 'knowledge is power' syndrome or the silo effect. Overall, the use of interactive systems for knowledge exchange was being carried out as-a-matter-of-factly, without being identified as a separate activity and without any incentives, promotions, engagement efforts and so on, driven by the perceived need to communicate more, caused, in turn, by the agility-related complexity and information redundancy. In this respect, a close match between their organizational practices and culture on one side, and the interactive KM on the other, could be observed.

Some Effort Expectancy concerns were mentioned in relation to SharePoint that was abandoned because it required too much effort to make it fit for purpose. When asked whether the organization experienced any difficulties with user adoption, i.e., getting people to use the systems and to take part in knowledge exchange online, R4 didn't understand the question. It was clarified to the interviewee that in some cases users don't want to use KM systems for whatever reasons. The response was:

*"The short answer is no, we don't have any problems. Or we don't see them as problems? I don't know. Take SharePoint – we've tried using it as a communication platform to help people talk with a wider audience, but it's such an off-the-shelf solution and is so inflexible that we just couldn't customise it to our needs, so it got*

*abandoned. In this sense, we did have a difficulty, and the users didn't engage, but quite frankly, the problem was with the system, not the users"*

ATUT (attitude towards the technology, i.e., whether users think it's a good idea) was present and influenced positively by the pragmatic value and how social media complimented the idea of the 'organized chaos'.

#### **5.4.4. Assessment of the Hypotheses**

H1 was supported in its revised form: MobiCorp was a very clearly low-PDI environment despite being an entirely Russian company, and there was a lot of sideways knowledge movement as predicted for low PDI.

H2, similarly, was supported for an individualist culture: e.g., innovation jams, with all their popularity, were designed to put people into groups with the new people in order to stimulate creativity and encourage knowledge sharing, and similar type of activities carried on using Web 2.0 tools.

H3 was strongly supported in the sense that the dynamic nature of social media was seen to fit the dynamic culture of the company very well, and was therefore perceived quite positively.

Although MobiCorp's culture had some hallmarks of low MAS, there were no indications whether this had any impact on the use of Web 2.0, such as Web 2.0 identified as something particularly stimulating for good relationships, or promoting openness, equality and fairness, thus no evidence for or against H4 was found.

H5 was supported: the company's culture was very short-term oriented, and the fluidity of Web 2.0 evidently fitted it well.

H6 did not have enough evidence for or against it: although a CEO wearing flip-flops to work is a symptom of an indulgent culture, no references to the 'fun' side of Web 2.0 were made.

#### **5.4.5. Case Summary**

Overall, this case supported the conclusions arrived at in relation to the Management School: the hypotheses held provided that we took into account the observed behaviours and what crude levels of the cultural dimensions they fitted, rather than what would be predicted by the scores.

The summary of the findings is presented in Table 14.

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Very low: flat informal structure, devolved decision-making.	Individualist. Established groups are not widely used.	Very low.	Some evidence for low MAS.	Extremely short-term.	Indulgent.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
Quite strong, pragmatic.	'Fitness for Purpose': effort vs. practical benefits.	Absent.	Absent.	Positive: Web 2.0 fitted them well.	Absent.	Absent.
Hypotheses Testing						
H1	Supported: low-PDI context and very active sideways knowledge sharing.					
H2	Supported: individualist environment, deliberate use of weak ties.					
H3	Supported: low-UAI context, active use of unstructured systems.					
H4	No evidence either way.					
H5	Supported: the dynamism of social media matches the short-term culture of the company.					
H6	No evidence either way.					

Table 14: Case Summary (MobiCorp, Russia)

## 5.5. Case Five: NaviSoft, Russia

### 5.5.1. Background Information

NaviSoft was a St. Petersburg-based global supplier of maritime and aviation IT solutions including navigation, security, training and simulation, radio-controlled unmanned operations and similar applications. Development, programming and support (the former was referred to as 'production') were done in-house; all physical manufacturing was contracted out.

The interviewee, R5, was a project manager in the Navigation division, which formed a significant part of the St. Petersburg branch – about 300 employees out of 600.

The organization was quite flat, and there were only four tiers: director, deputies, heads of departments and specialists. The production was the biggest department (ca. 200 people); the rest, such as HR, legal, finance and so on, were significantly smaller. The company was rather successful, occupying up to 40% of the *global* sector and supplying products primarily for 'the West'. Demographically, the age was 'average' – low thirties, all with Russian higher education (Master's) and about 70 with PhDs.

This case differed from all previous ones. NaviSoft was an IT-intensive organization and they employed a sophisticated IT architecture comprised of SharePoint, Navision Axapta (ERP), heavily customised Jira Atlassian and a variety of discussion boards. In this respect, they operated at the same level of ICT as SoftCorp and MobiCorp, however, for them, the adoption was driven not by the CEO's wish and not by a perceived need to capture and share the knowledge, but rather by the requirements of a strict PRINCE-like project management procedural environment including KM elements, applied at the same time with a great deal of discretion and freedom.

At the most immediate level, when a project was being closed, it was the project leader's responsibility to ensure that 'project learnings' were recorded. The official reasons for that were to provide continuity between projects and to ensure knowledge retainment as well as to make backward compatibility easier. Although it was a system requirement that was controlled by the Quality Assurance Department and not entering *anything* at all would not be possible, the final decision about the acceptability of the information entered belonged with the project leader. The actual process of entering the learnings into the system could be done by any of the team members.

Since recording the learnings was part of the a project management procedure, there was a material incentive associated with it; a project could not be considered officially completed unless it was done, and there was a bonus for the project team for the on-time completion.

When a new project was initiated, the learnings were used not only as a source of information, but also as knowledge 'yellow pages', i.e., a directory of who knows what. It was also relevant to the company's overseas representatives who could encounter a problem and might be in need of getting in touch with a relevant expert quickly, without having the time for sending out indirect inquiries. The respondent, R5, also mentioned problems with globally dispersed knowledge and said that 'yellow pages' functionality really helped.

Another interactive KM tool used by the company were the discussion boards and 'wish lists' used for user requirement specification development. The overseas sales representatives fed the initial information into it, which was then discussed with the technical experts electronically – what could be done and what couldn't, and then it was all formalized and approved by the head of department; a project was then initiated.

### 5.5.2. Cultural Context

Despite being based in Russia, this case exhibited some **low-PDI** traits: flat structure, low degree of top management's involvement in the day-to-day processes, and a certain degree of criticality towards the management's decisions as well as an *a priori* resistance to something that was seen as imposed on the workforce.

R5 admitted that the motivation to use the system was partly material. It was, however, also highlighted that some initiatives suggested by the management could be rejected at first, but with some managerial push for people to actually start using them, the system's usefulness would become more clear, and adoption would go up. The interviewee said about the project management database:

*"You know, at first, despite even the bonus, the whole project management procedure was not received very well. Or maybe it was partly because of the bonus, too – people saw this as a way they could be deprived of some money. You know, not as a carrot, but rather a stick that someone can take your carrot away with. In any case, it wasn't directed at the KM part, or anything in particular; it was just a push against something they saw imposed on them. But after a while it became evident that good record keeping makes lives massively easier, so it's done as part of the job now".*

In this respect the case stands out from the rest because the use of KM 2.0 was driven by a project management routine. It was recognized as important, but not considered central to it, thus the implementation focus was on the procedure as a whole, and whatever initial resistance was there, it wasn't directed at KM. In a way, the success of interactive KM was a positive side effect of the PM procedure implementation. The behavioural considerations, although present, were not exaggerated – R5 said that

*"We know that we probably ought to talk to each other more, but there is no resistance as such. People are busy, I'm sure you know, and there's got to be a really good reason for them to dedicate any of their time to that. But the HR and PR people are quite helpful, and they are promoting it a lot, so it's picking up".*

Some **individualist** behaviours were observed, too: a comparatively high level of comfort in collaboration between departments (production/QA/HR/marketing), the active use of material incentives in the project management process and low level of resistance towards wider knowledge sharing, e.g., at the division-wide seminars, in parallel with MobiCorp.

As far as inter-departmental sharing was concerned, R5 said there weren't many issues:

*"Nowadays, especially over the last two years or so, the HR are really pushing for it. Well, not just HR, but also PR and marketing people, so they've established a system of regular inter-departmental seminars just to be aware of who's working on what".*

First of all, a parallel with MobiCorp can be seen here; it is also an indication of a more open atmosphere than in PiggyBank and SoftCorp.

At the same time, R5 pointed out that in the Avionics division the picture did not appear to be the same, and they seemed to have problems talking to one another. The respondent couldn't provide any more detail, but pointed out that their HR dpt. wasn't anywhere near as big and active as the one in Navigation.

There were no clear signs of **UAI**-, **MAS**-, **LTO**- or **IVR**-related behaviour.

### **5.5.3. UTAUT Constructs**

**Performance Expectancy** was mentioned a multitude of times in relation to the pragmatic value of the system. The link between PDI and how much importance was given to the

systems' usefulness was an emergent theme throughout the five cases so far: the higher the PDI, the more important was the senior management's position and the less regard was given to the actual benefits for the organization.

Apart from Performance Expectancy, which was by far the strongest factor, only an **Attitude**-related concern was mentioned once, the resistance to the project management procedure as something that was seen as imposed by the management, and as a consequence, the KM system as well. This trend, however, was said to be overpowered by the pragmatic consideration as soon as it became evident that it helped make the job easier.

#### **5.5.4. Assessment of the Hypotheses**

H1 was supported for a low-PDI environment. H2 was supported as an individualist case. No instances of MAS, UAI, LTO or IVR were found, thus H3, H4, H5 and H6 had no evidence for or against them.

#### **5.5.5. Case Summary**

The case continued the trends emerging from the previous four cases: the behavioural traits observed could disagree with Hofstede in some ways, however, if the hypotheses were compared against the actual levels of dimensions, H1 and H2 held well.

The summary of the findings is presented in Table 15.

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Low: flat structure, low top-management involvement, critical attitude.	Individualist. Low importance given to strong ties. Material motivation.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
Quite strong, pragmatic.	Absent.	Absent.	Absent.	Negative at first, then overcome by the p. expectancy	Absent.	Absent.
Hypotheses Testing						
H1	Supported: low-PDI context and active sideways knowledge sharing.					
H2	Supported: individualist environment, comfortable and pragmatic use of weak ties.					
H3	No evidence either way.					
H4	No evidence either way.					
H5	No evidence either way.					
H6	No evidence either way.					

Table 15: Case Summary (NaviSoft, Russia)

## 5.6. Case Six: TrainingSolutions, Ukraine

### 5.6.1. Background Information

TrainingSolutions was a small software development company and a subsidiary of a bigger parent multinational. Their core activity was the development of eLearning software solutions, and although the top management (four people) were based in the Netherlands, all twenty-four programmers were based in Kiev and were Ukrainian by nationality. The interviewee, R6, CEO by title, was Dutch and in this respect the responses offered a foreigner's view on the peculiarities of the East-Slavonic culture. R6 described the culture in Kiev office as "*distinctly Russian*", even with no Ukrainian language spoken.

In the Ukrainian office they were using a variety of Web 2.0 KM tools including an interactive Wiki-style knowledge repository and blogs. The Wiki was used to R6's satisfaction, however, there were some cultural difficulties, along the similar lines as in PiggyBank and SoftCorp.

### 5.6.2. Cultural Context

The case was not particularly rich in trends, however, a few observations came out of the analysis.

This case is another instance of a typical Hofstedian situation for Russia/Ukraine with **very high PDI and low IDV**. The workforce was unwilling to make the management too well informed about their work (an instance of H1).

According to R6,

*"Getting anything out of them is virtually impossible. Sometimes I get a feeling they don't want to share anything about what they are doing not because they are too greedy, in a sense, but rather because they are afraid that the more the manager knows, the higher are the chances they'll find out that something is wrong".*

R6 said that

*"it seems to be gradually improving over the time", and that they were "making conscious efforts to make it clear that speaking up - in a broader sense - is encouraged and appreciated, but the process is slow".*

R6 tried to "coach the knowledge exchange into them", but at least two programmers "were so reluctant that they had to be replaced". This direct coercion "has shown them we mean business, and we haven't had problems ever since". The observation that this rather harsh approach had solicited positive outcomes is a sign of very high PDI dynamic.

The employees also resisted sharing knowledge with colleagues. First of all, there were significant issues with open knowledge sharing: knowledge was treated as power base and an asset to leverage, of direct consequence to one's professional standing. Some sharing was achieved, but with high degree of reluctance. Strong ties were very important, and from the technology point of view, the Ukrainian workforce had shown strong preference towards higher-context communication tools for knowledge dissemination. There was a strong preference towards Skype and phone rather than the more impersonal means (i.e., online and not in real time).

The last point raised by R6 was about blogs and visibility. The company had tried openly publishing a blog by one of their technical gurus, but the Ukrainian management got really upset. It was thought that someone would poach the expert if they "realize how good she is". It is a yet another extreme manifestation of the 'knowledge is power' attitude, this time

at a level of meta-knowledge: not only the management team were uncomfortable to share the knowledge they had, but they did not even want their alleged competition, real or otherwise, to be aware of *what* they knew. This time it had a direct consequence on the company's social media activity.

### **5.6.3. UTAUT Constructs**

Social Influence, from the boss's side, was the only UTAUT factor that played a role in the process. Similarly to all other high-PDI cases, it overshadowed other determinants, including Performance Expectancy.

### **5.6.4. Assessment of the Hypotheses**

H1 was supported very strongly, with evidence of both top-down flow and strong reluctance towards bottom-up and sideways sharing.

H2 was supported through demonstrated preferences for strong ties, high-context communication and distrust towards the outsiders.

H3, H4, H5 and H6 had no related evidence.

### **5.6.5. Case Summary**

The case turned out to be somewhat extreme: in no other instances anyone was said to lose a job because of unwillingness to use a Wiki. However, the very observation that it not only was seen as acceptable, but also brought the desired outcome, is indicative of

TrainingSolutions' high-PDI culture. Other than that, it conformed to expectations based on Hofstede, and was in line with other typical cases for H1 and H2 (Table 16).

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Quite high, in accordance with H.	Collectivist (low IDV), in accordance with H.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
Secondary to the SI: the pragmatic value is undervalued in comparison to the boss's opinion.	Absent.	Very important, especially the boss-to-subordinate relationship. Politics is a key factor.	Absent.	Absent.	Absent.	Absent.
Hypotheses Testing						
H1	Supported.					
H2	Supported.					
H3	No evidence either way.					
H4	No evidence either way.					
H5	No evidence either way.					
H6	No evidence either way.					

Table 16: Case Summary (TrainingSolutions, Ukraine)

## 5.7. Case Seven: InterFood, Russia

### 5.7.1. Background Information

The next interview took place with an IT Service Delivery Manager, R7, employed by InterFood, one of major FMCG manufacturers. In Russia alone they owned 12 large manufacturing sites, and globally, according to the Company's website, they employed over 170 000 people. R7's primary responsibility was to manage the IT Helpdesk team for the Russian office.

The company had been familiar with the idea of interactive portals for a long time (there was an Intranet portal with some unused interactive functionality as long as 15 years ago), but around 2010 the newest version of SharePoint with all interactive features had been introduced.

R7 described the situation with the internal IT help desk. A Wiki-based system was used very actively, which was driven by KPIs: the helpline's performance was being measured by the percentage of cases solved during the first contact. At the same time, the target duration for a phone conversation was ten minutes maximum.

The Wiki implementation process was done in several steps. At first, to make the system work, a conscious effort to "*fill it up*" was made – there were competitions and prizes for top contributors, introducing a fun component along with some cash prizes. Since the critical mass of knowledge was achieved - i.e., there was enough in the database for it to be useful and only the new cases needed to be entered - formal requirements were introduced. For example, if a question about the same topic was logged twice, there had to be an article written about it. Plus, the project management methodology they followed (ITIL) dictated that all projects had to have knowledge captured. Knowledge capture was

driven by the 'first line' - those on the phone, with other technical experts supporting them and filling in the gaps.

### 5.7.2. Cultural Context

InterFood and their interactive knowledge database designed to help the IT helpdesk in dealing with the internal customer inquiries was another example where procedural requirements, this time KPIs, were used to drive the implementation process, similarly to the NaviSoft's example.

The observed behaviours in this instance were **low in PDI**, although this related to IT Helpdesk only, and a comment was made about the wider company being quite different and relying a lot on the pressure from above. R7 described the Helpdesk's culture as "*liberal*", and power and hierarchy as "*not that important*"

At first, it was said, the Wiki implementation needed to be "*pushed through*" – i.e., management needed to be involved, but after that users took to it and the initiative started coming from 'below'.

The **collectivism-related** indicators were mixed: although personal networking was valued very highly ("*Personal relations are absolutely key, to such a degree that my first boss put 'building an interpersonal network' as a target for my first year's appraisal*"), such things as individual competitions that worked, are leaning towards individualism. It could only be assumed that in the IDV respect, InterFood's culture was neutral.

R7 thought that measuring their KM performance in 'hard' numbers and setting employees' targets for annual appraisals based on them was a sign of maturity rather than means of managerial control:

*"You know we as a company are growing all the time, so new acquisitions happen every year, and I am often involved in IT due diligence. Some of those we bought recently just don't measure anything. How they can improve anything, including their KM, if they don't have the numbers, I have no idea".*

The following passage is quite indicative. R7 was putting forward his views on why it is important to measure performance in a Russian setting:

*"When knowledge sharing is not driven by KPIs, there's a lot of 'personal ambitions', and it's very hard to pull the information out of people; they would usually try to 'pass the buck'".*

The importance given to KPIs is a **masculine and a high-UAI** indicator. The latter is also supported by proceduralization of the KM at the later stage. The relevance of competitions and 'fun', as well as the reference to the 'liberal culture' were all indicators of higher levels of indulgence in their organizational culture (i.e., **high IVR**).

### **5.7.3. UTAUT Constructs**

The importance of measureable results and performance indicators belong in Performance Expectancy domain, which was clearly prominent, and the company saw no issues with monitoring the interactive portal and measuring a number of different parameters. It could be suggested that in this highly formalized form, their Web 2.0 portal did not go against the uncertainty-avoidant preference.

There were no other clear UTAUT-related indicators, other than a generally positive attitude.

#### **5.7.4. Assessment of the Hypotheses**

As far as the hypotheses are concerned, H1 was supported: low PDI coincided with unproblematic sideways knowledge flow, since the only audience using the database was the peer group. H2, in line with an inconclusive IDV profile, didn't have any strong indicators for or against it.

H3, at the first glance had some evidence against it: clearly, the tendency to measure everything and to see 'hard' performance measurement as a positive sign is a high-UAI behaviour, and it should, by H3, lead to a conflict, which it clearly didn't. It could be argued, however, that establishing a performance measurement system that satisfied their uncertainty-avoidant preferences without impeding on the freedom of knowledge exchange solved the conflict.

Similarly, there was a masculine tendency that was not necessarily satisfied by the otherwise egalitarian Wiki-style system (this is a point related to H4), yet this gap was closed by the performance measurement system too.

For both hypotheses it could be stated that should such a move have proven to be impossible for whatever reasons, the unresolved conflict could present a system's adoption obstacle.

The question remains, however, whether these two points require a review of the hypotheses or limiting the phenomenon's universality yet again. Given that the evidence against the unmodified hypotheses is quite clear, it could not be ignored.

As a result, the following modification to H3 was made:

*H3: In a high-UAI environment the use of Web 2.0 will be inhibited by the unacceptability of its unstructuredness, dynamism and lack of control, as well as the pluralist nature of knowledge generation, unless specific measures are taken to increase the level of control or to make the Web 2.0 system more structured.*

H4 would require a more dramatic revision. The original “Masculinity/femininity will have no specific impact on the use of Web 2.0” is a matching null hypothesis to “MAS can have an impact through the mechanism X”, and it was proposed because the quantitative evidence suggested that MAS played no role in Web 2.0 adoption and use, unlike all other dimensions.

It has been shown by InterFood’s case that this is not always the case. In order to reflect this piece of evidence, H4 would have to be reversed to its non-null counterpart:

*H4: In a highly masculine environment, successful implementation of Web 2.0 systems would require modifications to the system in question enabling the corresponding values to be enacted.*

This new version incorporates the six previously reviewed cases: none of them represented a strongly masculine environment, and unmodified Web 2.0 systems should not experience any difficulties; the new H4 explains InterFood’s example well.

Finally, LTO hypothesis (H5) had no evidence for or against it, and H6 was supported by the ‘fun’ competition working well to stimulate the system’s uptake, which is explained by the ‘liberal’ (i.e., less restrained) culture in the IT division.

### 5.7.5. Case Summary

Overall, it turned out to be a low-PDI, masculine, uncertainty avoidant and indulgent case.

Although H1 held, H3 and H4, the hypotheses that previously had no related evidence, in this case had a few clear points against them and had to be revised (Table 17).

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Low: described as 'liberal'.	Neutral	High uncertainty avoidance: propensity to measure everything.	KPI-driven. Highly masculine.	No evidence either way.	Somewhat indulgent.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
KPI-driven. Pragmatic.	Absent.	Absent.	Absent.	Absent.	Absent.	Absent.
Hypotheses Testing						
H1	Supported: low-PDI context and active sideways knowledge sharing.					
H2	No evidence either way.					
H3	Direct evidence against the hypothesis. The revised version: "In a high-UAI environment the use of Web 2.0 will be inhibited by the unacceptability of its unstructuredness, dynamism and lack of control, as well as the pluralist nature of knowledge generation, <i>unless specific measures are taken to increase the level of control or to make the Web 2.0 system more structured.</i> "					
H4	Direct evidence against the hypothesis. The revised version: " <i>In a highly masculine or feminine environment, successful implementation of Web 2.0 systems would require modifications to the system in question enabling the corresponding values to be enacted.</i> "					
H5	No evidence either way.					
H6	Somewhat supported: the 'fun' element worked well, which matches the non-restrained culture.					

Table 17: Case Summary (InterFood, Russia)

## 5.8. Case Eight: FashionOnline, Russia

### 5.8.1. Background Information

FashionOnline was a five-year-old online fashion retailer physically based in St. Petersburg and importing such brands as Calvin Klein, Tommy Hilfiger and others similarly positioned on the market.

The company was privately owned, and the four co-founders maintained non-executive positions on the board. They employed about a hundred employees, with an average age at the lowest level of about 25, and in the management, 35.

The respondent, R8, was a COO by title, although it needs to be pointed out that the company gravitated towards inflating the titles: the lowest-ranking office worker was called a 'manager', a head of department a 'director', and the level above that would have a C-title. R8's responsibilities could be described as those of an Operations Director or similar.

The system company used, and the way it was done, was different from all other cases analysed in this research. No formalised knowledge management procedures or systems were in place, however, an attempt was made to increase the level of knowledge exchange, and a number of function-based communities of practice were formed on Whatsapp, a cross-platform instant messenger that was already actively used alongside Skype by most employees. R8 has described how the formalization came to be:

*"Whatsapp was used anyway, because it was more convenient than phoning people. The difference is that they decided to formalize it and create permanent groups. The decision was made by the chairman – the guy who's above the CEO. The board liked it, and they took it on.*

*In principle, the groups are based on functions. For instance, the HR Director is the whole HR function, so that's her in the HR group, plus me, but I'm everywhere, and the CEO. The bigger groups, like buying, have a fair mix – buyers, IT, finance, and the usual. Anyone who's got anything to deal with buying. Who's in the group, is determined by the CEO; he's the only one with the admin rights".*

The idea of Whatsapp groups as an online space for people to share thoughts and ideas as well as to ask and answer questions got reduced to the senior management using it to solicit answers from the employees out-of-hours:

*"Whatsapp? Yuk. Because when the CEO gets online at midnight on Friday and starts asking questions, you can get tired of it eventually. And it's supposed that since we're all contracted for an undefined number of hours, we should be there to respond.*

*For instance, here's one from buying: he's talking about a certain brand, wants to figure out the situation. Or another one, he went to a brand's website and noticed we're not on it. Or he can ask about cancelling a brand. Well, and then some other idiots can start posting as well, because the management can see it, so discussions appear."*

The questions were not aimed at anyone in particular, and supposedly it was the community who provided the answer rather than a designated person:

*"So he just fires a question into the darkness. Who answers them? The one who stands the closest. Or the bald guy, or the ginger guy [i.e., a random person - PB]. Whoever is supposed to know the answer, gives it. If nobody answers, well, then nobody does. The boss goes berserk, but the funny thing is, he can go berserk in writing only. He's very docile offline. So he just writes angry notes".*

How much people rushed into answering a question depended on the question itself. Something benign or even positive was usually answered straight away, however, dealing with something with negative connotations would get delayed until the CEO eventually got upset, wrote an emotional note and the person who's most direct responsibility it was, dealt with it.

At the same time, how much one was engaged with Whatsapp activity had virtually no consequence on one's standing in the organization or one's career progression:

*"We're quite small, and we're all visible. There's about a hundred of us. We all know who's worth what, and being active on Whatsapp is about as useful for the career progression as just coming to all meetings".*

It is also worth highlighting that what was put in place was not a dedicated system or a piece of software, but rather a different, more formalised way of using a pre-existing off-the-shelf third party solution. Furthermore, before the formalization move, using it was just a matter of convention and convenience, whereas after that it became strongly implied in the same way as using emails: strictly speaking, there was no formal requirement to do it, but it would be perceived as idiosyncratic if someone refused to:

*"If it wasn't for the boss, we'd probably still use it, but maybe not for these particular purposes and not in these groups. It would be more of a simple communication tool; we are using Skype and Whatsapp between us anyway. I've got some buyers in Europe. How else would I be talking to them? Nobody is using the phone any more. If you need a quick one with someone, it's not like you're going to phone them, or go and talk to them, it'll take longer. Or in the evening, if you see them online, it's quite convenient as well".*

In other words, the official use of the application for knowledge exchange was being pushed by the CEO, and it wouldn't be used for it if it wasn't for him.

### 5.8.2. Cultural Context

The top management made a conscious effort to try and model the organizational culture based on the example of their nearest Western comparator, which led to adoption of a number of surface manifestations such as open office layout. This, according to the respondent, did not change much in the way of the more deeply-ingrained values. Talking about a different subject – barriers to knowledge sharing – R8 said:

*"We're an open plan company, so everyone has to talk to one another. Open plan because we wanted an open culture, the same as Net-A-Porter [one of the world-leading online fashion retailers – PB]. So they've had open space, and we had to do it as well".*

R8 was not too sure whether it was done as well as it could be, and whether it achieved the desired outcome:

*"It's all been done kind of strangely. We've got our call centre, half a dozen people, in that office. And right next to them there's buying, they just giggle all the time. And next to them there's the marketing department who don't want to listen to all that. People generally hate it, and I think that's because we've got an open-plan office, not an open-plan culture".*

R8 also made a general remark about the culture, referring to it as a 'bog':

*"The culture we've got here, and it's probably because the founders are mostly from big companies, the culture is strange. It's more like in a big company, a bit boggy, it's lacking the entrepreneurial feeling you get in smaller ones".*

From the PDI point of view, the behaviour was neutral: such things as the re-thinking of Whatsapp's use were done in a distinctly top-down view, with the Board deciding it was a good thing to have (one could speculate that it might have been linked to the idea of a Western culture). Furthermore, the more formalized way of using Whatsapp based on groups (again, defined by the top management) was employed mostly by the CEO as a means of getting information out of subordinates, and it was pointed out that the program was used in this particular way only because of the CEO and it would be stopped if it were not for him. All of these are in line with H1.

At the same time, there were some signs that 'from below' this approach was more tolerated than seen as normal and acceptable, which would make it a more clear high-PDI case. The CEO's tendency to send questions on Friday evenings was seen as bothersome, and there was no rush to answer them until the CEO started complaining. It was also acceptable to speak up against the CEO.

The CEO was not seen as a forceful figure despite even his somewhat direct management style:

*"Well, of course the CEO is listened to, especially when he writes those stupid notes. But they aren't that afraid to speak up against his view on a professional topic".*

Overall, PDI-wise the picture was somewhere in the middle of the scale, with it not being low enough for people to actively resist the CEO's initiative, but at the same time not high enough to follow it blindly.

There were some signs of **collectivist** behaviour. Whatsapp groups behaved in a ‘safety in numbers’ way: since the questions were addressed to the whole of it and nobody in particular, it was deemed safe to ‘sit it out’ until the silence could not be maintained anymore and someone had to take the responsibility. It was also pointed out that the relatively small size of the organization, approximately 100 employees, significantly below Dunbar’s maximum 150 for a functional community (Dunbar, 1992), allowed it to behave in a fashion closer to that of a single group with comparatively stronger ties between members. This was partly attributed to the open office and, as a consequence, to everyone knowing each other personally. In that respect, there were no issues associated with communication on Whatsapp.

The only indicator of masculinity was the importance given to the titles, which signifies a importance of one’s status. At the same time, the ‘sluggish’ culture, as it was described by the respondent, was something that indicated a lack of masculine values, but did not mean femininity was high; it was more closely related to the next dimension, UAI.

**Uncertainty** was clearly not seen as a good factor in the company: the undesirability of change in the business processes, the non-firing policy and “*getting paid on time*”, allegedly the most important value in the company, are all indicators of that. R8 pointed out:

*“Business processes, once they’re established, we don’t change them, god forbid”.*

The following passage contains an indication of the LTO and IVR levels:

*“There are two cultural things that get promoted a lot: the first one is that we’re allegedly the trendiest player on the market, that we can set trends in fashion. That’s the way of thinking they’re trying to promote, but it’s done so clumsily, and it doesn’t work. Besides, we’ve got some people who know something about fashion, but also a lot of those who don’t care. And the other one is that we need to grow.*

*Grow, grow, grow; this is done through trying to instil a service-oriented attitude, and I think it's working out a bit better. But in general, if I'm honest, the culture is rubbish. Because it's a bog. There's no initiative. A typical Soviet corporate culture, despite the age. And that's mostly because they treat people not like a team, but like a structure – you're valued for, and only for, the functions you can carry out. And the biggest value in the company is still getting paid on time".*

Thus, **IVR** had, too, some mixed evidence. On one hand, one of the two values promoted by the management – that the company could be the trend-setter on the Russian market – bore the hallmark of an indulgent message. At the same time, a lot of people were said not to care about it.

**LTO** was illustrated by the other cultural value, namely that of importance of growth over the immediate profits; this is a symptom of high LTO, and this time it was more widely supported.

### 5.8.3. UTAUT Constructs

The only reason why Whatsapp was used in this particular way, was the **Social Influence**, and more precisely, the 'my boss wants me to' part of it. The more dynamic, informal, grassroots way (which lies out of the organization's power distance context) was driven by **Performance Expectancy**: the messenger was very strongly described as a convenient mode of communication.

#### **5.8.4. Assessment of the Hypotheses**

H1 was supported in a way that could be expected from a mid-range PDI case: the top-down information flow was enforced by the CEO, but it was tolerated, sometimes begrudgingly, rather than readily accepted.

H2 was supported: given the size of the organization, it was small enough for people to know each other personally, which would be a positive factor in a collectivist environment allowing them to form ties stronger than what could be expected in a much bigger entity. As a consequence, there were no communication and/or sharing issues.

H3, related to MAS, had no well-pronounced evidence for or against it, which corresponds with an unclear MAS profile of the organization.

H4 was supported: the organization has shown several signs of high uncertainty avoidance, and the CEO's move to formalize and structure the use of Whatsapp matches it well.

There were no particular indicators for or against H5 or H6: although it was most probably a longer-term oriented organization, no concerns were mentioned in relation with Whatsapp's transient nature. It also did not have a particularly fun or business image – it was quite neutral in that respect – which must have made it indifferent to the slightly indulgent backgrounds.

#### **5.8.5. Case Summary**

The case was not as clear-cut as most others, and such dimensions as PDI, MAS and IVR had weakly pronounced and sometimes mixed evidence. Only UAI and LTO were unequivocal, although LTO was not very strong. There were instances of performance expectancy and

social influence; H1, H2 and H4 were supported, and other hypotheses did not have any clear evidence for or against them. (Table 18).

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Medium; mixed examples.	Mildly collectivist.	Uncertainty-avoidant	No evidence either way.	Weakly long-term.	No evidence either way.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
Fairly strong, but overpowered by the boss's influence.	Absent.	Strong influence from the boss.	Absent.	Absent.	Absent.	Absent.
Hypotheses Testing						
H1	Supported for a mid-PDI case: the top-down direction was present, but was begrudgingly tolerated rather than welcomed.					
H2	Supported: the organization was small enough to maintain sufficiently strong ties.					
H3	No evidence either way.					
H4	Supported: the CEO's move to formalize the use of Whatsapp matches the uncertainty-avoidant culture.					
H5	No evidence either way.					
H6	No evidence either way.					

Table 18: Case Summary (FashionOnline, Russia)

## 5.9. Case Nine: EnviroCom, UK

### 5.9.1. Background Information

The next case, the first in the Anglo-Saxon series, was based on two interviews: with R9a, a production manager, and R9b, a communications manager from the HR team, responsible for the company's interactive KM portal. The company itself, EnviroCom, was a multinational provider of 'environmental services'- waste, water and energy management. The company was quite large - tens of thousands employees - and had been operating in the UK since mid-1960.

They were using a complex 2.0 system including blogs, a social network, forums and RSS feeds to create an online community not restricted to business matters, but dedicated mostly to them.

Their implementation process had several iterations. Since the importance of creating an online portal for communications and knowledge sharing was recognized, the first solution they had tried was based on SharePoint, like in most other cases so far. A system was created and deployed, however, issues quickly came to light; R9b said that

*"...people started complaining about how buggy and glitchy it was, how rigid and how not fit for purpose".*

The original effort had been cancelled, however, KM's strategic importance was still recognized, and the company decided to opt for a custom-built solution. This time around, however, the deployment was done in a much more participative way: it was heavily supported by training and communication, and the release was presented as a beta-version with user feedback collected and acted upon. At the time of the interview the company had

been through three iterations, preparing for the fourth, and it was working well. The message to the audience was that they needed to ensure everyone's opinion was taken into account, hence a number of beta-versions.

### 5.9.2. Cultural Context

The first Anglo-Saxon case in the study, it had a few hallmarks in line with Hofstede's numbers.

There were multiple instances of **low PDI** (UK scores 35 points): participative decision making both practiced by the management and received well by the employees, a high degree of employee engagement into the design and configuration of the system, employees feeling comfortable speaking up and challenging the management and overall, "*open and non-oppressive culture*" (by R9a's account).

Some **individualist** behaviours were evident (UK's IDV score is 89), such as trying to put oneself out into the limelight by actively participating in high-profile discussions on the portal, and having comparatively high propensity to communicate with other people 'in the open' without knowing them well. This was also supported by several examples of between-groups sharing.

**Uncertainty Avoidance** was notably low (UK's score UAI is 35 points), which manifested itself in how well the 'beta-version' implementation went: they deliberately publicised it that the system was in an unfinished state, and that its development was an iterative process, perhaps never to be finalised. As R9b's interview indicated, this was seen as OK because it was done to make the system fit the user requirements as closely as possible.

Furthermore, the regulation mechanisms employed were deliberately relaxed.

R9b said:

*"We do have a set of house rules, and they are deliberately vague. I can show you, but effectively, we're asking everybody to keep it constructive and mind the confidentiality, but it's more or less like emails – there's some kind of etiquette, but we let it self-regulate. The same is with the subjects – OK, they'll be doing it in working time, but [smile] if they want to talk about cats on the discussion board, we'll happily pretend they're doing it during lunchtime".*

R9b added:

*"... we were wary of creating a day-job-focused chimera that would die to death before even taking off properly; we even made the graphical design in a different colour, avoiding the corporate one; we just said to them: we like it when people know each other and get along, and communicate with one another. It's obviously essential for good climate at work, and OK, we're not throwing money at it just for the sake of it – let's not be hypocrites – if you feel good, we'll get better productivity, better engagement, lower turnover and so on in return, but it's a win-win. So just give it a try, see if you can use it to keep in touch with your mates and colleagues on your site and others, and let us know what you think".*

R9a corroborated what R9b was saying:

*"...all they said was that the usual company policies apply – you know, with confidentiality, sexual harassment, bullying and all that. There are no specific portal-related rules; it's all left down to self-regulation. Seems to work – for one thing, you'd think twice about what you want the whole of the UK operation to see coming from you, a lot like hitting 'select all' in the address book and sending out an email like that".*

Masculinity picture was mixed, in disagreement with Hofstede (higher than average 66 points). On one hand, there were some examples of masculine behaviour, like trying to gain more personal visibility in management eyes, almost exactly opposite to PiggyBank and TrainingSolutions whereby there was a problem with employees being reluctant to get too exposed to their management online and to have the management too well informed about who they were, what they were doing and how things were going. At the same time, such factors as good relationships, creating an accommodating social atmosphere and trying to establish a social exchange online first, hoping that work-related one would follow, as in the example above, are distinctly feminine.

Similarly, in a story told by R9a, a foreman decided to vent their frustration online not in the most politically correct way possible, which is a masculine move, however, the reaction of the majority, challenging such behaviour as disruptive and unconstructive, is feminine. On balance, there were more **feminine** indicators than masculine.

There was comparatively few instances of **long-term orientation**, however, the decision to let the system develop gradually and organically in the expectation that it would remain relevant for longer, can be treated as one of them. Britain scores a halfway 51 points and a balanced mix of long- and short-term values should be expected.

The acceptance of the social exchange on the portal - the attitude of literally 'it's OK if they talk about cats, they will talk about work sooner or later anyway' – is a **high-IVR** indicator, as could be expected from UK's relatively high 69 points.

### 5.9.3. UTAUT Constructs

**Performance Expectancy** was present, although not very strongly. The HR respondent (R9b) saw the system as something that could help improve engagement and morale, but it was a general idea rather than a detailed plan. The production manager (R9a) was more precise and gave a few practical examples, however, none of the two identified the pragmatism as a big driver.

**Effort Expectancy**-related concerns were mentioned a few times in connection with abandoning SharePoint: it was taking too much effort to make it work for the company. Linked to that, **ATUT** (attitude) was shown to change from strongly negative with SharePoint to positive with the new system.

**Social Influence** manifested itself in the company making it clear that the management thought it was a good idea to use it, and it was mildly encouraged by the PR campaigns, however, no force was applied.

### 5.9.4. Assessment of the Hypotheses

H1 was supported in its low-PDI form. H2, equally, had some evidence for it. H3 was supported (low UAI and the system received well). H4, modified after InterFood's case, was supported in its feminine form. H5 had no strong evidence for or against it. H6 was supported.

### 5.9.5. Case Summary

The first Anglo-Saxon case turned out to be mostly in line with Hofstede, with an exception of MAS, where the mixed evidence was leaning more towards a low score.

As such, it continued the trends identified in the previous cases, taking into account the observed levels of cultural dimensions (Table 19).

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Low: described as 'non-oppressive', with multiple other examples.	Individualistic.	Low	Mixed, with stronger feminine evidence.	No evidence either way.	Somewhat indulgent.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
Mentioned a few times, but not very strongly.	Present as a factor in abandoning SharePoint.	Present as an approval and stimulation from the company's side	Absent.	Absent.	Absent.	Absent.
Hypotheses Testing						
H1	Supported: low-PDI context and active sideways knowledge sharing.					
H2	Supported: individualist environment, many examples of out-of-group collaboration.					
H3	Supported: the company's unstructured implementation approach and the system worked well together.					
H4	Supported: the feminine values were reflected in the company's position on the role of the system in creating a good climate at work.					
H5	No evidence either way.					
H6	Somewhat supported: the non-business element worked well, which matches the non-restrained culture.					

Table 19: Case Summary (EnviroCom, UK)

## 5.10. Case Ten: SandWitch Co., UK

### 5.10.1. Background Information

The company was a medium-sized UK-based food manufacturer. The business consisted of the typical HQ functions (finance, HR, marketing, development), a number of distribution depots, and four manufacturing sites of about 300 people each.

The four sites were technologically significantly different from one another; e.g., some could produce drinks, some had aseptic food packaging facilities, some handled raw ingredients such as bulk sugar, and so on.

Despite the technological differences, the management structures on all sites were exactly the same, which was an outcome of a larger push for unification initiated four years before the interviews by the Managing Director. This was particularly relevant to the case because the unification and passive resistance against it were mentioned a few times by respondents in relation to their KM practices.

SandWitch Co. started a Kaizen program in 2005; a number of Manufacturing Excellence managers were hired and a TQM-style methodology was adapted from their combined previous experience.

The program relied on capturing, sharing and replicating knowledge, ideas and success stories. A large component of it was a set of paper-based forms and templates, and the explicit agreement was that everything would be standardized across the company - forms, training, reporting, methodology, all of which would facilitate knowledge transfer.

In reality, however, the system was continuously tweaked by each factory team – because “*it just didn’t work for us*” (R10a, the Bristol’s factory ME Mgr.) or “*the shopfloor folks have*

*suggested an improvement to the system, and I couldn't say no, but it's irrelevant to the rest of the company, so we just changed ours" (R10b, Ipswich ME Mgr.). The Managing Director, the key sponsor of the unification effort, was reported to be dissatisfied with these changes; R10a and R10b mentioned "a tantrum" and "being slapped on the wrist for changing things we've agreed upon, whatever the reasons".*

To add to the background, a lot of importance was given in the company to scorecards and KPIs such as safety figures, production cost, operational efficiency and so on, several of them serving as a basis for annual bonuses. The importance of KPIs in turn led to internal competition between manufacturing sites.

The IT systems used at the beginning of Kaizen implementation were an XP-based shared drive, a typical Web 1.0 Intranet site and a variety of other more specialized systems such as SAP and maintenance planning databases.

In 2008, the company made a decision to migrate to SharePoint, which was not only to replace the shared drives and the Intranet, but also to provide an online platform for knowledge exchange and support for teamwork. One department – Technical Development Team – had been using it for about a year by then, out of their own initiative, and the feedback was positive.

The IT side of the implementation process – servers, software set-up and so on – was done first, the intention being to hand it over to a number of 'super-users' (better trained users with some limited administrators' rights), three or four per factory, at the very end. All files would be moved from the XP server to SharePoint, and the former would be turned off. Every department would have their own interactive page with forums, team calendars, discussions etc., all done without the central IT's involvement unless there were technical difficulties. The details of configuring the pages for each department and all training were left to the super-users. Coordinating their activities was delegated to R10b.

Migration happened successfully; most activities usually carried out on shared drives were moved over to SharePoint. Some departmental pages were created and populated to a degree; the process was supposed to be gradual, according to R10b.

However, in 2012, three years after the implementation in 2009, SharePoint, according to R10d, a Kaizen Coordinator, was still used as a shared drive and a library for such items as company forms and policies. Ipswich factory requested that the XP server was kept running because of its 'convenience'.

### 5.10.2. Cultural Context

There were multiple signs of high PDI, despite what could be expected in a British company.

The company was managed in a rigid and Taylorist way with a directive management style.

As R10a put it,

*"I guess the biggest problem is simply that people are too busy to do something that isn't directly their day jobs. If I were to choose between driving the KPIs the right way or messing about SharePoint – that's not that much of a choice, is it? And my boss would no doubt correct me if I made the wrong one. Scorecards are what matters".*

The importance of scorecards and the way they were used in the company for the control purposes (in a notable difference from a more subtle approach in InterFood) bore signs of IDV, MAS and UAI combined. The latter was also clearly supported by the push for unification.

Describing his attitude towards the system, R10c, a Kaizen Coordinator from Chester factory, mentioned the issue of priorities under pressure and expressed a view close to an 'everyman for himself' stance:

*"My bonus depends on the scorecard, not on how much stuff I share with other sites, so it's kind of obvious what to do. OK, they won't have it if I just refuse an open request for assistance, say, if Ipswich ask me for something they think that can be useful for them. That's bad leadership and too far from the party line of 'we're all one big company'. But that's the hypocrisy of it – I can't openly decline, but if I start spending too much time on it, a clip 'round the ear is always on the menu".*

There was little in the way of LTO; IVR, however, came across as rather restrained, with little space left for the fun side of things both in the way the company was run, and the way the KM system was designed.

### **5.10.3. UTAUT Constructs**

Most respondents alluded to the system's fitness for purpose one way or another, which is a **Performance Expectancy** element. R10d, a Kaizen Coordinator, said:

*"It's not really fit for purpose, in the sense that it can't help us do what we want it to. You know our paper-based system for improvement records? We've got them online now, I mean the blanks, but how on Earth do you feed the ones filled in onto SP? Scanning is not an option – they're gonna be unsearchable. Filling them in electronically, that's ideologically wrong; we want people to grab a piece of paper and write their idea down, not spend hours and hours in front of PCs. See what I mean?"*

R10c also didn't think that the very idea of best practice sharing was particularly good:

*"On top of that, there's genuinely not that much that we could make them share. Chester is so different from Ipswich from the technology point of view, there's not a single piece of kit that is the same. So it's not SharePoint's fault, obviously, but more of the whole sharing idea being not fit for purpose".*

There was also some discontent with regards to the way the implementation process was dealt with by the IT. Those, like R10b or R10c (an implementation champion and a super-user, respectively), who were involved in the implementation of the system, were complaining about the way the IT project management handled it, with no involvement of the user audience into the configuration of the system and without any implementation support, such as communications and training, they both thought necessary (another PE - related point). R10b said:

*"It's not the first time I see it happening. If you put an IT guy as a project lead, they will probably deliver something that technically works – if things go well – but something nobody knows how to use or cares about. And when I say 'works', I mean 'does something the IT thinks is it's supposed to do', but whether that's what the end user wants, is a separate matter. Sometimes they even forget to ask".*

The respondent also described a phone conversation with the IT implementation manager:

*"So I was on the phone with that guy, what's his name. It was our first conversation, and we were going through the plan he sent me earlier. It felt a bit weird - something was clearly amiss, but the guy didn't behave like he felt it too. Then it struck me; when he was talking about the project's goals, targets, deadlines, success more broadly speaking, it was all about the handover to us. That's when the project would be closed off. That's it. Built and handed over, bingo! Whatever*

*happens after that, like if anyone ends up using it, they didn't care. It's all ours from then on.*

*So I said to him – hold on a sec, you don't plan in anything around the people side of things, communication, engagement, training, whatever. And as far as my experience goes, things like ERP implementations fail most often because of the human factor. Do you know what he said in response? Literally – 'don't teach me to suck eggs'. I wanted to swear and hang up, but I didn't. I'd love to say that it's clear now who was right, but the dude has already moved on to other projects, probably with a hefty bonus for a resounding success with SharePoint".*

However, when R10b was asked whether this could be the reason for the under-utilization of SharePoint, he disagreed:

*"No, I don't think so. If they did it right, things might've gone more smoothly for us from the kick-off point of view, but it wouldn't make people use it for knowledge sharing purposes. No, I think the reasons why it works to some degree, why it doesn't work to the degree we want and even why people are reluctant to replicate their ideas and share knowledge is the same: leadership. See, they largely do what they're told. You tell them to use SharePoint, they will use it, but the interesting thing is, they know – probably having found it out with every Factory Manager by trial and error – how much they really want them to do whatever it is, and how much is just hot air. So they'll do as little as they can, or as little as they feel the real need for, and the rest will be compensated for by 'passion'. Talking, that is".*

R10d made similar point about the implementation process and its impact:

*"Yep, they just dumped it on us and disappeared. Whatever. We've had the same with SAP, maybe a bit better, but still. That's the way they do things. The impact?*

*Don't know. It's not up to us whether we want SharePoint or not. There are the visible sides, like the file server, that's something we have to do, although Ipswich seem to have gotten away without it. The rest... Nah, not yet, and I don't think anyone is gonna look at how much we share ideas and things like that – maybe in a few years they will even come up with a bonusable target about it, but surely not yet. However, if a senior manager asked me right now what I thought about it, I would, sure thing, say that it's the best thing since the sliced bread. OK, I would blame the IT a little, but would show understanding and willingness to overcome any challenges, all because SP is so awesome".*

Both passages, apart from alluding to a high-PDI situation again, highlight the role of the organization's upper echelons and **Social Influence**, as a consequence. As it was seen earlier, delivering against the 'hard' targets related to day-to day job was seen as a must, whereas what was required in terms of SharePoint was more *to be seen* being on board rather than using the system in real terms. Apart from the technical difficulties making the use of the system too effort-intensive, it also highlights the balance between the political and the pragmatic dimensions of the issue: employees knew how much their manager wanted them to do, and they did not venture any further than that.

#### **5.10.4. Assessment of the Hypotheses**

H1 was supported: there was a clear resistance against sideways knowledge sharing, and the management preferred it that way.

H2 did not have evidence either way. There were quite a few concerns raised with regards to how much sharing between the factories was expected and how much was really happening, however, none of them were linked to the matter of ties. First of all, the units

between which one would expect the corresponding dynamic to take place, were too different technologically, and therefore little cooperation was possible even if they wanted to engage in it. Second, the unwillingness to spend time sharing knowledge was caused by the clash of priorities and the management's drive for the local KPIs to improve, rather than any particular issues related to sharing knowledge with colleagues from other factories.

H3 was supported by the issue of tweaking the forms and procedures in the system and the senior management getting upset about it: local KM portals managed by the factory staff were difficult to control, and the discrepancies kept appearing, creating tension all the time.

H4 was supported very strongly: there was a clear mismatch between the design and the purpose of the system and the way the company was managed.

H5 had no evidence for or against it.

H6 was weakly supported in the sense that the system was not perceived as anything frivolous, and it matched the strict atmosphere in the company, however, there was no evidence to say that this was a positive factor.

#### **5.10.5. Case Summary**

SandWitch Co., despite being a British company, produced evidence that differed in some dimensions quite strongly from Hofstede's descriptions. There were multiple examples of high PDI, high UAI and a fair amount of restraint. At the same time, it was clearly individualist and masculine, both in accordance with the predictions. The supposedly balanced LTO didn't manifest itself.

Multiple concerns were raised in relation to the non-participative implementation process that resulted in a system not seen as fit for purpose. At the same time, the idea of best practice sharing seemed to be in conflict with the values practiced by the management, and was only engaged in to the absolute minimum required by the management (Table 20).

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
High: the organization is Taylorist, mechanistic and 'vertical'.	Individualistic: self-preservation.	High: unification a priority.	High: 'hard' results valued above everything else.	No evidence either way.	Restrained: work hard, no place for fun.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
A strong concern. The system seen as unfit for purpose.	Absent.	The boss determining priorities and how much time to be spent on knowledge mngt.	Absent.	Absent.	Absent.	Absent.
Hypotheses Testing						
H1	Supported: resistance against sideways or bottom-up knowledge sharing, and the management preferred it that way.					
H2	No evidence either way.					
H3	Supported: there was a clear clash between the desire to keep the system unified and structured, and how it kept evolving locally.					
H4	Supported: there was a conflict between the system that was not directly targeting the KPIs achievement, and the company's values.					
H5	No evidence either way.					
H6	Somewhat supported: restrained culture matched the strict business-like feel to the system.					

Table 20: Case Summary (SandWitch Co., UK)

## 5.11. Case Eleven: Space Inc., USA

### 5.11.1. Background Information

Space Inc. was a large US-based Aerospace organization with a number of research centers spread across the country.

The data gathering for this particular case was unusual in two ways. First of all, the interviews followed a cold call – literally after an email sent to Space Inc.’s Chief Knowledge Officer introducing the research, a response came in two hours’ time. It was not from the CKO, but from another person in the team, R11a, to whom the CKO forwarded the email asking to get in touch and to see if they could be of any help. From there, some email communication and two interviews – from R11a and R11b, a scientist and a dedicated Wiki champion, arose.

Another noteworthy observation was that both R11a and R11b, despite the sensitive nature of Space Inc.’s business, were more than open about their practices and issues. The contrast with EnviroCorp that literally processesed other people’s waste, but was very careful not to disclose any details, was quite startling.

At the time of the interviews, the most actively used Web 2.0 tool in Space Inc. was a Wiki. It was initiated as a grassroots movement when the audience realized that there was a problem with collaboration and knowledge exchange, and was driven by a champion, R11b. A small budget was eventually dedicated to it, but according to R11b, *“management didn’t meddle”*; furthermore, R11a pointed out that their CKO was *“not a technology person”* and thought that the soft, people-related aspects should be taken care of first.

It must be highlighted that R11b used the expression - verbatim – “*management becoming more open to it*” rather than anything indicating active effort on their part. Although a seemingly trivial point, it is noteworthy if the previous history of Space Inc.’s Web 2.0 is taken into account (discussed in section 5.11.3).

### **5.11.2. Cultural Context**

This organization demonstrated signs of **low PDI**, which made an imprint on the way the Wiki was implemented, starting from the decision making process. R11b described it:

*“It was three years and a bit ago, when we had a series of meetings between O., one of our directors, and a group of young professionals, me included. It’s a standard Space Inc. thing, more or less. So we’ve had a few of them, and talked big picture at first, but then moved on to discussing what we, the young specialists, saw as issues. Things like recruitment and retention, something about the environment, and so on. But another one was about what could be done to assist the knowledge transfer.*

*The problem is, it’s not in the textbook; a lot of our work is at the forefront of, quite frankly, human technology and there are no textbooks that have it. And a lot of it is also tacit”.*

By that time R11b’s division, responsible for the microwave communication systems for spacecraft, had been experimenting with a Wiki as a collaborative tool for knowledge capture, and it was taken up by most of the department for sharing documents and the missions’ history, and how they solved one problem or another – but the department was only 30-strong. R11b shared the experience with O. and was asked to come back to the next meeting with a formal presentation.

*"At the beginning of the meeting I felt like I was just playing with it, following orders and doing a show-and-tell thing, and I thought that the management were just going through the motions of pretending like they listened to the young professionals, so when O. said let's go ahead and do it, I was frankly shocked, in a good way. Over the next couple of months we worked on the details and put a system together. It's been working for three years now. You'd expect bureaucracy, but sometimes people just see the problem, like when people are retiring and there's not enough engineers going into the technology... we know there's gonna be a crunch, and knowledge retention is a huge thing for us. Wiki looked promising as far as alleviating the problem was concerned, and people took it on".*

As it can be seen from the quote above, there was no involvement of the top management in the decision-making process apart from the one to go ahead, and the adoption was a grassroots movement because it seemed to the user community as something capable of solving problems they were experiencing with their day jobs. R11a described it:

*"The Wikis took off gradually, but there was a lot of a snowball effect when people realised that they were helping them to do the job".*

R11b was even more precise:

*"Some of it just happened – people heard about it. One of my managers heard I was working on it, and he suggested that I join the team working on the handbook [a combination of regulations and best practice examples for design and software engineers – PB]. That's one part. There's also a large push for people to have access to these tools. Budgets are getting tighter and the projects are getting more challenging, so there's a huge drive for collaborative things",*

and

*"Where is the drive coming from? Well, a mix of grassroots and the management becoming more open to it, really. It tends to democratize the interactions, like the ability for anyone in Space Inc. to make comments. Before, you'd have to submit it to your boss, then to his, and so on, and it would get sanitized and cleaned up for dinner. It used to take a lot of the value out of it; raw feedback is often much more valuable. Formalization scales back people's ability to do work".*

Building on the above point about dangers of formalization, it could be said that the organization was quite **comfortable with** a high degree of **uncertainty** unless safety and/or security were at risk. When a question was asked about the role of central governance, R11a said:

*"There's a fair bit of bureaucracy, with clearances and security, but people are intrinsically driven and enthusiastic about working for Space Inc., so it makes it a rather special case".*

As far as policies are concerned, there was one for information security, but it was all, reportedly, *"mostly common sense"* (R11a), and the overall idea was that Wikis should be approached in the same way as emails: one shouldn't post anything that one wouldn't share via email.

R11b described it as follows:

*"There is no clear policy as such, and every research centre has a slightly different one. At ours, there's more of own good judgement. People are willing to share, and they're quite open to give feedback and opinions within their own realm. We do have rules, but they're quite unclear".*

R11b also came back to the matter of structure later on during the interview:

*“Culture-wise, we’ve got a mix of formal and informal; there is some structure, some very well-established things with very formal procedures, but then there are some people, especially in R&D, whose life is a lot less structured and much more experimental. We work with both, and our tools are used by both. In general, the folks with more structure, they are more apprehensive, it takes more time for them to get into it and to have a good approach and a good process. The less structured people get into it faster”.*

As far as ties and **individualism** were concerned, R11b said that the degree of openness in knowledge sharing and consecutively, in the use of Wikis, varied between contexts. There was a degree of internal competition for funding between Space Inc.’s centres, which led to lower level of sharing between them; each of them, according to both R11b and R11a, were split into scientists and engineers, and although the relationships were amicable, there was little knowledge exchange between the groups, in the respondents’ view due to the difference in agendas.

It is important to point out that whatever resistance to sharing was evident (predominantly between centres), it was explained by a tangible competition for contracts rather than something like xenophobia or distrust.

The culture was also somewhat **feminine** with low degree of internal competitiveness, and a lot of intrinsic motivation (the desire to be, quite literally, a “*rocket scientist*” rather than striving for wealth or power) was mentioned several times, which could also be linked to a more indulgent culture (R11a):

*“It’s important to understand why people work for Space Inc. Most of us are basically geeks that grew up on Star Trek and Star Wars. We are happy to work here just because it’s our childhood dream. For us money or prizes don’t mean much. The*

*motivation is entirely intrinsic, and the job goes first, so if something makes it easier or better, that's the thing to do".*

Building up on the previous point, R11a was asked about any promotional activities such as competitions, targets, bonuses and so on. The respondent explicitly opposed the idea of any extrinsic motivation for the use of social media:

*"There is no R&R for using Wikis, and if we had something like that, it would make it worse for a number of reasons. First, and most importantly, there's the motivation part I've mentioned. Second, it would make everything too institutionalized, too formal, which would spoil the feeling and would go against the spirit of Web 2.0. If we ever decided to do something like that, it would have to be informal. No idea how you could do that. And another, third, thing is that remember, we're largely funded by the government. The funny thing about this kind of organizations is that if you run a competition, you have to do it in such a way that everyone gets a prize in the end, even if it's for something 'most promising', or 'most improved', or whatever. Pretty pointless, don't you think?"*

The attitudes of the user audience towards Wikis and their opinions were also explored. R11b said:

*"You get three different groups of people. Digital natives do it without even noticing. Then there are those who can see how it can be useful; they will make an effort. And then there's a group who are usually fine with technology in general – it's Space Inc., after all – but somehow can't see that communications aren't any different. Those are the most stubborn ones".*

Picking up on the apprehension point, reliability and quality control were brought up; in an organization such as Space Inc., where a cost of failure could be enormous, the reliability of

the information published is paramount (“*Some of our projects are, how do I put it, not small. It could be something like helping to put a human on Mars or to send Voyagers to the edge of the Solar System. We’re talking billions of dollars and centuries’ worth of man-hours*” – R11a).

R11b agreed with the point and said that they had thought about it. As a result, anyone could write an article, make comments and suggest improvements. At the same time, if it was to be published on the Wiki, it would have gone through an extensive review and verification process:

*“Yes, it has to go through at least three tiers of review – peer review by software engineers, the office of the Chief Engineer, and Agency review, so people from other disciplines. Any entry will easily have been reviewed by up to a hundred people. All changes and amendments are recorded and are traceable and retractable. So not everyone can just post everything directly, but you can submit ‘candidate improvements’ for the review”.*

Their Wiki’s home page contained a disclaimer saying that the information had been verified and endorsed by Space Inc. for accuracy. In R11b’s view, such approach represented a fine balance between tight control and open participation; everyone was encouraged to get involved, yet all contributions were peer-reviewed for factual accuracy. According to R11b, such approach not only met no resistance, but was actively supported by the user audience since it increased the system’s credibility.

### **5.11.3. UTAUT Constructs**

Performance Expectancy – the pragmatic value – was mentioned several times in various ways and came across as a very strong theme; both interviewees were mentioning “*a*

*problem it solves*" and "*practical benefits*". It was evident that practical considerations possessed primacy over the political ones; if a Wiki was seen as something that could make their lives easily, they would do it, with or without management's involvement.

Effort expectancy was named as a negative factor leading eventually to the demise of the previous social networking initiative called Starbook. It was launched in 2009, but failed to attract enough users, and in 2012 its closure was announced (this is a quote from non-classified internal memo shared by R11a):

*"Starbook was implemented in 2009 as a social network for civil servants and contractors to collaborate and share information. Unfortunately participation has not been as high as anticipated. On average, only 14 users log on per weekday and zero on the weekends. There are alternate internal social media tools, such as Yammer".*

R11a described it as

*"A social network driven by management. It was too clunky, and the early adopters who were already using Facebook, Yammer and that kind of things, didn't want to use because of how clumsy it was, and the non-adopters were even less fussed. There was no perceived need for it in the community, and the thing was driven from the top level without much engagement with users – no training or comms, and so on. The effort was abandoned eventually".*

There is a clear parallel with EnviroCom's case, whereby the first attempt at running an interactive portal was abandoned after multiple complaints about the system's imperfections. In both cases, the implementation was also attempted without much engagement of the end users.

It is worth pointing out that the social network and the Wikis were introduced in two distinctly different ways. The former was introduced by the management for all the theoretically positive reasons – i.e., to increase the level of collaboration and knowledge sharing – and failed, yet Wikis, initiated by the rank and file, and developed without management involvement, was received much more positively. However, although R11a alluded several times that the Wiki was very specifically designed to suit their jobs and to make them easier, which undoubtedly was a positive factor, it could also be suggested that the Wiki not coming from the top management might have played a positive role.

#### **5.11.4. Assessment of the Hypotheses**

H1 was supported in a number of ways. First – chronologically – the decision to run a local Wiki was made at a division's level without any involvement from the senior management; they simply found it useful and decided to keep it. Furthermore, when it was raised by a fairly junior scientist, a director bought into the idea, but even then did not 'meddle', and the process continued as a grassroots movement, but with the management's endorsement. This approach, similarly to the way it happened in EnviroCom, seemed to match the (low PDI) culture much better than the failed Starbook.

H2 did not have any strong evidence either way associated with it; there were no signs of collectivism or individualism, either. There was a degree of openness, but the circumstances sometimes dictated a more closed approach. It can only be concluded that against an IDV-neutral behaviour, H2 becomes somewhat irrelevant.

H3 was supported. There were quite a few examples where the preference for a low degree of structuredness was matched by the Wiki, e.g., the way the submission and review process worked, or their approach towards R&R, or security policy that was "*mostly*

*common sense*". Furthermore, one of the respondents made an observation that Wiki worked better in R&D, where little structure was evident, than in more structured engineering, which is an interesting point related to the occupational culture within the same organization.

H4 was supported in its feminine form, mostly through the intrinsic motivation point mentioned above.

H5 had no related evidence.

H6 was supported by the Wiki, unlike Starbook, deliberately given an image of a grassroots initiative, which matches the less restrained culture better than something very strict and promoted by the business.

#### **5.11.5. Case Summary**

This low-PDI, uncertainty-tolerant, feminine and indulgent case provided a few insights into how a Wiki might work in a place where intrinsic motivation prevails. It was more similar to MobiCorp than any other cases, which is an example of organizational similarities transcending the national borders (Table 21).

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Low. Wikis as grassroots tools.	No evidence either way.	Low, as and when security and quality assurance allow.	Feminine. The workforce is strongly intrinsically motivated.	No evidence either way.	Somewhat indulgent.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
Probably the strongest determinant.	Was identified as the main reason for getting rid of Starbook.	Overtaken by Perf. Expectancy.	Absent.	Absent.	Absent.	Absent.
Hypotheses Testing						
H1	Supported: the sideways knowledge sharing with no management involvement was initiated at comparatively low levels and continued in the same manner even after the management endorsed it.					
H2	No evidence either way.					
H3	Supported: a match between the unstructured Wiki and the unstructured nature of the work carried out.					
H4	Supported: wiki as a platform to realize one's intrinsic motivation.					
H5	No evidence either way.					
H6	Somewhat supported: a grassroots image worked well.					

Table 21: Case Summary (SpaceInc., USA)

## 5.12. Case Twelve: EnergyConvert, UK

### 5.12.1. Background Information

This case was less informative than others for an organizational reason: at the time of the interview the company was going through the process of being acquired by a much bigger multinational conglomerate, and the interviewee, despite a long-time association with Lancaster, was visibly stressed out and anxious about the future. The respondent was able to provide some general remarks about their KM 2.0 experience, but could not go into more detail. The half-hour interview took place in the Company's office in Midlands. Despite its brevity, however, there were several points worth mentioning.

The Company, before its acquisition, was building 'power solutions' - e.g., power generators, motors, inverters, and so on – for large-scale applications such as oil rigs and super-tankers. It had presence all over the world, with expertise centres located in various countries such as France, India, Russia and a few others.

This posed a challenge in the sense that although the expertise existed in the company, it wasn't necessarily at the point where it was required – i.e., if an Arctic oil rig went down causing downtime losses in the region of tens of thousand pounds a day, the expert able to help might easily be based in Bangalore. Furthermore, *knowing* where it was, posed another challenge; although sharing knowledge between engineering centres was unproblematic as such – there was no competition or any other reasons to withhold expertise – finding out who knew what was very difficult.

Furthermore, the lifespan of a big energy installation is measured in decades – quite a few machines on the company's service list were designed and built up to sixty years ago, and

the documentation, although apparently in good order, was all in paper-based format and stored in a physical library in, again, Bangalore.

The challenges listed above were persistent, and had been around for a while. Going as far back as early nineties, the European engineering division's middle managers became preoccupied with them, and started looking for potential solutions.

Although chronologically it pre-dated the advent of Web 2.0, what they came up with was a Wiki-style database with interactive open access. It was deployed as a mid-management initiative first in Europe and then globally, and eventually became popular within the global engineering community, enabling service engineers either to find an existing solution, or to ask a question and/or leave a record about a new solution making sure that in case of a problem re-occurrence it would be re-applied. There was neither hindrance nor significant support from the company's top management; the system in its original form was decommissioned in early 2000s due to its technical obsolescence, however, its successors were still up and running.

The issues that the system was supposed to address were still present, but they were inherent to the company's business model, and all the system could do was helping engineers cope with the circumstances the best way possible.

### **5.12.2. Case Analysis and Summary**

This case was too brief to provide as much evidence as others did, however, a few valid points could be highlighted. The only thing that could be said about their organizational culture with a certainty was that it was low on **power distance**: the middle management was taking decisions autonomously, and like in the case of Space Inc., senior management didn't meddle.

There was a rather concrete problem that the system was addressing, and R12, the interviewee, pointed it out, unprompted, as one of the key success factors. The top management didn't interfere, and the initiative came from the users. There was little resistance to sharing knowledge, and the barriers they were encountering were caused predominantly by the logistical constraints.

H1, the only hypothesis relevant to the case, was supported by the 'grassroots' nature of the system and the very essence of it being all about sideways knowledge sharing without any management involvement. The findings from the case are summarized in Table 22.

Cultural Background					
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint
Low.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.
UTAUT Constructs					
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy
Probably the strongest determinant.	Absent.	Overtaken by Perf. Expectancy.	Absent.	Absent.	Absent.
Hypotheses Testing					
H1	Supported: a grassroots initiative addressing a pragmatic issue and driven by the middle management.				
H2	No evidence either way.				
H3	No evidence either way.				
H4	No evidence either way.				
H5	No evidence either way.				
H6	No evidence either way.				

Table 22: Case Summary (EnergyConvert, UK)

## 5.13. Case Thirteen: The Business School, UK

### 5.13.1. Background Information

This case refers to the use of an interactive platform – IBM Connections – in a university, but in clerical departments rather than as a VLE. The interviewee, R13, was its IT Director.

The implementation decision was made six years before the interview as part of the program for the enhancement of the IT offering, and IBM Connections were included into it. It is important to point out that the decision-making process resembled that of SandWitch Co., in the sense that it was detached from the user audience. Their engagement did not come across clearly in the interview; although R13 referred to a few relevant points, no evidence was given even when prompted.

The adoption went slow at first; there were questions about whether it was helping to do the day job (again, the same question as in some previous cases of whether it solves a problem) or was “*just another tool*” and how it would fit with other systems. The way the implementation team dealt with it was to put more emphasis on communication, engagement, training and support (Facilitating Conditions in UTAUT terms) as well as “*community management*”, i.e., more active hands-on activity facilitation (akin to using super-users and champions like in some other cases), with their gradual withdrawal.

Although the interview had a distinct IT flavour to it, and most answers were leaning towards the software deployment side of the matter, it was acknowledged that the ‘softer’ side of Connections was quite important, e.g. “*It cannot be managed as a mere IT project, there’s much more to it*”.

R13 also pointed out that they were getting ready to implement the next version of Connections, paying especial attention to making it "*look less IBMish*" - the off-the-shelf appearance was considered to be an off-putting factor.

The overall impression from this case was mixed: on one hand, the reported level of user adoption of the system was a good indicator that the implementation was successful, or at least matching what R13 saw as such. At the same time, it was noticeable that R13's responses were quite generic in terms of the softer, behavioural side of the matter; the technical side prevailed, as in an information security-related example: "*knowledge sharing is OK, but setting up the firewall is a real difficulty*". There is no evidence to suggest that this was *not* the real case; it is, however, a strong indicator for the technocentric perspective being prevalent.

The rhetoric surrounding the softer aspects was quite vague – "*engagement*", "*good leadership*", "*hands-on*" and so forth. R13 couldn't provide much concrete examples of how the non-IT audience was using it, what were the 'softer' barriers, if any, what were the problems that Connections solved, which according to R13 was the reason why the implementation was successful, and so on. R13 refused to commit to wider participation in the research because if wasn't "*the right time*".

Regardless of this, the list of factors that the organization considered important remains valid and relevant: pragmatic value of the system, facilitative approach, participatory leadership and importance of training and communication.

### 5.13.2. Cultural Context

This case was notable in two ways: the PDI and its influence on how the implementation had to be done, and the Performance Expectancy-related issue that emerged.

As far as the PDI is concerned, there were several references made to anything perceived as coming from the top, being driven by the management or even just having too much management involvement, being rejected by the workforce. This is a sign of a very low-PDI behaviour; what it meant for the IT-led implementation project was that it had to be made to look as if it was led from within, almost concealing the management's interest in it and not exercising managerial control openly. R13 described it:

*"We've had to put some people in, to keep discussions going. Gradually more and more people got into it, so the facilitators didn't have to do quite as much. The trick was not to make it too obvious, too staged-looking, that would kill it".*

As a consequence, the University's top management deliberately tried to keep their involvement at a participative level, e.g., actively blogging rather than giving any directions or taking part in promotional activities.

R13 said:

*"A push simply wouldn't work. People would disengage, so the only possible way is to lead from within, giving them little nudges through peer facilitation all the time, then it might happen".*

Simply ordering people to use social media was not perceived as a way forward, however, R13 didn't suggest going to the other extreme and letting adoption emerge by itself like in MobiCorp or even, to a degree, EnergyConvert; instead, the perceived best way was for the management to play an 'invisible hand', orchestrating the developments behind the scene.

Collectivism-wise, there were no major issues with sharing knowledge with the wider audience, however, there was a technical problem with levels of access and various permissions:

*“...the University is a very open environment, we’ve got a lot of people coming from the outside, you know, contractors, visiting staff and so on, and it’s difficult to draw the line and tell who should be on which side of the firewall. People just move in and out all the time. It goes towards policies and procedures, too – you’ve asked me about the house rules, and they’re in general along the sensible discretion lines, but how to enforce them when external people are in the equation too, is not very clear”.*

According to R13, this was a conundrum since the management, in a high-UAI fashion, wanted to maintain as much control over the matter as possible, however, imposing any rigid control measures would stifle the social media effort because *“social media must be open by default”*. An instance of a very similar, if not absolutely the same contradiction, could be found in the shift from how the decision was made, i.e., in no consultation with the users, to how it ended up being managed: somewhere soon after the decision was made, the organization realized that keeping to a high-PDI style would not work with their workforce.

No other dimensions manifested themselves with clarity.

### 5.13.3. UTAUT Constructs

The **Performance Expectancy** point continues a theme present in most Anglo-Saxon cases, namely that of the pragmatic value. The decision to use Connections was made as part of *“widening the IT product offering”*, i.e., bundled up with a number of other IT systems and

software that was delivered to diversify the range of what could be used in the University's clerical departments. This, however, was the only articulated reason, and once the system was rolled out, the biggest challenge received from the recipients was questioning whether - and how - it was helping them do the job. The issue was eventually solved by ramping up an "*engagement campaign*", but it remains quite indicative that when a system was offered simply because the IT though it was something that would help to diversify their portfolio, it did not work well.

#### **5.13.4. Assessment of the Hypotheses**

Of all hypotheses, H1 and H3 had the most evidence: low-PDI workforce not accepting something that was being pushed through by the management and preferring the Web 2.0-related processes to be done 'sideways', and the conflict between high-UAI behaviour of the management and the openness of the social media.

It is a yet another example of a trend whereby the pragmatic value, in a low-PDI environment, overpowers the political trends, such as pleasing the boss, as it was seen in other high-PDI cases.

### 5.13.5. Case Summary

The findings from the case are presented in Table 23.

Cultural Background					
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint
Low. Rejection of initiatives pushed from above.	No evidence either way.	Some uncertainty-avoidant behavior from the management.	No evidence either way.	No evidence either way.	No evidence either way.
UTAUT Constructs					
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy
A strong point; audience challenging the usefulness of the system.	Absent.	Could be trumped by Perf. Expectancy, but measures were taken.	Absent.	Absent.	Absent.
Hypotheses Testing					
H1	Supported: the sideways implementation mode required by the workforce matched their low-PDI behaviour.				
H2	No evidence either way.				
H3	Supported by the high-UAI management having issues with the openness of Web 2.0				
H4	No evidence either way.				
H5	No evidence either way.				
H6	No evidence either way.				

Table 23: Case Summary (The Business School, UK)

## 5.14. Case Fourteen: Planes'R'Us, UK

### 5.14.1. Background Information

Planes'R'Us was one of the world's largest civil aircraft manufacturers; their aeroplanes are widely used by the biggest airlines across the globe.

The Company's KM approach was very structured and was dating back to the pre-Internet days, meaning effectively that a lot of the KM techniques were in use before even the concept itself became commonplace.

In a way it was explainable, similarly to EnergyConvert, by a long product service life (ca. 30 years for a typical airliner); for example, the highest-volume aircraft family was initially developed in late 1960s, and its updated versions are still being built today; thus, some of the original documentation is fifty years old, with most of its authors at least retired.

Because of this, the Company had a variety of systems and procedures, a KM strategy, and a dedicated internal KM consultancy team, which was part of the HR division. One of the two interviewees, R14a, came from this team; the other one, R14b, was a mid-level manager in the so-called Developmental Projects division, which was the group working on projects like the current aircraft replacement.

The notable and somewhat unusual side of Planes'R'Us's KM, which has a direct link to the social media's use in it, was that the social, human-related side of it, was given more importance than the systems' one. This could be due to KM being seen as an HR-related area, or quite possibly because of its aforementioned history, i.e., the idea becoming widespread in the company before the facilitating IT systems became available.

R14a, the internal KM consultant, pointed out:

*"The customers are pushing towards more online solutions, however, all we can say to them is that good tools are hard to come by, and SharePoint, for example, which is heavily promoted by Microsoft, is still very document-driven rather than accommodating the social side of things. Face-to-face exchange is way more effective, and IT solutions are robbing it of complexity and the tacit dimension".*

And

*"We know for a fact now that whatever you are trying to put in place – communities of practice, for example, or Wikis, of which we have about two hundred now, will only work well there there's already an offline community. In other words, the technology can facilitate what you already have, but it won't create anything new as such. If you try to drive KM-related change with it, from our experience you've got no chance".*

#### **5.14.2. Cultural Context**

Based on the interviews, this company's culture could be best described as *traditional*, rather than anything in Hofstede's terms: hierarchical, but not oppressive – described as "quite open" by R14b despite the importance of information security and high degree of regulation. The business was broken down into a typical set of divisions; it was unionized, but not militantly; giving a lot of importance to the matters related to information security, but doing so because of the nature of their business. The only dimension that had some strong evidence for it, was **Femininity** which manifested itself in how important the KM's human dimension was perceived to be, and how institutionalized this approach became over the years. The 'soft' side of things was clearly given absolute primacy, with systems seen as a mere enabling means.

According to R14a, some rigorous academic research had been carried out (published in a peer-reviewed journal that cannot be disclosed here for anonymity reasons). Nine knowledge managers in Planes'R'Us “*received a list of underlying causes for those barriers [and] were asked to assess the relevance of those for Knowledge Management projects*”. It had not been revealed how the list was developed, and the final scores are a simple average. Regardless of this, the article’s conclusions were brought up and corroborated several times during the conversation, and given that they represent opinions of nine Knowledge Managers in the same organization, they are worth summing up briefly.

The bottom-up approach is deemed “*not only typical but also necessary to achieve the desired success*”. The successful Wikis still receive strong support from the management, not stifling, however, its bottom-up nature (similarly to Space Inc.); Wiki champions are used very actively; visual attributes such as logos and mascots are important (note similarity with EnviroCom and The Business School).

The article suggests *assigning* roles to Wiki participants, acknowledging at the same time that their open nature must be maintained. In order to keep the Wiki alive, it is proposed that its usefulness is re-emphasized every so often (again, the typical Western ‘what is the problem that it solves’ question), including “*the importance for personal career*”, which is a clearly **individualist** feature. Increased efficiency and facilitating interpersonal communications are also mentioned.

Looked at from a Hofstedian point of view, the article sheds some further light onto the company’s culture. From the **PDI** point of view, there is a mix of typically high and low power distance examples. There is a strong preference to keep Wikis a bottom-up phenomenon, with the use of Wiki champions (a parallel with The Business School), however, the ‘bottom-up-ness’ of it is supposed to be limited: the management are still expected to be assigning roles as well as maintaining the responsibility for providing

support and communications, the latter including “emphasizing the usefulness” (sic!) and the importance to one’s career.

An interview with R14b highlighted an important UAI-related point. One of the challenges they were facing was struggling with breaking free from the current paradigm. In R14b’s view,

*“Our challenge is that if you cut a wing open and show it to a 1960s aircraft design engineer, they will recognize it straight away. It will be lighter, cheaper, more reliable and perhaps even partly made of plastic. But it will be the same wing as fifty years before, only better, and we think that the traditional design is exhausting its potential for further development. So how do we facilitate a step change? How do we get people to stop thinking within the traditional aircraft engineering paradigm?”*

R14b was expecting that the nature of KM 2.0 could help them make this step change:

*“The problem is that all our KM systems, great although they are, are only suitable for storing and processing codified knowledge. You know, the explicit one, and there’s very little, if anything, to tap into the tacit dimension, at least online. We’ve got CoPs and things like that, they ensure face-to-face communication and there’s some tacit exchange, but it’s not enough, and it’s the twenty-first century, after all.”*

i.e., the high degree of uncertainty was seen as something that could potentially help the organization to break the mould. Whether it would fit the otherwise structured organization, was not clear.

### **5.14.3. UTAUT Constructs**

**Performance Expectancy** – in its pragmatic value form – was mentioned a few times and was the strongest factor, just like in other cases with a low-PDI trend. The company was clear about what issues they were facing in terms of organizational knowledge, and not only how KM was going to address them, but also what issues it was *unlikely* to be able to solve.

No other constructs manifested themselves.

### **5.14.4. Assessment of the Hypotheses**

Of all hypotheses, H1 was supported (neutral PDI matched by a balanced approach to Wikis implementation). H3 could be said to have some support, too: there were some indicators of an individualist culture, and the article discussed above referred to the importance of emphasizing the personal benefits as an argument in favor of using Wikis. H4 was also supported (feminine values reflected in their stance towards KM 2.0).

### **5.14.5. Case Summary**

This case is another instance of the pragmatic approach seen in a number of other examples. The case is also noteworthy in the importance the company was giving to the people-related side of the matter, not dissimilarly from Space Inc., and it has been identified that the role of the technology is secondary.

Cultural Background					
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint
Mixed. Hierarchical, but not commanding.	Some evidence found in personal motivation to use Wikis.	Generally structured and proceduralised, however, there is some evidence for the desire to 'break the mould'.	Feminine, based on how important they think the people side of KM is.	No evidence either way.	No evidence either way.
UTAUT Constructs					
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy
A strong point; the reasoning is very pragmatic.	Absent.	Absent.	Absent.	Absent.	Absent.
Hypotheses Testing					
H1	Supported: neutral PDI matched by a balanced approach to Wikis implementation.				
H2	No evidence either way.				
H3	Supported weakly: some individualist indicators matching a suggested approach towards motivating the participants.				
H4	Supported: feminine values reflected in their stance towards KM 2.0.				
H5	No evidence either way.				
H6	No evidence either way.				

Table 24: Case Summary (Planes'R'Us, UK)

## 5.15. Case Fifteen: ConsultiComp, US/UK

### 5.15.1. Background Information

This case was represented by three respondents: two from the US and one from the UK.

The company was one of the world's largest consultancy firms, providing services in a wide variety of areas from accounting and finance to science and technology, and including a large array of business and management ICT, which also covered social media. This included their own corporate social media platform, project management support at the implementation stage, social media strategy consulting, and so on.

The three respondents were R15a, a Senior Social Software Product Manager (dealing with the more strategic side of product development – i.e., the ideology and the fundamentals of its functionality, rather than actually writing the code), R15b, a Social Media Consultant, both from the US, and R15c, a UK-based senior HR manager. The Americans provided some insights into the more top-line issues related to social media, whereas the British respondent, involved into embedding a Web 2.0 platform into his extended team's day-to-day work, could talk about the practical details.

Given that R15c was describing an actual process, it would be easier to discuss ConsultiComp's case based around this interview, referring to the remaining two as and when necessary to generalise it and expand its scope.

R15c was an EMEA Payroll Manager based in Newcastle. They started using the interactive platform in the team about half a year before the interview took place in March 2013. The purpose of it was to simplify reporting (to have a dashboard instead of a multitude of

emails) and to share knowledge/answer questions, with as much visibility as possible. R15c identified “*saving the time*” as the biggest reason:

*“I've got a few dozens of people working for me, and I need to know what's going on and where. I could get all the info I need via emails, and that's the way we used to do it, but you can imagine how many of them I would get, so I'd have to just keep trawling through them all day long instead of actually doing the job. Besides, it would all be fragmented and only visible to me, and I don't have the time for pulling it all together to make it visible to everyone else, and frankly, it's not my job. A dashboard where everybody would put their figures and whatever other knowledge we needed to share, was a natural solution and a big time saver”.*

The picture R15c described in relation to the reasoning was quite consistent with other Anglo-Saxon examples analysed: there was a business problem (lots of emails and the ease of getting lost in them), so they wanted to automate it and to make it more transparent for everybody.

The process of getting people involved in all cases consisted of R15c assigning a task via email, setting up “*an environment*” (a dedicated portal) on the system and explaining via emails how to do it. In this respect, little freedom to choose the tools was given to the target participants – people were expected to use the platform no matter what, but from there on it was fairly free of control. R15c saw his role as more that of support and guidance rather than telling people what to do, as long as the basic requirements (which system was used, for example) were adhered to.

The uptake was satisfactory, although R15c said that it was “*...still early days, and there's still some work to do in terms of convincing people how useful it is*”. The second part of the sentence contains another example of the pragmatic approach as well as an indicator of the management style involved: *convincing people how useful it is*, that is, using its practical

value as a selling point, and trying to get people on board rather than simply giving orders as it was evident in a few Russian examples.

R15c pointed out, however, that there was a generational gap between those who are used to social media, and those who aren't, and thus see it as "*another thing to do and another place to check*", and "*don't see the difference between what it's used for in the organization and just Facebook*".

As far as the generations were concerned, another respondent, R15b, the social media consultant, brought it up independently, so it would appear that the issue is prominent in the company.

### **5.15.2. Cultural Context**

From the PDI point of view the organization appeared to lean towards the low side of the scale; there were many examples whereby the top management was not 'meddling' in the day-to day activities as long as the general pre-agreed principles of running the business were adhered to. Furthermore, this state of affairs was seen as desirable: for example, one of the respondents had said that as long as the line management was showing their approval towards the use of social media, their role was considered fulfilled, and the rest (leading by example, again, something far from giving directions) should be coming from the top management.

It is noteworthy that this, and a few other points, was identified as subject to the generational gap: the older stratum in the company was more comfortable with the directive management as well as seeing knowledge as a source of their own competitive advantage (yet again, a link between high-PDI style and the knowledge-is-power syndrome is evident). In contrast to the respondent from the Russian bank who said that it was

understandable that some people would not share knowledge because it was their “*bread and butter*”, the attitude towards it shared by all three respondents from ConsultiComp was that it was “*rubbish*” (R15a) and an obsolete view; R15a related his recent career acceleration directly to how much visibility he gained by actively engaging in knowledge sharing on the Company’s social media platform.

In relation to the role of the management in the social media deployment, R15c said that he himself played a role of a super user and/or champion (as it was mentioned at the beginning of the case, R15c was responsible for setting up the portal and provided all explanations and coaching).

R15a, the product manager, in response to the same question said that the role was “*extremely important*”, but it turned out that it meant seeing the usefulness of social media and providing enough support, rather than pushing it along:

*“Here in the US some managers for some reasons, they don’t buy into it. Their people might really want to engage with it, but because their managers don’t, they have to convince their colleagues and managers to get them to use the software. Typically what I find is that the middle managers, they’re all good for it because they see how employee productivity increases. Where it gets tricky is the more senior managers, like, three levels up, because their jobs are about bringing together different departments, different teams, different business units, and with social media it becomes difficult to keep a direct and meaningful contact with them”.*

R15a, similarly to virtually all other Anglo-Saxon respondents, thought that realising how useful social media was for productivity would be enough for a manager to support it, and the ones ‘three levels up’ simply didn’t have enough direct clear contact with the people

involved. It is also noteworthy that the initiative for the use of social media could come from below even despite the lack of support from the management.

At the same time, R15a didn't think that the line management actually had to be involved:

*"To be honest, I don't think in general that the line managers' engagement is that important. It's the c-suite's engagement that really matters. The line manager needs to approve of it, but they don't have to be engaged. Employees need to know that they're doing something that is approved, that's part of the corporate culture, something that the company is expecting their employees to be doing".*

This example shows that leadership by example should, in the respondent's view, come from the very top of the organization, which would also signify that social media was part of the corporate culture. This situation described very accurately Space Inc.'s case whereby "management didn't meddle", but the Wiki initiative was sponsored by a highly-ranked director.

There were some signs of **individualism**, i.e., a high propensity to use weak ties, which was practically institutionalized in the company and was explained by its size and the impossibility of relying on strong ties alone.

As an illustration of the knowledge sharing dynamic in an individualist environment, R15b said that there were few organizational barriers, and people were establishing links quite freely as and when needed:

*"It's part of the culture in the company that it's perfectly fine to talk to someone you don't know, and it's been like that before the introduction of the social media – after all, the company is so big that it's absolutely impossible for you to know everybody you'll ever need to talk to. So it's acceptable to reach out to people that you don't know, and it's sort of encouraged".*

As far as the community rules were concerned as well as the level of trust and people's feeling of anxiety about collaborating on social media with someone they did not know personally, R15a said:

*"Never given too much thought to that. I usually go through the person's profile to know who they are before responding to their posts or blogs. Quite frankly, if it's a simple employee like myself, I would have fewer concerns about what I write, whereas I am about to comment on a blog by a vice president, I'll be more careful about the words that I use and the grammar, and everything else. But other than that... I just basically look them up like who they are in the hierarchy and so forth, that's my personal way of doing it, but as I said, I haven't given it that much thought".*

It was also said that the company's performance management processes were highly individualized.

**Masculine** values were referred to twice: one was the aforementioned link between one's career progression and the use of social media, and the other one, discussed with a lot of passion by one of the respondents, was the importance of the right (team-based, in his view) performance metrics to be in place (R15b). If it is taken into account that R15b was American and the US scores higher-than-average 62 points in MAS, it would match the theory-based predictions that the reason for knowledge-is-power attitude was seen in the way employee performance was measured:

*"...they say something like it's because my work is designed in such a way that I am recognised on the basis of the individual performance, not the performance of my team. So when you go and talk to people about their annual appraisals, they'll tell you that the only criteria they've got there is how good are you as an individual.*

*So when people ask me how I think social media adoption could be made even more successful, I always say to them that social media receives a lot of attention from the IT, marketing, communications and so on, but there's one function that stops it all, and this function is HR. So unless we change the way HR is measuring people, the way we recognize people, we're not gonna go anywhere".*

It is worth pointing out that NaviSoft, Planes'R'Us and EnviroCom, all of them successful in their social media initiatives, all had HR actively involved.

The absence of the desire to structure and control the social media, and the expectancy that the system would self-control itself, are the signs of low **UAI**, matching the cases of EnviroCom and Space Inc., all of them quite successful. By R15c's account, ConsultiComp did not force much managerial control over what was happening on portals: there was little special policy for what could and what could not be said on the portal, although in Payroll there was a number of general information security policies because of the nature of what they did, and it included various levels of access and a facility for reporting any breaches. At the same time, R15c said:

*"You can't control what people say, and they will say it anyway, if not on the portal than somewhere else – either in an email or just verbally, so there's not much point in introducing any additional measures for the social media. Even if someone 'spills the beans' – you know, does something inappropriate online – there are other users who understand the community rules better who will engage in the discussion and will make comments about it, so the system has a large degree of self-control in it".*

This last sentence resonates very well with EnviroCom's example of a disgruntled foreman who got 'corrected' by the online community.

There were no instances related directly to LTO; IVR, however, was mentioned almost directly, in connection with the aforementioned generational gap: apparently, the older generation could not see the difference between the company's portal and "just Facebook", and was thus reluctant to use it for business purposes because people "want to maintain that differentiation", but the distinction was said to be artificial, i.e., that of image rather than of anything more concrete.

### 5.15.3. UTAUT Constructs

By far the strongest factor mentioned countless times in all three interviews was **Performance Expectancy** in various forms, from solving a tactical problem, to addressing a strategic issue:

*"If you are asking where is the money, you're asking the wrong question, because you're asking how you're going to measure means, not ends. So the real question is what are you trying to get out of it?"*

And

*"80% of the social media initiatives fail. Because they didn't ask the question why. Why are we doing it? What am I trying to get out of it? Not how to do it, not how much money you'll get out of it. What is your problem that social media will address? And when I talk to people, they always say they don't have business problems. So why the hell do you bother, if you don't have problems?"*

and even helping one to get a promotion. R15b touched upon it when he was talking about the knowledge-is-power syndrome:

*"It's 2012, but people still live by that, which is rubbish. Knowledge per se is not power; knowledge SHARED is. The more helpful you are, the more available you make yourself to share, to collaborate, to innovate, the more valuable and indispensable you are. So we as knowledge workers, our jobs are to connect the dots, different people, silos, you know, and when I talk to people about it, they all say well, that's exactly how I use my personal network. So then my next question to them is, so what's stopping you from doing it in your professional life as well?"*

R15a, the product development manager, independently made virtually the same statement:

*"At the beginning, I was quite cautious about sharing knowledge; I was thinking that if I tell people everything I know, the company will get rid of me, because they won't need me, they will have all the knowledge that I've had. In reality, I found that the opposite was true: the more actively I engaged with the social network in the company and the more I blogged openly, the better was my career going. In fact, I got promoted twice in the last couple of years, and I think it was specifically because of how I am engaging with the social media and how much more visibility I've got. Because before, only few people knew me, and now, because of all the transparency that the social media provides, I've got executives from all over reaching out for me..."*

This is point contrasting with the high-PDI examples very strongly.

**Effort Expectancy, Facilitating Conditions and Self-Efficacy** were touched upon when the generational gap was mentioned, but quite generically so and mostly alluding to the 'old-timers' finding it difficult to find their way around new systems.

The **Social Influence** was another strong point, in the sense that it was clear that the company was actively encouraging the use of social media, and that the preferred role of the senior management was seen as leading by example.

#### **5.15.4. Assessment of the Hypotheses**

H1 was supported. In a low-PDI environment, the control over what was happening on a day-to-day basis firmly belonged to the 'troops', the management did not interfere, and the decision to use social media could come from the lower levels of hierarchy, similarly to EnergyConvert and Space Inc. Unlike the high-PDI examples, the primary purpose of Web 2.0 was seen as a free exchange of information and knowledge between the peers.

H2 was supported: there were a few instances of the preference for weak ties.

H3 was strongly supported: the very low amount of pre-determined structure and rules was seen as stimulating the use of social media.

H4 was supported by one respondent identifying the wrong performance measurement procedures (a strongly-MAS consideration) being responsible for 80% of Web 2.0 failures.

H5 had no relevant evidence.

H6 was supported by the discussion of the generational gap in views on social media as just fun vs. a business tool, and the willingness to use it in a business context.

### 5.15.5. Case Summary

This case has proven to be exactly the way it could be expected from Hofstede's numbers for an Anglo-Saxon environment, with an exception of inconclusive LTO: low-PDI, individualist, masculine, uncertainty-tolerant and indulgent.

Most of those could be traced to one aspect of their social media's success or another (Table 25).

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Low; multiple examples.	Highly individualist.	Uncertainty welcomed.	Strong MAS values.	No evidence either way.	Somewhat indulgent.	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
A strong point; the reasoning is very pragmatic.	Seen as a problem with the pre-retirees.	Did play a role, albeit in a low-PDI fashion.	Seen as a problem with the pre-retirees.	Absent.	Seen as a problem with the pre-retirees.	Absent.
Hypotheses Testing						
H1	Supported: multiple examples of knowledge exchange happening within the same organizational level.					
H2	Supported: several examples of acceptance and preference for weak ties.					
H3	Supported weakly: some individualist indicators matching a suggested approach towards motivating the participants.					
H4	Supported: the mismatch between individual performance measurement traditions was identified as a problem in relation to the team-based achievement.					
H5	No evidence either way.					
H6	Supported, although the generational differences in the IVR preferences also means the hypothesis effectively takes opposing forms for younger/older generations.					

Table 25: Case Summary (ConsultiComp, US/UK)

## 5.16. Case Sixteen: AgriCo, UK

### 5.16.1. Background Information

AgriCo was a medium-sized (four major manufacturing sites) UK-based company processing locally grown vegetables for bulk ingredients or (in much lower quantities) retail. Their case was similar to that of SandWitchCo. not only because of the industry they were both in, but also because of the link between SharePoint, which was the system they used, and a Kaizen initiative. In their case a Six Sigma programme launched in 2010 was the *main* driver for the implementation, since they realized that a solution would be needed to manage the programme and the knowledge it generates, especially because, similarly to SandWitchCo, they were planning to replicate and re-use good practice between sites.

In a way, SharePoint's implementation was overshadowed by Six Sigma's progress. Although the system was used in some other departments for different purposes, such as documentation management, the more advanced use was restricted to Six Sigma, and it was seen as a dedicated tool which would eventually spread throughout the company with Six Sigma becoming a way of life. In this respect, SharePoint shared the same ups and downs and the improvement program.

The company was committing a significant amount of resource to it, hiring and/or training Black Belts, seconding or promoting the shopfloor workforce into Green Belts, sending senior management to Six Sigma workshops and investing into IT specialists and infrastructure. At the time of the visit to one of their sites and the first interview, they were finishing the pilot phase, with a number of successful projects completed, and getting ready for the full roll-out.

The projects were the main sources of the knowledge database's content, and it was put in virtually exclusively by the Green Belts (project coordinators at a production team's level). There was practically no autonomous activity among the workforce, but this was expected, if not intended. R16, a Black Belt, said:

*"Well, you know how these things go – it's all got to be driven a lot by the facilitators at the beginning. They do most of the work, and train the others how to do it. With a bit of luck, we'll see things starting to come through from the rest, but it's early days so far".*

As far as the expectations for that particular stage were concerned, the progress was going to plan. Green Belts were selected based on their loyalty and demonstrated enthusiasm towards Six Sigma, and mostly saw it as an advancement opportunity (they were often seconded from shift management positions). There was no lack of KM uptake from them, although it was clearly related to the program as a whole rather than SharePoint in particular. The progress was managed by the Black Belts, and the senior management did not go into too much detail. Some improvement projects had already been successfully completed, and the views on the program's future, and by inference, that of SharePoint, was quite optimistic.

Since those were early days, R16 was contacted again almost exactly a year after the first interview to find out how the system was developing. It turned out that although Six Sigma was progressing well, SharePoint was "*put aside for now*". When asked for more details, R16 said:

*"It just turned out not to be fit for purpose. We wanted it to be a platform that would allow us to manage projects and whatever knowledge comes out of it, but it doesn't do it particularly well. It's basically just a fancy file management system, so my boss and his peers have made a collective decision to mothball it. There are talks*

*about a more advanced version of SharePoint, or maybe not a Microsoft product at all, I'm not sure, I don't know all the details, but for now we're not using it anymore, and it's just the old system that we've got. Not great, of course, but OK for now".*

Unexpected as this development might have been – after all, the company did put a significant amount of resources – time, money, program's reputation – into it, the decision was clearly pragmatic and made on the basis of fitness for purpose. When a gap became evident, the company decided to divest, and the choice was made without much political or emotional influence. It was seen as a tool that was not helping to drive the program, and it was made redundant.

Importantly, the feedback that the decision was based upon, came from 'below', that is, Green Belts and project teams.

### **5.16.2. Case Analysis and Summary**

This comparatively short case illustrates, yet again, the importance of pragmatism, and **Performance Expectancy**, in a low-PDI environment.

The implementation was led through a number of champions/super-users, similarly to Space Inc. and The Business School, with low to no involvement from the more senior management, which both describes a low PDI dynamic and supports the H1. Although the decision to divest came from a higher echelon in the organization, it could be argued that this was where it had to be made because of the financials and other implications related to the level of authority required to change direction to such a degree. It was made, however, based on feedback from the Green Belts, which is, yet again, related to PDI and H1.

There were some signs of **MAS** and **IDV** behaviour by Green Belts, i.e., their motivator being career progression, however, there is a high probability that this is caused by the selection bias: those seconded into the Green Belt positions were chosen on the basis of their competencies and ambitions, therefore they would be expected to want to grow professionally.

**Performance Expectancy** was the only factor that was taken into consideration, in contrast to most cases with higher PDI evident.

Overall, H1 was supported and all other hypotheses appeared non-applicable to the case due to the lack of evidence for dimensions (Table 26).

Cultural Background					
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint
Low.	Some IDV signs, but possibly due to selection bias.	No evidence either way.	Some MAS signs, but possibly due to selection bias.	No evidence either way.	No evidence either way.
UTAUT Constructs					
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy
The strongest factor.	Absent.	Absent.	Absent.	Absent.	Absent.
Hypotheses Testing					
H1	Supported: the system was used exclusively for the knowledge exchange within and between the project teams, without any involvement from the management.				
H2	No evidence either way.				
H3	No evidence either way.				
H4	No evidence either way.				
H5	No evidence either way.				
H6	No evidence either way.				

Table 26: Case Summary (AgriCo, UK)

## 5.17. Conclusion

As a whole, the sixteen cases examined in this chapter have shown some commonalities and trends; they will be discussed in the next chapter.

Some of them were showing instances of behaviours that were very close to Hofstede's descriptions of the corresponding dimensions, for example, high PDI in PiggyBank and SoftCorp (Russia) and low PDI in EnviroCom and Space Inc. (UK/USA). Others, however, were different, and some were mismatching the theory in many respects (e.g., MobiCorp differing from Hofstede's predictions for Russia in everything but low MAS). A more detailed discussion of matches and differences will be provided in Section 6.2. Although the mismatch between the evidence and Hofstede's theory didn't necessarily pose a problem from this research point of view, the phenomenon under study, and as a consequence, the hypotheses, required some revision.

The process of analytical induction started off with a set of hypotheses, based on Hofstede, and the expectations were that, for instance, in Russia the power distance would be high, and KM 2.0's implementation and further use would bear signs of a strong preference for a top-down knowledge flow. This, in turn, would lead to problems with typical Web 2.0 systems implying a substantial amount of knowledge exchange between peers, or in any directions possible. Conversely, in Anglo-Saxon cases, with power distance being theoretically small, the reverse trend would be observed; all of it would be in line with H1, i.e., that in a high-PDI environment the use of Web 2.0 would be inhibited by the predominantly top-down direction in the flow of knowledge and information.

The evidence was different from this theoretical picture, however. It was true that high-PDI environments in most cases bore the H1-related hallmarks, and so did the low-PDI cases, with the opposite sign. In that respect, hypotheses held. Only the overlap between national scores and, in this case, high or low PDI groups (i.e., what could be expected from Hofstede

and the actual observed behaviours) was incomplete. In some cases the organizational culture would have more influence on the adoption and use of Web 2.0, and the predictive power of Hofstede's numbers, although evident in most cases, was nevertheless limited.

Re-framing the analysis to refer to the *local* behavioural context, rather than the theoretical national trends, ensured that most proposed explanations fitted the evidence. However, H3 and H4, i.e., those referring to UAI and MAS, had to be modified when some contradictory evidence arose. It appeared that in case of a mismatch between the levels of UAI/MAS and the requirements of social media, the management practices could – and needed to be – modified to reflect this, and that this was possible. The evolution of the hypothetical explanations is discussed in section 6.5.

To discuss the findings in more depth, to generalise them and to provide a cross-case analysis based on a combination of all findings, the next chapter will go through the between-case 'stacking' process and results, with a discussion to follow.

## 6. Qualitative Stage: Cross-Case Analysis

### 6.1. Introduction

As it was discussed in the methodology chapter, Miles and Huberman (Miles and Huberman, 1994) advocate a cross-case analysis approach consisting of collecting the condensed data from the individual displays into meta-matrices of an iteratively increasing degree of data reduction and orderliness, starting from a simple and extensive accumulation of everything relevant, and gradually arriving at a more ordered meta-display highlighting trends, commonalities and differences between cases.

Placing a full meta-matrix covering all sixteen cases here would be technically difficult and would not achieve much benefit, since it is a mere starting point in further data reduction and analysis. Instead, it would be more useful to start from the point where first cross-case conclusions can be drawn and discussed, namely after some stacking has already been done.

The stacking process meant trying to cluster cases by some common features. At first, dictated by the aim and objectives, an attempt was made to group them by country; if Hofstede's theory held completely, this would have produced a consistent picture. It has, however, already been shown that in some cases (The Business School and MobiCorp, to name but two), there were instances of behaviour different from what was predicted by the theory. An alternative had to be found. Both options – country-based clustering and the other one – are presented and discussed in Section 6.2.

The next step was to identify any commonalities in adoption determinants between cases sharing the same dimension-related trends. This is discussed in Section 6.3; however, the process of identifying those commonalities and trends has highlighted some limitations pertinent to UTAUT, which is discussed in the section after that, 6.4.

Finally, since the aim of the research was to explain whether and how national culture can influence the adoption and use of Web 2.0 in organizations, one of the key elements of the within-case and between-case analysis was the development, and gradual refinement, of the explanatory hypotheses. This process, as well as its outcomes, is discussed in Section 6.5.

The chapter shall start, therefore, from collective summaries of the three areas that the individual analysis was concentrating on: observed cultural dimensions, UTAUT constructs, and hypothetical explanations. These will be followed by an analysis of the interrelations between the elements, and an overall discussion of the findings.

## 6.2. Summary of the Observed Behaviour Related to Hofstede's Dimensions

There were many matches between the observed dimensional dynamic and what could be expected by Hofstede; about 2/3<sup>rd</sup> of behaviours in each case conformed with the theory. At the same time, most (15 out of 16) cases had one or more dimensions absent from the evidence, which is, nevertheless, not an indication that the dimension in question could not manifest itself strongly in a different situation in the organization. Instead, it points out that in relation to the Web 2.0 implementation and use, since it didn't manifest itself in a discernible way, it was not applicable. Many instances (12 out of 16), however, were different from the theoretical picture in some elements, at times really strongly. It would be beneficial for this discussion, therefore, to have an overview of what dimensions have manifested themselves in which case.

The results are presented in Table 27 (Hofstede's numbers are shown in the top part of the table for reference). Approximate matches with Hofstede are highlighted in green, contradictions in red.

The table allows to make a number of observations about how Hofstede's theory related to the observations. Out of 60 case/dimension pairs, 38 (about 2/3<sup>rd</sup>) were clearly aligned with the theory. This is not a precise measurement, but qualitatively speaking, the picture is more conforming than contradictory.

At the same time, a higher proportion of matches was observed in the Anglo-Saxon group than the Russian one (about three-quarters and one half, respectively). The picture was also different by case and by dimension: cells with absent evidence aside, five cases overall contained only conforming evidence, five had one mismatch and the rest had more; MobiCorp, NaviSoft, SandWitch Co. and Planes'R'Us had fewer matches than mismatches. UAI was mostly mis-matching the theory, LTO was 50/50 and the rest were predominantly matching, although none were completely so.

	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-term Orientation	Indulgence vs. Restraint
Russia	93	39	36	95	81	20
Ukraine					86	14
UK	35	89	66	35	51	69
U.S.A.	40	91	62	46	26	68
Russian/Ukrainian Cases						
PiggyBank	High	Collectivist	Balanced	Possibly high	N/A	Restrained
SoftCorp	High	Collectivist	Balanced	Possibly high	N/A	N/A
The Management School	Low among students	Mildly collectivist	N/A	Possibly high	N/A	N/A
MobiCorp	Very low	Individualist	Feminine	Very low	Extremely short-term	Indulgent
NaviSoft	Low	Individualist	N/A	N/A	N/A	N/A
TrainingSolutions	High	Collectivist	N/A	N/A	N/A	N/A
InterFood	Low	Neutral	Masculine	High	N/A	Mildly indulgent
FashionOnline	Medium	Mildly collectivist	N/A	High	Mildly long-term	N/A
Anglo-Saxon Cases						
EnviroCom	Low	Individualist	Mildly feminine	Low	N/A	Mildly indulgent
SandWitch Co.	High	Individualist	Masculine	High	N/A	Restrained
Space Inc.	Low	N/A	Feminine	Low	N/A	Mildly indulgent
EnergyConvert	Low	N/A	N/A	N/A	N/A	N/A
The Business School	Low	N/A	N/A	Mildly low	N/A	N/A
Planes'R'Us	Medium	Mildly individualist	Feminine	Mixed	N/A	N/A
ConsultiComp	Low	Highly individualist	Strongly masculine	Low	N/A	Mildly indulgent
AgriCo	Low	Possibly individualist	Possibly masculine	N/A	N/A	N/A

Table 27: Observed dimension-related behaviours

One conclusion can be made on the basis of it: the theory does have *some* predictive power in terms of behaviours demonstrated by members of an organization within a given country; two-thirds is more accurate than a random 50/50 distribution. At the same time, as it can be seen from the table, the mismatches can accumulate and produce an occasional case that is quite far off the chart.

This can happen for a variety of reasons; however, the closer examination of the cases highlights that in absence of a strong influence on the culture the observed behaviour will match Hofstede quite well (PiggyBank, ConsultiComp and other close matches). At the same time, a number of factors can sway it one way or another.

In MobiCorp it was the market conditions that demanded the company to have a flat and flexible structure, to embrace uncertainty and to go against everything Hofstede predicted for Russia (high PDI, low IDV, high UAI, high LTO and low IVR); In The Management School (St. Petersburg) the audience was homogenous and didn't have the power stratification necessary for the PDI to exist. InterFood was a Western company and had more cultural attributes of the parent (UK-based) than the local ones. SandWitch Co. was a Taylorist and mechanistic enterprise, bearing the inherent signs of high PDI, masculinity and uncertainty avoidance, PDI and UAI going against Hofstede's numbers for the UK.

The mismatch between the actual and the predicted trends required reviewing the hypotheses, whereby as quickly as at the third case, when the discrepancies started to arise (seemingly a low-PDI dynamic where a high-PDI one could be expected from the nation-level figures), it became clear that the explanations should be based on what is observed, rather than what is predicted.

The existence of mismatches between the observed behaviours and Hofstede's predictions, as highlighted by the red cells in Table 27, do not necessarily invalidate the theory: approximate as the assessment based on the table above might be, it still shows that Hofstede's predictions are *predominantly* correct, and that any deviations tend to agglomerate around specific non-conformant cases.

However, when it comes to the level of an individual case, it is unequivocal that relying on the theoretical figures and thus trying to make predictions for behaviours would not be reliable enough. Although the majority (2/3<sup>rd</sup>) of country/dimension combinations were in

line with the theory, virtually every case could represent a set of significant mismatches, and could produce erroneous results overall.

As a consequence, grouping (stacking, clustering) cases by the country of origin wold not produce a consistent picture; cases could easily be too different (e.g., PDI in cases located in Russia varied from a strict and authoritative bank to a CEO in flip-flops). Instead, grouping could be done on the dimension basis – i.e., instead of talking about what was happening in relation to PDI *in Russia*, assuming wrongly that PDI was bound to be high, the matters related to social media should be discussed *in a high-PDI context*. The same would hold for other dimensions as well. This shift from focussing on countries to focussing on observed levels of dimensions is the main outcome of the cultural context analysis.

The groupings by the level of observed dimensions are shown in Table 28 below. The groups shall hereinafter replace the countries as the basis for comparison.

It would be beneficial to see whether the groups match the correlations found at the quantitative stage; for example, since the correlation with PDI was found to be negative, most of the high-PDI cases should have reported difficulties with their adoption and use of Web 2.0. The summary of the correlations brought from the qualitative stage is presented in Table 29.

As it can be seen from comparing Tables 28 and 29, this is indeed the case. SoftCorp and SandWitch Co. both have reported the use of SharePoint to a very limited degree and without utilizing virtually any of its interactivity. PiggyBank was struggling with a large number of individual cases, and the implementation was troublesome politically.

TrainingSolutions only managed to get their Wiki to work by firing two programmers for not using it. Conversely, all low-PDI cases were successful; AgriCo was the only one where a decision was made to de-commission the system, however, this was done on the basis of its

fitness for purpose rather than low adoption, and when it was running, it was used to an expected level.

Dimension	Level	Cases
Power Distance	High	PiggyBank; SoftCorp; TrainingSolutions; SandWitch Co.
	Low	The Management School; MobiCorp; NaviSoft; InterFood; EnviroCom; Space Inc.; EnergyConvert; The Business School; ConsultiComp; AgriCo.
Individualism	High	MobiCorp; NaviSoft; EnviroCom; SandWitch Co.; Planes'R'Us; ConsultiComp; AgriCo.
	Low	PiggyBank; SoftCorp; The Management School; TrainingSolutions; FashionOnline.
Masculinity	High	InterFood; SandWitch Co.; ConsultiComp; AgriCo.
	Low	MobiCorp; EnviroCom; Space Inc.; Planes'R'Us.
Uncertainty Avoidance	High	PiggyBank; SoftCorp; The Management School; InterFood; FashionOnline; SandWitch Co.
	Low	MobiCorp; EnviroCom; Space Inc.; The Business School; The Business School; ConsultiComp.
Long-Term Orientation	High	FashionOnline.
	Low	MobiCorp.
Indulgence vs. Restraint	High	MobiCorp; InterFood; EnviroCom; Space Inc.; ConsultiComp
	Low	PiggyBank; SandWitch Co.

Table 28: Grouping of cases based on the observed levels of dimensions

Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-term Orientation	Indulgence vs. Restraint
Strongly Negative	Strongly Positive	No Influence	Weaker Negative	Weaker Negative	Weaker Positive

Table 29: Summary of the global correlations between Dimensions and top Web 2.0 sites' user numbers

Similarly, Individualist cases largely did not experience many issues (with the exception of SandWitch Co.) and collectivist ones (low IDV) struggled, with the exception of The Management School, and TrainingSolutions with their coercive approach.

Masculinity by the quantitative results was not supposed to show influence, and both high and low MAS groups were largely successful, SandWitch Co. being an exception again. The contrast with PDI and IDV is quite telling, in the sense that PDI and IDV exerted a much stronger influence.

UAI produced weaker quantitative evidence of influences, but there were some indications that the impact of the UAI on the use of Web 2.0 was likely to be negative. It is in the qualitative findings, too: the low-UAI cases universally succeeded, however, the high-UAI ones were not necessarily failing either: The Management School and InterFood were doing well. The others, however, struggled.

LTO only had one case for high and low levels each; it was not a particularly prominent dimension. The cases agree with the predicted trend (the higher the long-time orientation, the more difficult it should be), but the evidence is less conclusive than with other dimensions.

IVR followed the quantitative findings (the more indulgent, the better) quite clearly.

A conclusion can be made that there is a good enough match between the quantitative findings and the trends in the qualitative data: in cases where strong evidence was found for certain dimensions, the degree of a company's success in Web 2.0 implementation matched the positive/negative correlations found in the quantitative data.

### 6.3. UTAUT Constructs vs. Dimensions

This sub-section is dedicated to assessing the overlap between UTAUT constructs and the dimension, aiming at producing a superpositional matrix establishing the relations between them. The sub-section proceeds as follows. A matrix is presented, showing overlap between constructs and dimensions, where such overlap was found. It is followed by a discussion of the present/absent dimension-construct pairs, and a more detailed analysis of the matches, centered around dimensions showing consistent trends.

UTAUT was used in this research as a framework providing a list of factors that have been shown in the past to influence users in their decision whether to use a system or to avoid doing so. The expectation was that examining the adoption determinants would bring out the mechanisms supporting or refuting the hypotheses, and the resulting superposition would lead to the creation of general framework providing a set of explanations of how the national culture influences KM 2.0.

The superposition, presented in Table 30, allows for some conclusions to be drawn. In brackets, exemplary cases are given.

First of all, some of the UTAUT elements were absent from the evidence altogether (Facilitating Conditions) or mostly absent (Attitude was explicitly present in three cases with no consistent patterns, and Anxiety was named in two cases in relation to the lack of out-of-group trust with a possible link to UAI).

Similarly, only three dimensions - PDI, IDV and MAS – have shown any discernible influence on UTAUT constructs; LTO, as we have seen in the previous sub-section, did not come across very clearly in the cultural part of the evidence, however, UAI and, to a much more limited degree, IVR, were present, but went beyond the scope of UTAUT. These missing

'spots' on the framework may represent limitations of the approach, and they will be discussed further along in this section.

	Power Distance		Individualism		Masculinity	
	High	Low	High	Low	High	Low
<b>Performance expectancy</b>	Overpowered by the need for the pressure from above (PiggyBank, Training Solutions).	A pragmatic view: if there is a problem it solves, it gets used (Space Inc., Energy Convert).	Exchange based on reciprocity and pragmatism (EnviroCom).	The idea of wide knowledge sharing perceived very negatively and 'leakage' as harmful (SoftCorp).	Making oneself visible to the management for the sake of career prospects (ConsultiComp)	Little importance of the personal performance and overall 'hard' benefits (MobiCorp).
<b>Effort expectancy</b>	N/A	Engaged approach towards architecture development – the higher the degree of involvement at the design stage, the easier to use it is perceived to be. Also pragmatic (EnviroCom).	N/A	N/A	N/A	N/A
<b>Social influence</b>	Very strong dependence on the pressure from above (PiggyBank, The Management School, Fashion Online).	The implementation led 'from within' – by super-users and champions (Space Inc.).	Low importance, although there are signs of the network effect (EnviroCom).	Significant in/out group collaboration issue and information hoarding (SoftCorp, TrainingSolutions).	Systems can be used as a means of making oneself stand out from the group (SandWitch Co, ConsultiComp).	N/A

Table 30: Superposition of UTAUT constructs over dimensions (strong trends shown only)

As far as those that were present and covered by the framework, the first and the most consistent link to the determinants was related to PDI. It was clear from the data that the way it manifested itself was through the balance between Performance Expectancy (i.e.,

the system's perceived usefulness) and the Social Influence, in this particular case most prominently the pressure from above.

In high-PDI cases (PiggyBank, SoftCorp, TrainingSolutions and SandWitch Co.) the implementation process was progressing if the management not only wanted it, but was actively taking steps to push it through; otherwise it would stop. There was little initiative 'from below', and in few cases where there was some, it was often ignored, rejected and/or discouraged by the management.

Low-PDI cases, by contrast (MobiCorp, Space Inc., EnergyConvert and others), were clearly pragmatic. Most respondents either alluded to, or referred directly to the 'problem it solves', and the adoption was driven by the job-related need, most often without seeking prior approval of the senior management and not relying on it. The management was quite happy with it ("*management didn't meddle*").

Another PDI-related consideration was the degree of the end-user engagement, perhaps linked to the previous point, although not universally. In low-PDI cases such as MobiCorp, EnviroCom and AgriCo the choice of the system was determined by whether the audience thought it was fit for purpose, and something that the users didn't think was good enough, would be officially abandoned in favour of a more suitable option, sometimes (EnviroCom) even as a PR move to increase people's involvement. Visibly more emphasis was put on promoting the use of the systems through champions and evangelists (Space Inc., The Business School, AgriCo), although sometimes (e.g. EnergyConvert, and Space Inc. at the early stages, before the official roll-out) it happened by itself as a consequence of the process being a grassroots movement (this is the link to the Performance Expectancy-related point mentioned earlier), i.e., the initiative came from within the audience, and it was led from within, too.

In agreement with H1, the top-down direction in the decision making process as well as the deployment, does not create a favourable background for Web 2.0 implementation.

**Individualism and Collectivism** had some influence, too. Collectivism has proven to be a negative factor: the more collectivist the environment was, the more important were strong ties (H2) and established groups. As a consequence, the perceived usefulness of the system could be impaired: like in the case of SoftCorp with their reluctance to exchange knowledge between the 'old-timers' and 'newbies', the system was designed to do exactly something they did not want to be engaged in: widely sharing knowledge. The social pressure was also against sharing knowledge beyond the group's boundaries.

Similarly to the influence exerted by PDI, individualist cases were pragmatically-oriented: the knowledge exchange was driven by some benefits-related considerations, organizational or personal (ConsultiComp; also a MAS-related point). Social pressure was not present very strongly, although in some cases (Space Inc., The Business School and InterFood) there were signs of a network effect: the more people were taking part in using the system, the more attractive it was to others, thus accelerating the adoption rates, but requiring an additional facilitating push to start with. In collectivist cases it did not matter how widespread throughout the company the system was.

**Masculinity** was not a strong factor – it has shown fewer links with constructs that the first two dimensions - although all four masculine cases shared a commonality in that there was some connection between the use of the system and some positive effect on one's career progression: link to KPIs in InterFood, being seen as practicing 'good leadership' in SandWitch Co., being promoted directly as a consequence in ConsultiComp, or being promoted partly to be using it (AgriCo). Feminine cases didn't have a link between careers and the use of Web 2.0 at all.

Overall, the two triads – PDI, IDV and MAS, on one side, and PE, EE and SI on the other, produce a nine-cell grid that accounts for most of the observed behaviours and interdependencies between factors, however, some prominent instances remain not covered. It can be suggested that UTAUT's limitations deserve a separate discussion.

#### 6.4. What UTAUT Does Not Cover: Theory's Limitations

Despite the theory's popularity, it became apparent during this study that its focus can be limited. The theory targets the point in time whereby a given system is presented to a user and they decide whether they would like to use it or not. The context is thus restrained in scope and timeframe, and therefore a number of relevant considerations are not included.

The possibility that a variety of systems may be on offer (e.g., MobiCorp, EnviroCom, Space Inc., AgriCo.) is not taken into account: any systems under study are taken in isolation. However, in, for example, MobiCorp, there is a multitude of tools available, and several of them are used based on what is *most* appropriate. What matters in these cases is the relative, rather than absolute, value. The higher echelons in The Management School liked the idea of a social network as a facilitating tool for students, but insisted on bringing the social networking in house and using the institution's VLE rather than any external platforms, so although Web 2.0 was perceived positively as a technological paradigm, a choice was made concerning a particular system.

In EnvrioCom, Space Inc. and AgriCo the same issue had a temporal dimension: the first attempt at using something – SharePoint or Starbook – failed and was abandoned because of the system's fitness for purpose (SharePoint) or low degree of interest in it, for pragmatic reasons (Starbook). One could come to a conclusion that such kind of systems are doomed to fail in those organizations, however, approached from a more participative way, the implementation eventually gave rise to much higher levels of acceptance; the way the implementation is *carried out*, is something that UTAUT does not cover.

This study shows that user adoption is a dynamic phenomenon, and not only user numbers go up and down, but they also do so at various rates (e.g., the aforementioned evidence for the network effect accelerating the adoption). Attitudes and perceptions change, and they

sometimes depend on factors other than those included in the theory – for instance, previous experience, comparison against alternatives and so on.

Furthermore, there is no space in UTAUT to delineate between different ways of using a system and different *reasons* for doing so. SharePoint in SandWitch Co. was conceived as an interactive KM platform, however, what was used on a daily basis was the file sharing part of it – this part of it was non-optional – and the KM side was running only to the degree of maintaining some visibility of online best practice sharing. Whatsapp in FashionOnline was actively used before the CEO decided that it could be formalised and used for knowledge exchange purposes, and although the former was done by the employees themselves out of convenience (performance expectancy), the latter was pushed through (social influence) and begrudgingly tolerated, as well as it would be, reportedly, abandoned, if the CEO stopped using it.

The list could go on (information security considerations, veracity of information, anxiety related to the social dynamic, e.g., trust – all UAI-related, although others are not necessarily so), but the key issue remains the same: UTAUT as a framework is not capturing the contextual complexity to cater even for the evidence related to five or six dimensions, and although it was useful as a basis for an interview guide, or what authors such as Miles and Huberman (1994) and Bryman and Bell (2006), refer to as ‘hunches’ or ‘initial thoughts’, the explanatory framework suitable for the interpretation of the data from both the quantitative and qualitative stages would have to be expanded beyond UTAUT.

In order to proceed towards outlining an overall framework, the explanatory hypotheses shall be reviewed, and the way they progressed and evolved throughout the data gathering and analysis stages described.

## 6.5. Hypothetical Explanations and Their Evolvement

As it was described earlier on in this thesis, after a set of correlations was obtained from the quantitative stage, six explanations for them were proposed based on Hofstede's detailed descriptions of dimension-bound behaviours, with the intention of verifying and developing them into explanations for all qualitative evidence.

The hypotheses were, originally:

*H1: in high-PDI context the use of Web 2.0 tools is impeded by the information and knowledge moving predominantly in the top-down direction with little knowledge exchange happening in the bottom-up way as well as within the same level in the organization.*

*H2: in highly collectivist environment the use of Web 2.0 tools is inhibited by users' low propensity to utilise the weak ties and preferring to work in strongly-tied small groups instead.*

*H3: In a high-UAI environment the use of Web 2.0 will be inhibited by the unacceptability of its unstructuredness, dynamism and lack of control, as well as the pluralist nature of knowledge generation.*

*H4: Masculinity/femininity will have no specific impact on the use of Web 2.0.*

*H5: LTO has a negative impact on the adoption of Web 2.0 because of its dynamism and short-term nature.*

*H6: In cases where Web 2.0 tools and systems are not strictly business-related and presented as 'serious', there will be a positive relation with IVR.*

All of them referred to the dimensions' levels published by Hofstede for the given country.

It is also worth pointing out that the strength of the quantitative evidence differed by

dimension; the figures aggregated over fifteen sites correlated in a significant way with PDI (negatively) and IDV (positively), however, the remaining four were only showing individual, i.e., site-by-site, trends. MAS did not correlate with anything but LinkedIn, and the remaining four dimensions correlated with four (UAI/LTO) or five (IVR) sites in a consistent way; UAI also had one outlier.

One observation linked to the above point can be made: although no preferential focus was given to any dimensions during the interviews, it transpired that PDI and IDV came across more strongly than the rest, and there were significantly more instances of H1 and H2, compared with others.

The first two cases – PiggyBank and SoftCorp – were mostly in line with Hofstede and in agreement with the theory in four (PiggyBank) or three (SoftCorp) dimensions; neither produced any evidence related to LTO, and both were balanced in relation to MAS, although the expectation would be for a more feminine environment to be observed.

The first case supported H1-4, produced no evidence for or against H5 and some weak evidence for H6. The second case supported H1-4 and did not have instances related to H5-6.

The contradictions started to emerge when the analysis moved on to the third case, The Management School, whereby the PDI-related behavioural trends were significantly different from Hofstede's predictions for the reasons discussed in the corresponding section (Section 5.3). The result was that on the surface, the way the implementation of a VLE went in the School would not fit into the theoretical context.

The closer analysis, however, revealed that although this was the case, if the *observed* levels of dimensions were taken into account, the hypotheses – H1 and H4 in this case –

would hold, and thus the hypotheses were re-formulated to relate to the observed levels of dimensions rather than what could be expected from the theory.

The re-definition of the phenomenon worked well until case seven, InterFood. Another phenomenon came to light, and it called for another re-adjustment of the hypothetical explanations and also highlighted a difference between the open domain and the internal social media.

The case bore the signs of high uncertainty avoidance and high masculinity manifesting themselves in a very high propensity to measure the Helpdesk's performance in a variety of ways, including the duration of phone calls and the number of times the same question had been raised; this approach was perceived as a highly desirable sign of the business' sophistication. By H3, social media should have been rejected by the users based on the lack of structure, and by H4, there should have been no link between the use of the system and masculine features.

In reality, however, the performance measurement system (reportedly a key element of the management approach) associated with the KM system instilled the desired feeling of control as well as opportunities for demonstrable personal achievement, and no issues arose.

A similar case was described in (Bogolyubov, Easterby-Smith et al., 2012), whereby a German-based Wiki implementation consultant reported that it was common for German users (Germany's UAI is a relatively high 65 points) to express concerns with regards to the loss of control over their contributions on Wikis, and the solution that they found was to offer a facility for the users to define levels of access to their posts. According to the interviewee, merely having the facility was enough to allay any concerns, and in reality it was very rarely – if ever – used.

Both examples illustrate the point that in an organizational environment, unlike in case of public Internet sites such as Wikipedia or Facebook, more parameters can be adjusted to suit the local circumstances, such as the desire for control. As long as they do not contradict other vital processes, it can solve the conflict.

The hypotheses were adjusted accordingly. H3 became:

*H3: In a high-UAI environment the use of Web 2.0 will be inhibited by the unacceptability of its unstructuredness, dynamism and lack of control, as well as the pluralist nature of knowledge generation, unless specific measures are taken to increase the level of control or to make the Web 2.0 system more structured.*

H4 was effectively falsified in its original form: a link between the MAS values and the way the adoption was driven has been found. MobiCorp with their feminine tendencies allowed people to select whatever systems they felt appropriate, and they had complete freedom of choice with no push for business results or any other achievement delivered via social media. InterFood had stronger masculine tendencies, and they did adapt their system in the sense that an additional process for performance measurement was established. Mildly feminine EnviroCom didn't offer as much freedom of choice as far as the system was concerned as MobiCorp did, however, they did not impose restrictions on the way the system was used. Strongly masculine SandWitch Co. did not adjust their approach as InterFood did, and concerns were expressed by respondents with regards to the suitability of the system to satisfy the masculine demand for scorecard improvement. Space Inc., a feminine organization, was similar in its approach to EnviroCom, and also deliberately shunned the idea of a competition as a means of promoting participation as something that would go against the predominantly intrinsic motivation of their employees. In ConsultiCo, a strongly masculine organization, one respondent identified the incorrect performance measurement approach as a predominant cause for social media failure, and another one

linked his visibility on internal social media to his rapid career progression. The evidence shows that an 'unmodified' social media system would not work well in a masculine setting; it appeared that the difference between masculine and the feminine organizations was that the latter had to let things develop on their own, and it would work; the masculine ones, however, required an explicit link between some sort of achievement (KPIs, career progression) and the social media. It mirrors the negative correlation with MAS shown by LinkedIn in the quantitative results; why this did not manifest itself in case of other social media sites, would require a separate in-depth investigation.

The revised version of H4, following from InterFood's case, included a provision for both highly feminine and highly masculine contexts:

*H4: In a highly masculine environment, successful implementation of Web 2.0 systems would require modifications to the system in question enabling the corresponding values to be enacted.*

In their revised form, both H3 and H4 along with the other four held for the rest of the sixteen cases, and thus it could be concluded that the tentative satisfactory explanation has been found.

The summary of the hypotheses-related evidence is shown in Table 31.

Table 31: The summary of the hypothetical explanations across cases

Case	H1	H2	H3	H4	H5	H6
PiggyBank	Supported. In a high-PDI environment, SharePoint was implemented and used in a top-down way, with little to none bottom-up or sideways knowledge exchange happening. As a consequence, SP was used only as and when the senior managers wanted it to. No grassroots initiative or active knowledge sharing on SP between peers evident.	Supported. There was evidence showing that the propensity to out-group sharing was low due to low level of trust. The successful use of SharePoint was implying an evidently uncomfortable level of cross-boundary collaboration.	Supported. The system was forcing people into working with non-group members as well as sharing one's expert knowledge, thus threatening one's professional standing and job security.	Supported. There was no evidence of a link between MAS and SharePoint.	No evidence either way.	Weakly supported: the only 'fun' component on the system was not received very well.
SoftCorp	Supported. The top-down direction is represented very strongly and sometimes proceduralized.	Supported. Low level of trust between groups. Widespread view that the group's knowledge is for the group's benefit, rather than of the whole organization, even if there is some business justification to share it.	Supported, although weakly: the old-timers/newbies split can be interpreted as an instance of the system giving rise to some uncertainty-avoidance concerns.	Supported. There was no evidence of a link between MAS and SharePoint.	No evidence either way.	No evidence either way.
The Management School	Adjusted to reflect the observed behavior rather than referring to the national score. Supported in the adjusted form. Low-PDI dynamic was accompanied by a widespread sideways knowledge sharing.	Weakly supported: there was some preference towards working in established groups.	Weakly supported: external social networks being beyond the management's control, they chose to promote the interval VLE. Although they did not choose to abandon Web 2.0 entirely, they chose an option offering more control.	Supported. There was no evidence of a link between MAS and VLE	No evidence either way.	No evidence either way.
MobiCorp	Supported: low-PDI context and very active sideways knowledge sharing.	Supported: individualist environment, deliberate use of weak ties.	Supported: low-UAI context, active use of unstructured systems.	No evidence either way.	Supported: the dynamism of social media matches the short-term culture of the company.	No evidence either way.
NaviSoft	Supported: low-PDI context and active sideways knowledge sharing.	Supported: individualist environment, comfortable and pragmatic use of weak ties.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.
Training Solutions	Supported.	Supported.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.
InterFood	Supported: low-PDI context and active sideways knowledge sharing.	No evidence either way.	Direct evidence against the hypothesis. The revised version: "In a high-UAI environment the use of Web 2.0 will be inhibited by the unacceptability of its unstructuredness, dynamism and lack of control, as well as the pluralist nature of knowledge generation, unless specific measures are taken to increase the level of control or to make the Web 2.0 system in question enabling the corresponding values to be enacted".	Direct evidence against the hypothesis. The revised version: "In a highly masculine or feminine environment, successful implementation of Web 2.0 systems would require modifications to the system in question enabling the corresponding values to be enacted".	Someewhat supported: the 'fun' element worked well, which matches the non-restrained culture.	

Case	H1	H2	H3	H4	H5	H6
Fashion Online	Supported for a mid-PDI case: the top-down direction was present, but was begrudgingly tolerated rather than welcomed.	Supported: the organization was small enough to maintain sufficiently strong ties.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.
EnviroCom	Supported: low-PDI context and active sideways knowledge sharing.	Supported: individualist environment, many examples of out-of-group collaboration.	Supported: the company's unstructured implementation approach and the system worked well together.	Supported: the feminine values were reflected in the company's position on the role of the system in creating a good climate at work.	No evidence either way.	Somewhat supported: the non-business element worked well, which matches the non-restrained culture.
SandWitch Co	Supported: resistance against sideways or bottom-up knowledge sharing, and the management preferred it that way.	No evidence either way.	Supported: there was a clear clash between the desire to keep the system unified and structured, and how it kept evolving locally.	Supported: there was a conflict between the system that was not directly targeting the KPIs achievement, and the company's values.	No evidence either way.	Somewhat supported: restrained culture matched the strict business-like feel to the system.
Space Inc.	Supported: the sideways knowledge sharing with no management involvement was initiated at comparatively low levels and continued in the same manner even after the management endorsed it.	No evidence either way.	Supported: a match between the unstructured Wiki and the unstructured nature of the work carried out.	Supported: wiki as a platform to realize one's intrinsic motivation.	No evidence either way.	Somewhat supported: a grassroots image worked well.
Energy Convert	Supported: a grassroots initiative addressing a pragmatic issue and driven by the middle management.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.
The Business School	Supported: the sideways implementation mode required by the workforce matched their low-PDI behavior.	No evidence either way.	Supported by the high-UAI management having issues with the openness of Web 2.0.	No evidence either way.	No evidence either way.	No evidence either way.
Planets'R'Us	Supported: neutral PDI matched by a balanced approach to Wikis implementation.	No evidence either way.	Supported: weakly: some individualist indicators matching a suggested approach towards motivating the participants.	Supported: feminine values reflected in their stance towards KM 2.0.	No evidence either way.	No evidence either way.
ConsultitComp	Supported: multiple examples of things knowledge sharing happening within the same level.	Supported: several examples of acceptance and preference for weak ties.	Supported: weakly: some individualist indicators matching a suggested approach towards motivating the participants.	Supported: the mismatch between individual performance measurement traditions was identified as a problem in relation to the team-based achievement.	No evidence either way.	Supported, although the generational differences in the IVR preferences also means the hypothesis effectively takes opposing forms for younger/older generations.
AgricO	Supported: the system was used exclusively for the knowledge exchange within and between the project teams, without any involvement from the management.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.	No evidence either way.

Table 31, continued: The summary of the hypothetical explanations across cases

As it can be seen from the table, the last two hypotheses, H5 and H6, related to LTO and IVR respectively, had had noticeably weaker evidence in their support. It is important to point out that these dimensions were mostly absent from the data, i.e., there were few clear examples of people behaving one way or another in relation to LTO and IVR irrespective of social media. Although the original theory does not assign primary or secondary roles to different dimensions, across the sixteen cases, the first four were present in a stronger way than the others. These are also the dimensions that were not picked up on by the original Hofstede's survey and were only included in the expanded versions of the framework; moreover, they were also two out of three dimensions showing weaker presence in the quantitative results.

## 6.6. Cross-Case Analysis: Conclusion

The qualitative evidence as a whole conformed with what could be expected from Hofstede's data in about two-thirds of the cases.

The trend could be summarised as that in absence of other influences strong enough, the behaviour in an organization defaults to predictions based on Hofstede's numbers, as it could be seen in cases of PiggyBank, SoftCorp, ConsultiComp and others, although matches along all six dimensions were rare. The observed culture can be shifted away from the national averages by such factors as market conditions, structures, policies and procedures, even the nature of the business, as the case of Space Inc. staffed with intrinsically motivated "geeks" illustrates.

What it means is that making predictions with regards to how social media implementation is likely to go in a particular organization based solely on the national figures has a likelihood of being true of about 66%. A more accurate approach would be to base the predictions on the traits *observed* within the organization in question. This point led, later on, to the re-definition of the phenomenon under consideration.

It was also shown that out of six dimensions and seven UTAUT constructs, three of each have shown notable levels of interaction, with some interplay between Performance Expectancy and Social Influence in relation to PDI, but also some impact on *what was actually perceived as useful* from the IDV, i.e., the perception - in collectivist cases - that sharing knowledge outside the group with strong ties is more of a knowledge *leakage*, even if it is the same organization, and it is actually harmful. The individualist cases did not have such issues, and their knowledge exchange was more pragmatic.

The analysis also highlighted some limitations UTAUT exhibited due to its single-system and static nature, and the conclusion was made that in order to create a satisfactory

explanatory framework for the cultural influences on Web 2.0's adoption, UTAUT alone would not be sufficient.

The hypothetical explanations created based on the quantitative results and an additional literature analysis mostly held, although two major adjustments were required.

The first one was closer to what the proponents of the Analytical Induction call 'limiting the universal', i.e., narrowing down the scope of the phenomenon under study; in this particular case it manifested itself in a move from a *national* level, i.e., an idea that the explanations provided would be valid in any organization within a given country, to the understanding that the explanations should be referring to the behaviours observed in the given organization, since, they may or may *not* be consistent with the national figures.

The other review was related to H3 and H4, whereby some evidence against the original wording was found. Due adjustment made, the new versions held for all sixteen cases, and insofar as analytical induction is capable of producing only tentative knowledge, the final set was deemed tentatively sufficient.

The theoretical elements, trends, interdependencies and other considerations discussed in this chapter need bringing together into a coherent narrative outlining the overall mechanisms through which the national culture can impact the adoption and use of social media in organizations. This is the purpose of the next chapter.

## 7. Discussion

### 7.1. Introduction

As it was discussed in the Introduction chapter, the aim of this research was to establish whether national culture has an impact on the internal adoption and use of Web 2.0 in organizations, and to provide an explanation as to how this may be happening. To achieve the aim, three objectives needed to be achieved: 1) to verify the initial hypothesis concerning the macro-scale link between the use of Web 2.0 in public domain and national culture (the first sub-question, *“Is there evidence of a relationship between national culture and the use of Web 2.0 in the public domain?”*); 2) to verify whether such link exists in the organizational context (the second sub-question, *“Is there any evidence that the national culture plays a role in the internal use and adoption of Web 2.0?”*), and 3) to propose and test the explanations for the possible mechanisms behind such link (the third sub-question, *“What mechanisms are responsible for it?”*).

To demonstrate how the aim and the objectives have been achieved, this chapter discusses the findings as a whole. It is done by addressing each research objective one by one, linking the discussion back to the literature, theories and frameworks underpinning the answer to the main research question.

## 7.2. Objective 1: Culture-Dependencies in Web 2.0 in the Public Domain

The first objective was set as a verification of the link between the national culture and the usage of Web 2.0 as a whole, with the related sub-question formulated as "*Is there evidence of a relationship between national culture and the use of Web 2.0 in the public domain*". Achieving this objective was necessary for a number of reasons. It would justify the move from the original 'hunch' (some unexplained trends in Wikipedia's composition by language discussed in the Introduction chapter) to a full-scale research project. Moreover, it would provide a foundation for going deeper, to an organization's level by assessing whether there were any trends in evidence at the national level, before analyzing particular cases nested in certain countries and subjected to a variety of local factors, for example, organizational culture or market conditions.

The answer to this first sub-question, arrived at by assessing the correlations between Hofstede's dimensions and user statistics for major Web 2.0 sites, was positive: some evidence for a link between Hofstede's dimensions and user statistics has been found.

Out of fifteen major Web 2.0 sites analyzed, six have shown statistically significant negative correlations with Power Distance and two had positive ones; Individualism had nine positive correlations and two negative ones; Uncertainty Avoidance had four negative and one positive, Long-Term Orientation had four negatives and no positives, and Indulgence vs. Restraint had five positives without negatives. Power Distance and Individualism have also shown, respectively, negative and positive correlations with the figures aggregated across all fifteen sites. Masculinity was the least impactful dimension with only one correlation, a negative one with LinkedIn; in case of all dimensions but Masculinity, correlations were showing a certain prevalent direction, and it was concluded, therefore, that the link between dimensions and user statistics has been found, but its strength varied by dimension: Individualism and Power Distance came across the strongest (the highest

number of sites showing correlations, plus aggregate numbers), Uncertainty Avoidance, Long-term Orientation and Indulgence vs. Restraint were weaker, and Masculinity the weakest.

Two major points can be made highlighting the link to the literature and the fundamental contribution of this research.

One is related to Hofstede's dimensions. The analysis required an n-dimensional framework to be used due to its design (i.e., it was proposed to analyze the user statistics against some quantitative descriptors of national cultures), and out of all the options available, Hofstede's was used because it was the most widely cited such framework. It would be a promising direction for research to compare correlations of a similar nature with other dimension-based cultural theories, however, it would go beyond the aim of this thesis.

Another point is that the correlations found can be treated as evidence of the Dimensions' convergent validity. Despite the theory's limitations discussed in the literature review, it was shown that dimension scores do correlate with a completely independent variable (user statistics), thus it could be argued that the numbers *do* describe underlying trends in how countries differ in their user behavior.

Two questions that could be asked, are, first why the picture is not 100% consistent, i.e., why not all fifteen sites show the same correlations (why there are some that do not correlate with certain dimensions, and why do some sites differ from the rest in the direction of correlations); and second, why some dimensions are more consistent than others.

The difference in some websites' cultural acceptability could be explained by a number of factors. For example, some research has been done addressing the relationship between national culture and user interface design (Marcus and Gould, 2000; Marcus, 2011;

Tskikritsis, 2002), and some evidence has been found supporting the claim that the acceptability of such components of the interface as its graphic elements is culture-dependent; therefore, correlations could potentially be different due to factors such as the website's appearance rather than the nature of Web 2.0 and its relation to culture. Finding out whether this is the case would require a comparative analysis between different sites within the same technological group, comparing different design elements against their supposed cultural dependencies. This is another potential direction for research, however, it goes beyond the scope of this thesis.

To answer the question about why some *dimensions* show a more consistent picture than others, it is necessary to look at the Dimensions theory itself. It does not differentiate dimensions by their importance, i.e., they are treated as equal. Yet both the quantitative and the qualitative stages of this research have found that Power Distance and Individualism were present the most, and the other dimensions' presence could vary. It could be argued that this could be an additional (meta-) dimension for Hofstede's framework, i.e., a potential delineation between primary and secondary dimensions based on how strongly they manifest themselves in people's behavior.

One more point relating to the literature can also be made, which is concerned with the nature of Web 2.0. McAfee's view on Web 2.0 remains largely undisputed; it is accepted in Web 2.0 literature at least as the foundation for further inquiry. Yet the paucity of cross-cultural research dedicated to social media shows that there is still little understanding of the way Web 2.0 is accepted in different cultures. Despite the Web 2.0's development having changed the face of the Internet, the cross-cultural body of literature is still represented by a very limited number of papers, as it has been demonstrated in the literature review (Section 2.6).

Furthermore, throughout the process of developing this thesis it has become apparent that McAfee's works are written from a perspective that bears signs of a North American cultural bias. For example, McAfee (2009) gives a lot of attention to the importance of weak ties, both as a distinctive feature of Web 2.0 and its strength - for example, the whole chapter in (McAfee, 2009) is dedicated to weak ties; that is, assuming that harnessing weak ties and relying on them is a positive factor. On one level, the quantitative findings support the *distinctive feature* claim: Web 2.0 usage correlates the strongest with Individualism, i.e., with the preference for weak ties, as in an American context. At the same time, the contradiction with McAfee is that Web 2.0's ability to harness weak ties and its reliance on them is not a *universally* positive factor: in a *collectivist* culture, in accordance with this thesis's findings, the reliance on weak ties can be a weakness.

A similar argument can be put forth in relation to some other dimensions, too. Web 2.0 is egalitarian in nature, and a negative correlation between Power Distance and Web 2.0's use has been found. However, what is a positive factor in a low-Power Distance Anglo-Saxon environment, can be a weakness in countries where vertical hierarchies are preferred. The same can be said about Indulgence vs. Restraint, albeit with a caveat related to the weaker evidence found for the Indulgence vs. Restraint's importance.

Moreover, Web 2.0 itself is a phenomenon of North American origins. Out of fifteen sites analyzed at the quantitative stage – the biggest Web 2.0 sites with global presence – twelve were of American, two of Canadian and one of British origins (all fifteen, therefore, are Anglo-Saxon). More American sites could be added to the list – Facebook, Google+, Foursquare, Pinterest, YouTube, as well as many others. Although they are used throughout the world, the findings of this thesis show that the Web 2.0 paradigm fits cultures akin to the Anglo-Saxon one best, and the further away from a low- Power Distance, individualist context one moves, the lower is the users' propensity to use Web 2.0.

Overall, the answer to this sub-question - whether there was "*evidence of a relationship between national culture and the use of Web 2.0 in the public domain*" was positive, and a number of links were found between the use of Web 2.0 and Hofstede's dimensions. Thus, the first objective of this research - namely, "*to verify the initial hypothesis concerning the macro-scale link between the use of Web 2.0 in public domain and national culture*", was fulfilled.

### 7.3. Objective 2: Testing Whether the Link With Culture Exists in an Organizational Context

The second objective was to verify whether the link between national culture and the use of Web 2.0, found as a result of achieving the first objective, would hold within confines of an organization, where other influences, such as organizational culture or organizational politics, could be at play. To fulfil this objective, Sub-question 2 had to be answered.

It was formulated as "*Is there any evidence that the national culture plays a role in the internal use and adoption of Web 2.0?*". Given that each organization's case would be unique in its circumstances and context, this sub-question was addressed qualitatively, by a closer and more detailed examination of individual cases, looking for patterns in culture-bound behavior and their influence on adoption and use of Web 2.0 in organizations.

The evidence has shown that in a given organization, a detectable high or low level of a particular dimension would have an effect on Web 2.0's adoption and use in the same direction (i.e., positive or negative) as the quantitative results have demonstrated. For example, high-Power Distance organizations would experience more difficulties with the implementation process than the low-Power Distance ones, and so would do the collectivist ones; this point has been discussed in Section 6.2.

One-third of observed levels of dimensions, however (22 dimension-case pairs), were in disagreement with Hofstede's predictions – i.e., behaviour in some Russian cases was indicative of low Power Distance, some uncertainty avoidant signs were seen in a British one and so on. This meant that in some instances, even though *in theory* the levels of dimensions for the host country were unfavourable towards Web 2.0, the adoption and use could be successful, and vice versa.

These deviations from the theory required some re-thinking. There was evidence showing that certain behaviours (relationship with power, for example) could be different from what the Dimensions predicted for the given country, and as a consequence, the adoption and use of Web 2.0 could go not the way expected from the theoretical cultural figures alone.

This gave rise to two points. The first one, manifesting itself in the hypotheses' revision, was that what really mattered was not the behaviour *predicted by the theory*, but rather the *observed* one (e.g., low-Power Distance dynamic in some Russian cases where high Power Distance was to be expected based on Hofstede). The observed behaviour was shown to match the theoretical predictions more often than not; however, the very number of the outliers was showing that in an organizational context, the situation would be more complex, and there could be influences other than the ones shaping up the national culture, potentially overpowering them and producing a different behavioural picture.

A conclusion that could be drawn from this would be that in a given organization, the users' behaviour is *likely* to be in line with Hofstede's predictions; however, if any other strong influencing factors are present, it can deviate from the theory to a noticeable degree.

This leads to the second point, a more fundamental one, namely, the relationship between the national and the organizational cultures.

Hofstede (n.d.) has previously raised concerns about attempts to apply the national culture's Dimensions to organizations. The author argued that this represents a mismatch of the levels of analysis, and the two – the national and the organizational culture – are fundamentally different phenomena. In Hofstede's view, the national culture is based on more deeply engrained values than the organizational one, and the ones underpinning the latter can be more easily learned and unlearned, i.e., they are more superfluous than those determining the national trends. In terms of Schein's model (Schein, 1985), the national

culture, by Hofstede, is based on the bottom level (basic assumptions), whereas the organizational one, on the one further up, i.e., second one (symbols, heroes and rituals, in Hofstede's own words). As an alternative, a separate dimensional framework has been developed to address organizational culture in particular (Hofstede, Neuijen et al., 1990, and Hofstede, 1998a).

It could be argued, however, that even Hofstede's original study itself (Hofstede, 1980) was carried out in an organization, IBM, rather than on a large sample of general public; therefore, an assumption that national culture's dimensions can't manifest themselves at an organization's level is self-contradictory.

Hofstede's argument about the levels of analysis, however, remains valid. Making inferences about individual cases based on larger-scale, *ecological*, evidence is known as an *ecological fallacy* (Piantadosi, Byar et al., 1988). Using the clinical trials as an illustration, if a remedy for a common cold has been assessed for its efficacy in a large-scale trial and its efficacy has been shown to be 75%, it does *not* mean that an individual's cold would be healed by 75%, even on average. Each individual case is unique, and clinical circumstances can differ to a large degree. What ecological variables show is that 75% patients have their cold healed, on average. Similarly, if a country's Power Distance score is 40 out of 100, it doesn't mean that each individual's behaviour will be made up by 40% of low-Power Distance traits.

At the same time, this argument should not be taken as an invalidation of the use of national culture's dimension in the analysis of how people behave in organizations. Indeed, it follows from the very *meaning* of the words 'national' and 'organizational' that those two varieties of culture are shaped by different sets of values and beliefs, one belonging to the level of whole nations, and the other one confined to organizations' boundaries. However, it does not mean that once we start analysing data from an organizational setting, the

national trends cease to matter; on the contrary, since they are, by Hofstede's view, 'more deeply engrained' they should be evident in the significant majority of cases arising from the same country, unless masked or overpowered by other factors modifying subjects' behaviour.

And indeed, as the qualitative evidence shows, this is the case: the majority of cases conform, but some do not, and it is possible in each of the non-conformant ones to suggest reasons why, as it was discussed in the individual cases' descriptions. An ecological fallacy, however, is not being committed here: the Dimensions are not used to analyse the organizational culture, i.e., values, beliefs, rules, heroes, lore and rituals characteristic of the given organization that shape up the users' behaviour. Instead, the observed behaviour, regardless of the locale of its determinants, is compared against the expectations arising from the Dimensions, and conclusions are drawn from there.

One such conclusion was that most cases are in line with the Dimensions, but some are not. Another one is that the behaviour arising from a particular combination of the national and the organizational cultures can be described by Dimensions anyway - e.g., there were many instances of behaviours in MobiCorp, which by Hofstede's data is untypical for Russia as a whole, but does conform to a low-Power Distance dynamic.

The third point is that what had actual influence on the use and adoption of Web 2.0 within organizations was the *observable* behaviour regardless of its origins. All organizations where user behaviour resembled high Power Distance, experienced difficulties with social media, regardless of whether their high Power Distance was in line with the theoretical predictions or not (discussed in more detail in Section 6.2). Furthermore, if cases were grouped based on the levels of dimensions observed in the evidence (high/low Power Distance, Individualism/Collectivism and so on – Table 28), the resulting picture was consistent.

Thus, the findings in relation to the second sub-question were that in the majority of cases the national culture has been shown to have an influence on the adoption and use of Web 2.0. In the remaining minority, where the actual behaviour was different from the theoretical predictions for a given country (i.e., individualist traits in a collectivist country), the impact would correspond to the *observed* dimensions (individualism in this example), and the picture across cases grouped by observed levels of dimensions was found to be consistent.

Answering the second sub-question fulfilled the second objective of the thesis, i.e., showing evidence for the existence of a link between the use of Web 2.0 and national culture in an *organizational context*.

## **7.4. Objective 3: Proposing and Testing the Explanation For the Possible Mechanisms**

### **Behind the Link**

Upon answering sub-questions 1 and 2, a few conclusions were made: a) Web 2.0 was shown to have correlations with national culture's dimensions at the level of entire countries in the open domain; b) the trends were maintained within organizational boundaries in majority of cases; c) the way Web 2.0 adoption and use proceeded was consistent with the empirically observed levels of dimensions. In order to answer the main research question in full and to achieve the aim of the thesis, it was necessary to answer the third sub-question, i.e., to examine the mechanisms through which these influences were enacted.

To meet this objective, what was known about the behavioural characteristics of Web 2.0 from McAfee (McAfee, 2009) and other sources discussed in section 2.6, was superimposed on Hofstede's detailed descriptions of the behaviours characteristic of the high and low level of the Dimensions, thus producing a set of hypothetical explanations. These initial hypotheses were then taken through the process of analytical induction, revising and adjusting the suggested explanations as the process continued, until they could explain all evidence. The following five sub-sections offer a discussion of the suggested explanations for the mechanisms involved on a dimension-by-dimension basis, based on the evidence presented in Chapter 6, "Qualitative Stage: Cross-Case Analysis", and more specifically, in Table 31, "The summary of the hypothetical explanations across cases".

#### **7.4.1. Power Distance (PDI)**

As it was discussed before, the Power Distance is an index that shows how acceptable is the power inequality between society members to them.

The quantitative stage has suggested that the higher is a country's Power Distance, the less is the likelihood of its inhabitants to use various major Web 2.0 sites.

In order to explain this phenomenon, an additional literature analysis was carried out, as it was discussed in more detail in sub-section 4.2.1, and it was found that a number of authors (Bhagat, Kedia et al., 2002; Ardichvili, Maurer et al., 2006; Thongprasert and Cross, 2008; Zaidman and Brock, 2009) have shown that in a high-Power Distance environment, knowledge is likely to be held and monopolized by the higher strata in any group, and that knowledge sharing is to be unidirectional, top-down.

It is evident that social media websites have a structure that is better suited for a low Power Distance: few, if any, hierarchical levels, and little power differentiation between users; in the case of all sites included in the quantitative study, there is virtually no hierarchy. It is true that people can have various levels of access and various degrees of administrative rights; LinkedIn, for example, has groups and/or pages with one or more administrators, however, their role is just to moderate. On Wikipedia, an attempt to introduce moderation in order to fight vandalism gave raise to some heated debates and accusations of trying to bureaucratize Wikipedia (de Laat, 2012).

Furthermore, some recent examples show that social media is seen by wide audiences as such an inherently anti-establishments phenomenon that it can play a pivotal role in events as macro-scale as changes of political regimes, for example, the 'Arab Spring', a series of uprisings and revolts in the Arab world taking place in 2011, the role of social media in which has attracted a lot of academic attention (Howard, Duffy et al., 2011; Khondker, 2011; Stepanova, 2011; Lotan, Graeff et al., 2011; Eltantawy and Wiest, 2011). It would be logical to expect that in even in normal circumstances, whereby the hierarchical structure is accepted and expected by those both 'above' and 'below', something as egalitarian as social media could be rejected.

Thus, the explanation offered in relation to the negative relationship found in the data between the Power Distance and the acceptability of social media was that the flow of knowledge in high-Power Distance settings would be top-to-bottom and not allowing for any sideways or bottom-up movement.

With the exception of re-focussing the hypothesis related to Power Distance on the levels of dimensions *evident* in each case rather than what could be expected from Hofstede's data, the explanation worked well.

There were four cases with clearly high Power Distance levels: PiggyBank, SoftCorp, TrainingSolutions and SandWitch Co; three of them were Russian/Ukrainian and one was British. In all of them there were multiple examples of authoritative management style, sometimes highly coercive, yet the authority was never challenged. There were many examples of a lack of initiative from below and high reliance on the pressure from above. Multiple instances of the top-down knowledge and information flow were observed, and there were some examples where the exchange in the bottom-up direction was resisted by the 'troops' or distrusted by the senior management. This resonates with some previous findings in the literature (Rai, 2011), whereby it was suggested that an autocratic (i.e., high-Power Distance) culture would impede on the use of KM systems due to the unilateral actions by the managers and by the concentration of power within the higher levels of the hierarchy. It also illustrates the point made in (De Long and Fahey, 2000) with regards to the role of power in KM, namely defining who should control knowledge, who must share it and who is allowed to keep it to themselves. As it can be seen from the findings, in a high-Power Distance environment the control resides with management, and sideways sharing is not encouraged, which is in line with the literature dealing with Power Distance and knowledge sharing.

In SoftCorp, SandWitch Co., and to a large degree, in PiggyBank, it led to any interactivity of their systems to be abandoned and them being used as a reporting and/or file management tool, which is in line with (Alavi, Kayworth et al., 2006), who found that the degree of autonomy and open collaboration present in organizations' culture determine which systems are adopted and for what they are used: the evidence has shown that in cases where a lot depends on the management, the collaborative features of Web 2.0 platforms can fall out of use. In TrainingSolutions, where the CEO applied coercion, the Wiki kept on being used, but given the amount of initial resistance and the seriousness of the measures that had to be taken to get it running, it could be assumed that the use would halt if the CEO stopped insisting, similarly to what the respondent said would be likely to happen in FashionOnline.

In all low-Power Distance cases the systems were used for knowledge exchange primarily within the same stratum, i.e., between peers. The senior management wasn't explicitly excluded from it in any examples, however, in many, it chose not to "*meddle*". In several cases – MobiCorp, Space Inc., EnergyConvert and, to a degree, The Management School (as far as using social networks in general was concerned, i.e., before the push for an in-house VLE became evident), the very decision to use interactive technologies originated within user communities, as a grassroots movement. The management provided some support and endorsement at most, but did not interfere in the way it was run. This point is an apparent contradiction to conclusions arrived at in the meta-review by Butler, Heavin et al. (2007), who found that the top management support is essential for KM's success (in a non-Web 2.0-specific sense), as are dedicated, formal KM-specific roles and responsibilities. The evidence found by this research shows that this not the case in low Power Distance settings in combination with Web 2.0, which tends to be successful if a large degree of autonomy and initiative is evident, often (Space Inc., MobiCorp, EnergyConvert, ConsultiComp) driven and promoted by users themselves.

Linked to the latter point, one trend coming out of the qualitative evidence was the interplay between two of the UTAUT constructs, namely performance expectancy (how useful it is expected to be) and social pressure, more precisely, what the more senior managers thought. The former was very strongly present in low-Power Distance cases; virtually all respondents from low-Power Distance contexts directly identified the fact that “*it has to solve a problem*” or “*it has to make jobs easier*”. So, the evidence has shown that the role of the top management support was less important than Butler, Heavin et al. (2007) suggested; equally, another factor that the authors mentioned, an appropriately communicated set of KM objectives, was supplanted by a tacit understanding of pragmatic benefits that was shown by the evidence to be a more important factor. In high-Power Distance cases the pragmatism was taking a step back, and even if the business benefits and other pragmatic considerations did exist, they would be overpowered by whether the boss thought it was a good idea: if the management was saying social media was useful, it was perceived as such; the case of Starbook is an example of the exact opposite in case of low Power Distance.

These findings develop the argument put forth by Nguyen and Mohamed (2011), who found that strong leadership, both transactional and transformational, has positive impact on the success of KM initiatives. This research has shown that the relationship is more complex, and although the link between leadership and the success of the implementation does exist in some instances, this is only true for high-Power Distance cases, and in low-Power Distance ones the link is absent; this is a further illustration of a match between Web 2.0’s egalitarian ideology and the attitude towards power in low-Power Distance context.

The findings also support and expand the observation made by Morris, Podolny et al. (2008) in relation to the influence of national culture on maintaining social ties. The authors have shown that Americans (low Power Distance) were pragmatic in creating and keeping ties

active, whereas the Chinese (high Power Distance) preferred to direct their interactions towards their superiors. The findings of this thesis show that the same respective trends hold in the UK and the US (low Power Distance), and Russia (high Power Distance), thus it could be argued that the direction of the ties is dependent on the level of Power Distance rather than something else specific to the US and China.

Overall, the negative correlation between Power Distance and the use of social media has found a significant amount of supporting evidence in practice.

The successful, or at least less problematic, implementation cases with good levels of take-up, were confined to low-Power Distance organizations, where it often originated within user communities at their own initiative or at least with minimum control and direction from the management. The primary use of Web 2.0 was to facilitate knowledge exchange between peers in order to address a well-understood practical challenge.

In high-Power Distance cases the implementation was much more problematic and relied very heavily on the management involvement and direction. Even when social media kept on being used – that is, as long as the higher strata kept the pressure on – the sideways knowledge exchange was very limited, and systems were used for reporting and file management rather than interactive KM.

These conclusions have some practical implications. First and foremost, a particular organization's Power Distance profile can give an indication of how much effort might be required to get any internal social media systems up and running: the greater the Power Distance, the more management involvement will be required. As the Training Solutions' case shows, it is possible to make a Wiki work even if Power Distance is very high; the sustainability of this approach, however, would be very questionable.

Furthermore, it is important to remember that sources such as (Davenport, De Long et al., 1998; McDermott and O'Dell; 2001 Janz and Prasarnphanich, 2003; Hayes and Walsham, 2000; Hayes and Walsham, 2011, and Alavi, Kayworth et al., 2006) warn against the use of KM tools as a driver for culture change, and they suggest instead that the right culture is a precursor for successful KM implementation. Given that the evidence shows that high-Power Distance behaviour makes Web 2.0 implementation more difficult, the matter of Power Distance would need to be addressed first. In line with the findings put forth in (Alavi, Kayworth et al., 2006), it was shown that high-Power Distance context, even if systems with Web 2.0 features keep being used, makes a significant negative impact on how much the interactive features remain in use.

#### **7.4.2. Individualism (IDV)**

Individualism, i.e., a degree of preference for individual interests over those of a group one belongs to, was another dimension that came across strongly in the quantitative data. With ten positive correlations and only two negative, it presented the most consistent picture among all dimensions, which provides support to the theoretical suggestion by Chau (2008) that Individualism is likely to be the dimension most relevant to Web 2.0.

The explanation offered for the observed trend was based on Granovetter's notion of social ties of varying strength (Granovetter, 1983): in a more individualistic society, in accordance with a multitude of sources discussed in sub-section 4.2.2, people are likely to establish weaker ties with others, i.e., to remain relatively distant and isolated, whereas in collectivist cultures, where belonging to a group has a profound meaning, establishing and maintaining strong ties is an important process.

What it also means is that if individualism is high, people would not have much aversion towards working, and in this particular case, engaging in various knowledge-related processes with, people with whom they do not share a group identity, and homophily would not be a strong factor. Conversely, in a collectivist setting out-of-group contacts would go with greater degrees of difficulty.

The importance of weak/strong ties is a point that has been brought up in the literature many times – e.g., (Cho and Lee, 2008; Liu and Porter, 2010), but it is important to keep in mind McAfee's point (McAfee, 2009) that the ability to utilize weak ties and to convert them into strong ones is something that Web 2.0 is based upon, and therefore it is likely to be less compatible with audiences where strong ties are preferred and weak ones are distrusted.

This is similar to the case of Power Distance. Here, too, it can be seen that one of the key properties of Web 2.0 can conflict with some of the main features of a dimension.

Of all cases, the most collectivist ones were PiggyBank, SoftCorp and TrainingSolutions, and in all three, multiple instances of high degree of distrust towards the outsiders of any kind could be observed, be they from a different branch, department or even with a different length of service in the company. In all three it created problems with Web 2.0 one way or another, from passive resistance and feelings of discontent to practically open sabotage.

Conversely, the individualist background made it easier to establish open knowledge exchange using Web 2.0. MobiCorp and ConsultiComp are the strongest examples (others, such as NaviSoft and SandWitch Co., bear the same hallmarks, albeit not to the same degree). In both MobiCorp and ConsultiComp, the work arrangements were dynamic and open, without any evidence of distrust between particular groups of employees, certainly not to a degree strong enough to overpower the pragmatic considerations.

As it could be expected based on quantitative results, the individualist organizations were more successful than collectivist ones. The only clear failure with signs of individualism was SandWitch Co., however, even in their case there were no issues with *distrust* as such, and the dissatisfaction with the system was related to its ability to make the KPIs achievement easier. Continuing the same trend, collectivist organizations predominantly struggled (PiggyBank, SoftCorp). Even cases with more weakly pronounced collectivism bore the signs of the same trend: mildly collectivist Management School didn't have many issues, but students did show some restraint towards sharing their work openly. Similarly, mildly collectivist FashionOnline kept using WhatsApp, however, the organization was small enough for people to know each other, and there was an ongoing pressure from the CEO to use the system; the latter, given the moderately high Power Distance, could explain the system was still being used, if begrudgingly so.

#### **7.4.3. Uncertainty Avoidance (UAI).**

Uncertainty Avoidance has shown some correlations in the quantitative data, however, fewer than Power Distance and Individualism: four negative correlations vs. one positive. It did not come across as a particularly strong dimension in the qualitative data either, at least in the first three cases. PiggyBank, SoftCorp, and The Management School had some signs of possibly uncertainty-avoidant behaviour, but not very well pronounced and in case of the former two possibly attributable at least partly to collectivism.

The case where Uncertainty Avoidance, low in this instance, appeared clearly for the first time, was MobiCorp, where uncertainty was fully embraced and even stimulated rather than being merely 'not avoided'. In full support of the corresponding hypothesis, Web 2.0 was used very actively, and even more so, the very way it was done – i.e., dynamically, as and when required, in contrast with some other cases whereby a decision about it would

have to be made at the top level – matched the organizational culture well. Other companies with strong indications of low uncertainty avoidance, i.e., ConsultiComp, EnviroCom and Space Inc., were among the clearest success stories, and they followed the same principles as MobiCorp.

At the same time, some *higher-Uncertainty Avoidance* cases, such as PiggyBank, SoftCorp, and SandWitchCo, struggled; however, several – The Management School, FashionOnline and InterFood, were doing fine, in an apparent contradiction to the hypothetical explanation.

A closer examination of the cases would reveal a similarity. In The Management School students were already actively using social networks to facilitate their learning process, and the School's administration, in a high-Uncertainty Avoidance move, decided to bring it in-house, presumably to increase the level of control. In FashionOnline, Whatsapp was equally already in use, but the CEO decided to formalise the way it was done. In InterFood a management process – namely, performance measurement procedure - had been linked to the system to satisfy the uncertainty-avoidant needs. In all three cases the *way* to use the system, and/or the managerial context of it, were adapted by the management to adjust it to the cultural background.

The conclusion can be made that it is possible to adjust the use of the social media to the Uncertainty Avoidance preferences, yet at the same time to allow social media enough freedom to keep it running.

Another point to be made is that Hofstede's view on the role of technology in general as something that "*helps people to avoid uncertainties caused by nature*" (Hofstede, Hofstede et al., 2010, p.189), cannot be supported: Web 2.0 did not serve uncertainty-avoidant needs in high-Uncertainty Avoidance cases, and in several instances the system had to be adapted to suit them. This expands findings by (Maitland and Bauer, 2001; Ess and

Sudweeks, 2005, and Barnett and Sung, 2005) regarding the negative link between the overall Internet use and Uncertainty Avoidance, onto Web 2.0 in particular, by showing that Web 2.0 demonstrates an even stronger negative trend: the numbers analysed at the quantitative stage of this research were relative (site visitors from a country to that country's Internet population); therefore, a negative correlation means that if a user goes online, which by authors mentioned above, is less likely in high-Uncertainty Avoidance countries, it is even less likely that they will visit a particular Web 2.0 site.

Hofstede does not rank the dimensions in order of strength, prominence, importance or by how deeply engrained they are. The qualitative evidence shows, however, that Power Distance describes the relationships between the subordinates and their superiors; collectivism – chiefly those between peers, and uncertainty avoidance has links with the management routines, practices and procedures, i.e., more formalised and less personal sides of the organizational life belonging at the top level of Shein's three-level model. The ability to modify these appears to be enough to make social media work.

Overall, the direction of the interdependency between Uncertainty Avoidance and the use of Web 2.0 was consistent between the quantitative and the qualitative evidence: the more uncertainty avoidant was the context, the more difficulties were observed, and vice versa. At the same time, there were multiple cases whereby no examples of discernible uncertainty avoidance-related behaviour could be found and in a few cases a modification of management routines was sufficient. The cases where some Uncertainty Avoidance-related evidence was found supported the suggested and modified explanation: in a dynamic and unstructured environment, the dynamic and comparatively unstructured systems worked well, whereas in those with a higher demand for certainty, they either struggled or required some modifications.

#### 7.4.4. Masculinity (MAS)

Based on the quantitative stage's results, masculinity should have had no impact: only one site out of fifteen, LinkedIn, correlated with it negatively, and all the rest, in a consistent manner, did not show any dependencies at all.

The related hypothesis, therefore, was formulated as a null at first – that is, to reflect the expectation that there would be no link. There was little evidence for either masculine or feminine behaviour at first (PiggyBank and SoftCorp had signs of both, and in The Management School there was no clear evidence for either), and the first case to show some signs of *low* Masculinity was MobiCorp where the respondent directly stated that profits were not as important to them as creativity and agility, which was also supported by a multitude of other examples.

At the same time, there were no indications in MobiCorp's case that Web 2.0 was used directly to address the matter of creativity and agility. The explanations given for its use were pragmatic rather than aimed particularly at maintaining a creative climate at work or anything along these lines, which would be a reflection of a feminine dynamic. It could be said that that low Masculinity, although evident in the organization's culture, did not have a discernible influence.

The conflict arose, similarly to Uncertainty Avoidance, in case of InterFood, whereby a masculine tendency to strive for business performance required a performance measurement procedure to be established.

It is worth also pointing out that this move, elaborated upon in the last subsection, bears the signs of *both* uncertainty avoidance and masculinity: the propensity to control what is going on, is a manifestation of high Uncertainty Avoidance, but the link with performance, targets, achievements and so on is a masculine sign.

The explanation was adjusted to reflect this, and in its revised form it stated that in case of a strong high-masculinity influence the corresponding values would have to be taken into account.

It is worth noting that the examination of the *feminine* cases leads to a conclusion that this is not the same in case of feminine values: taking them into consideration would mean letting people establish and maintain relationships (or transfer them onto an online platform as in Planes'R'Us's case) and as a whole allowing the process to develop organically. This may also mean a certain amount of redundancy (MobiCorp) or non-work related activity (EnviroCom), but the acceptability of certain inefficiencies in favour of good climate and relationships is another manifestation of feminine values.

Therefore, evidence was found showing that Web 2.0 in its unmodified form is something that suits feminine tendencies more, which is reflected in the 'social' part of the 'social media' term. It is possible to adapt the management processes and procedures to ensure a sufficient fit between the systems and the cultural background (InterFood) and/or is desirable to do so (ConsultiComp), and ignoring the matter in a strongly masculine environment can lead to a conflict (SandWitch Co.).

#### **7.4.5. Long-Term Orientation (LTO) and Indulgence vs. Restraint (IVR)**

The fifth and the sixth dimensions are more challenging to come to conclusions about, the former due to the lack of clear examples of high or low Long-Term Orientation in the data, and the latter, due to the under-development of both the theoretical and the empirical literature about it.

The quantitative results have shown weak, but consistent pictures for both of them: Long-Term Orientation had four negative correlations, and Indulgence vs. Restraint – five positive ones.

Out of all cases, however, Long-Term Orientation has come across rather strongly only in case of MobiCorp, whereby the extremely short-term orientation of the company's culture due to the dynamism of the market conditions was a very prominent theme. The only other case, and not a very strong one at that, was FashionOnline's official desire to be a trend-setter and the message that long-term growth was more important than immediate profits. According to the respondent, however, setting trends was not going particularly well.

The adoption results – the very active use of Web 2.0 in MobiCorp, and active, but mostly due to CEO's constant pressure in FashionOnline - are in line with a weakly pronounced negative correlation with LTO found in the quantitative results; however, the results, given the dearth of evidence, can only be deemed inconclusive.

The point that the dimension did not come across strongly in the results, mirrors Hofstede's own experience whereby his original European study did not highlight any long-term trends, and the dimension was only added after the study was expanded onto Confucian cultures.

Indulgence vs. Restraint was different in the sense that there were more examples than for Long-Term Orientation: MobiCorp, EnviroCom, Space Inc. and ConsultiComp bore signs of indulgence to some degree, and PiggyBank and SandWitch Co. were restrained. Most of them have shown some evidence for a link between the 'seriousness' of the system, the background level of restraint, and the outcome. The only exception was MobiCorp, where despite their CEO's informal style, no direct influence could be observed.

In the first restrained case, PiggyBank, the portal with competitions was reputed to be “*totally useless*”, whereas in SandWitch Co., the system did not have any ‘fun’, social elements to it, and it quickly became a file management system instead of a true Web 2.0 platform. InterFood presented an example exactly opposite to PiggyBank: their competitions actually worked, which matches the culture described as “*liberal*”, but can also be linked to their masculine tendencies. EnviroCom saw “*talking about cats online*” as a vehicle for getting people involved into using the system and welcomed it; in Space Inc., a company staffed with “*geeks that grew up on Star Trek and dreamed of being rocket scientists*”, the system had a grassroots image – i.e., something the “*rocket scientists*” did out of their own volition was deliberately adhered to as a sign of a non-restrained attitude. In ConsultiComp, in relation to the younger generation in particular, it was stated that they did not make a distinction between the business and the social sides of Web 2.0, and it was, reportedly, conducive to its more active utilization.

As a whole, there was some evidence in support of the suggestion that social media would have an inherently ‘un-serious’ component to it, and that it would be better received in non-restrained (indulgent) cultures. It was not as strong as for Power Distance and Individualism, but nevertheless present in over a third of the cases.

The discovery of mechanisms responsible for certain links between national culture and the specifics of use and adoption of Web 2.0 in organizations allowed for the third and final objective to be fulfilled: to develop the explanations for the mechanisms responsible for such links.

## 7.5. Conclusion

As it has been shown in the discussion of the quantitative results at the macro level, that of the individual cases, and of the cross-case analysis results, there is evidence in support of the claim that the national culture has an impact on the use and adoption of Web 2.0 technologies for KM purposes.

The macro-scale analysis shows that at a country level, Power Distance, Uncertainty Avoidance, Masculinity and Long-Term Orientation correlate negatively with the use of Web 2.0 sites, and Individualism and Indulgence vs. Restraint – positively. To explain the trends, an additional analysis of the theory has been carried out. Based on it, a set of explanations was put forth, taking shape of six hypotheses. The strength of the link varied between dimensions, from Individualism, with nine sites out of fifteen analysed showing a positive correlation, and two demonstrating a negative one, to Masculinity, where only LinkedIn has shown a negative correlation.

These results had predictive, rather than explanatory or descriptive, power as far as particular organizations were concerned: they could be used to make a prediction, with a certain probability, regarding how an implementation process would go in a particular case; however, they could not explain *why* it would be happening.

The research then proceeded to collect and analyse individual cases seeking confirmation, refutation or adjustment of the hypothetical explanations. At the end of the process a number of conclusions could be made.

First, it became evident that although the values of Hofstede's dimensions couldn't predict the behaviours in a given organization with one-hundred per cent certainty, they described approximately two-thirds of the dimension-case pairs (sets of examples showing particular

dimension-related behaviour in a given case, where it was evident). The rest could deviate from the theory significantly under the influence of a variety of factors.

As a consequence, it could also be concluded that more accurate predictions for the outcome of the implementation and use of Web 2.0 in a given organization can be made, and the mechanisms can be described with more precision, if what is *observed* is taken into account rather than what could be expected from the theoretical figures for the host country. For instance, MobiCorp, a Russian company, had clear signs of very low Power Distance, and as such would not make a particularly good case to illustrate or explain the 'traditional', Hofstedian, high-Power Distance Russian setting.

As far as particular dimensions were concerned, the explanations suggested originally for Power Distance and Individualism held well. As a multitude of examples have demonstrated, a **high-Power Distance** environment implies a vertical, hierarchical knowledge structure whereby knowledge can legitimately emanate from the levels above, and the reverse or the sideways flows are not encouraged; this goes against the ideology of Web 2.0 and can lead to a conflict. Conversely, low Power Distance implies exchange predominantly at the peer level without much involvement from the management, and these conditions have a positive effect. An observation was made in relation to UTAUT constructs, as well: it emerged as the result of the analysis that low Power Distance leads to Performance Expectancy playing a more prominent role in determining the user adoption, and vice versa.

**Collectivism**, with its high propensity to use stronger ties, has been shown to be a negative factor, manifesting itself in fragmentation, silos and distrust towards the outsiders. As could be expected from McAfee's remarks on the importance of *weak ties*, individualist cases were much more conducive to the use of social media, stimulating a more open and pragmatic environment.

**Uncertainty Avoidance** came across as a less prevalent dimension as a whole, however, there were a few cases whereby the management of organizations thought it worthwhile to make some changes to their management processes or to the way Web 2.0 systems were used in order to accommodate their own desire to keep a certain level of control over what was happening. As a few cases have shown, however, this was possible, and it did not require profound shifts in organizational culture; something comparatively simple, such as a suitable performance measurement procedure, could be sufficient.

In case of **Masculinity**, although from the quantitative data it was not expected to show much influence, it became apparent that high-Masculinity environment would require the corresponding values to be reflected, similarly to Uncertainty Avoidance, in the way the systems are used; ignoring it may lead to an impression of unfitness for purpose and a reluctance to use them as a knowledge management tool, as it was seen in case of SandWitch Co. Conversely, feminine cases did not highlight a need for adjustment; the 'social' component in 'social media' suited them well.

**Long-term orientation**-related examples were only seen in two cases out of sixteen, and one of them was comparatively weak. Both were in line with Hofstede's predictions, however, the paucity of evidence made it inconclusive.

Finally, there was evidence in support of the claim that social media is better suited for indulgent (high **Indulgence vs. Restraint**) contexts than for restrained ones, as the examples show, because there is an inherently 'un-serious' component in its image.

The summary of the original **hypotheses**, final explanations, and the evidence in their support is presented in Table 32 below.

Dimension	Original Hypothesis	Final Explanation	Justification
Power Distance (H1)	In high-PDI context the use of Web 2.0 tools is impeded by the information and knowledge moving predominantly in the top-down direction with little knowledge exchange happening in the bottom-up way as well as within the same level in the organization.	In a context with high <i>observable level of PDI</i> , the use of Web 2.0 tools is impeded by the information and knowledge moving predominantly in the top-down direction with little knowledge exchange happening in the bottom-up way as well as within the same level in the organization.	Multiple examples of top-down knowledge flow in high observed PDI settings (PiggyBank, SoftCorp, TrainingSolutions and SandWitch Co), all meeting difficulties, and active sideways sharing with more successful implementation in low observed PDI environments (the Management School, MobiCorp, NaviSoft, InterFood, EnviroCom, EnergyConvert, the Business School, Planes'R'Us, ConsultiComp and AgriCo).
Individualism (H2)	In highly collectivist environment the use of Web 2.0 tools is inhibited by users' low propensity to utilise the weak ties and preferring to work in strongly-tied small groups instead.	In an environment with <i>high observable level of Collectivism</i> , the use of Web 2.0 tools is inhibited by users' low propensity to utilise the weak ties and preferring to work in strongly-tied small groups instead.	Instances of silos and low between-group knowledge sharing creating tension in relation to Web 2.0 (PiggyBank, SoftCorp, the Management School – weekly – and Training Solutions). Open sharing and more successful implementation in individualist cases (MobiCorp, NaviSoft, ConsultiComp, EnviroCom, Planes'R'Us weekly).
Uncertainty Avoidance (H3)	In a high-UAI environment the use of Web 2.0 will be inhibited by the unacceptability of its unstructuredness, dynamism and lack of control, as well as the pluralist nature of knowledge generation, unless specific measures are taken to increase the level of control or to make the Web 2.0 system more structured.	In an environment <i>with a high observable level of UAI</i> , the use of Web 2.0 will be inhibited by the unacceptability of its unstructuredness, dynamism and lack of control, as well as the pluralist nature of knowledge generation, unless specific measures are taken to increase the level of control or to make the Web 2.0 system more structured.	In cases with preference for low level of certainty (MobiCorp, EnviroCom, Space Inc., ConsultiComp), Web 2.0 was accepted well. In uncertainty-avoidant cases without measures taken to increase the level of control, it struggled (PiggyBank, SoftCorp, SandWitch Co., The Business School). In cases where measures were taken (InterFood, Fashion Online to a degree) it worked well. The last version of the explanation covers all three scenarios.
Masculinity (H4)	<i>Masculinity/femininity will have no specific impact on the use of Web 2.0.</i>	<i>In a highly masculine environment, successful implementation of Web 2.0 systems would require modifications to the system in question enabling the corresponding values to be enacted.</i>	Clearly feminine cases (EnviroCom, Space Inc. and Planes'R'Us) came across as an environment conducive to the use of Web 2.0. A masculine case where measures were taken to adapt the system to reflect masculine values (InterFood) was successful, yet where mismatch remained, problems arose (SandWitch Co., ConsultiComp to a lesser degree).
Long-Term Orientation (H5)	<i>LTO has a negative impact on the adoption of Web 2.0 because of its dynamism and short-term nature.</i>	<i>High observable LTO has a negative impact on the adoption of Web 2.0 because of its dynamism and short-term nature.</i>	The evidence was weak – only one strong case, thus findings, although in line with the proposed explanation, deemed inconclusive.
Indulgence vs. Restraint (H6)	<i>In cases where Web 2.0 tools and systems are not strictly business-related and presented as 'serious', and presented as 'serious', there will be a positive relation with observable IVR.</i>	<i>In cases where Web 2.0 tools and systems are not strictly business-related and presented as 'serious', there will be a positive relation with IVR.</i>	Where 'fun' elements were present and matching the non-restrained culture (InterFood, EnviroCom, Space Inc.), they worked well. In restrained cases (PiggyBank, SandWitch Co.) systems had no un-business-like elements.

Table 32: Summary of the original hypotheses, final explanations, and the evidence in their support

A conclusion can be made that some clear evidence has been found to support the claim that the national culture, as defined by Hofstede's dimensions, is indeed likely to have some impact on the internal adoption and use of the social media. The conclusions based on Hofstede's numbers hold with some probability, although an individual organization's picture is, more often than not, influenced by a set of local circumstances, and the overall outcome depends on a particular combination of dimension-related behaviours.

A 'typical' Russian case would be high in Power Distance, collectivist, feminine, averse towards uncertainty, orientated towards long term goals and restrained. This combination of Dimensions is unfavourable towards Web 2.0: a top-down knowledge flow with little bottom-up or sideways sharing, combined with a preference for structures, with a high degree of distrust towards the people from outside the immediate social group, and no 'fun', social elements allowed. All of these would go against what the literature, and most prominently (McAfee, 2006 and McAfee, 2009) identify as key traits of Web 2.0: hierarchically flat, relying on weak ties, uncertain/dynamic and unrestrained.

Conversely, a typical Anglo-Saxon case would be low on Power Distance, individualist, masculine, mid- to short-term oriented, accepting uncertainty and indulgent. In settings like these, the knowledge flow would be directed predominantly sideways, within a peer group. This would be helped by an individualist trend to treat new connections pragmatically, i.e., judging their value by how useful the knowledge they can bring is rather than the matters related to homophily and trust. Acceptance of the dynamism, and viewing the social dimension on Web 2.0 as something not only unavoidable, but even positive and stimulating the open knowledge exchange are also positive factors. The masculine values would need to be taken into account by linking the use of social media to performance, achievement and benefits. The best examples can be seen in cases of ConsultiComp, and

with an exclusion of a mildly Feminine trend, EnviroCom. All of the above are likely to have a positive impact on the use of social media.

Once again, an important point is that the identified trends relate to the *observed* behaviours. In a given organization, the actual behaviour, for a number of reasons, can differ from what Hofstede posits as typical for a country. It is *likely* to be in line with Hofstede – and by how much precisely, is impossible to say without a separate quantitative study – but by an estimate based on this research's qualitative findings, the likelihood is about two-thirds. There is evidence to say that the behaviour defaults to the national averages in absence of strong influences such as market conditions (MobilCorp), demographics (The Management School) or the nature of the business (Space Inc.), however, the national background can be overpowered by the organizational and the occupational dimensions comparatively easily.

Achieving the three objectives outlined in Chapter 1 by answering the three research sub-questions allowed for the overall aim of the research to be achieved: evidence was found supporting the claim that national culture has an impact on the internal adoption and use of Web 2.0 in organizations, and a set of explanations as to how this may be happening has been provided.

## 8. Contributions, Limitations, Further Research and Conclusions

### 8.1. Theoretical Contributions

The novelty, and the contribution to the theory made by this thesis, lie primarily in the main research question residing at the intersection of three areas: KM, national culture and Web 2.0.

As discussed in the literature review, all of these three areas, separately, have had a varying amount of research done about them. National culture is the oldest and the most advanced area theoretically, and Web 2.0 - the least researched one, due to the comparatively young age of the phenomenon.

As far as combinations of the areas are concerned, the role of national culture in the adoption and use of Web 2.0 for KM purposes has not received much attention so far: at the time of the submission of this thesis (October 2014), only one peer-reviewed paper has been published addressing the question directly; it was discussed in the literature review (Barron and Schneckenberg, 2012). The paper, however, is theoretical, and has important limitations, as discussed in Subsection 2.6.2., p. 85.

National culture and its role in knowledge-related processes in general, i.e., not specific to Web 2.0, is still being actively investigated despite its relative maturity. Searching the Web of Science database for papers with *both* 'national culture' and 'knowledge' listed as their subjects, published within the last five years - 2010 to 2014 - returns 155 matches. Areas being researched include the role of national culture in knowledge sharing and transfer, knowledge creation, and organizational learning, among others. Thus, the discussion of **KM vs. culture**, represented by such works as (Davenport, De Long et al., 1998; De Long and

Fahey, 2000; DeTienne and Jackson, 2001; Barrett, Cappleman et al., 2004; Alavi, Kayworth et al., 2006; King, 2007), is added to by providing an additional set of empirical evidence.

Even more importantly, this research is providing evidence for the importance of national culture as a significant determinant in the use of new technologies for knowledge management, investigating a new and hitherto underexplored area of cultural research in KM – the one overlapping with Web 2.0. Some publications dedicated to behavioural aspects of KM 2.0 adoption and use exist (e.g., Patrick and Dotsika, 2007; Paroutis and Saleh, 2009; Prasarnphanich and Wagner, 2009; McNamee, Schoch et al., 2010), however, this research is making a fundamental contribution by addressing the matter from a cross-cultural perspective, which is something that Barron and Schneckenberg (2012) have theorized about, but for which they provide no empirical evidence. The results of this thesis show that in the majority of cases the adoption and use of Web 2.0 in organizations will be influenced by the national culture of the host country in ways specific to Web 2.0, which is explained by the interplay between Web 2.0's distinctive features and the culture-bound behavioural patterns. This interdependency can present implementers and users with a set of challenges different from the 'traditional' (Web 1.0-based and offline) KM systems and approaches, such as Web 2.0's higher degree of fluidity and openness in comparison to the 'conventional' KM systems, which can either match the cultural background, or create tension. This research has highlighted a set of behaviours and values that are conducive to a successful internal implementation specifically of KM 2.0, which expands findings in (McDermott and O'Dell 2001 and Alavi, Kayworth et al., 2006). This outcome could be written up and published in a paper comparing Web 2.0-based approach to knowledge management with the more traditional ones, such as non-interactive libraries and knowledge repositories, from the culture-oriented behavioural point of view. It could be titled 'Traditional and Web 2.0-based Approaches to Knowledge Management: Culture-

Bound Behavioural Differences and Challenges' or 'The Role of National Culture in the Internal Adoption and Use of Web 2.0'.

The research in **user adoption**, often TAM- or UTAUT-based, and investigating the adoption's cultural aspects or those related to Web 2.0, (e.g., Ben Zakour, 2004; Srite, 2006; Al-Gahtani, Hubona et al., 2007; Dapper, 2007; Oshlyansky, Cairns et al., 2007; Ismail, 2010; Im, Hong et al., 2011), is expanded into the area of the overlap between the two, providing insights into how adoption determinants can be influenced by cultural dimensions and Web 2.0's specific features at the same time. It is also worth mentioning that *qualitative* studies based on UTAUT are quite rare (Williams, Rana et al., 2011), although the theory is not inherently quantitative. Furthermore, this study has highlighted some fundamental limitations of UTAUT, such as its static nature and its focus only on the matter of a yes/no choice when a system's adoption is concerned, but not an either/or type of decisions in case if multiple alternatives are available.

The point about the static nature relates to the UTAUT questionnaire and the framework itself targeting the user's behavioural intention to use the system; it is a snapshot in time, and such approach does not take into account the *process* side of implementation and the possibility that circumstances, and sometimes the system itself, can change significantly.

Related to this point, it is also worth pointing out that the matter of user adoption is not necessarily a yes/no question, and a variety of circumstantial combinations can be observed in real life. In the simplest case, it can, indeed, be a matter of using or not using a single system – Starbook as an example – and this would be quite close to UTAUT's original focus.

At the same time, the acceptance/rejection can be aimed at a whole class of IT tools – e.g., MobiCorp and ConsultiComp had a positive attitude towards Web 2.0, saw it as useful and didn't differentiate much between particular systems. Similarly – and this is where the link with the point about the *dynamism* can be observed – the aim of the implementation

process could be to have a Web 2.0 platform deployed, and the choice of the particular one could be a matter of trial and error (e.g., EnviroCom and AgriCo who tried different systems). Furthermore, another level of complexity can be added to it, when a matter of how, or for what, a system is used (e.g., the use of SharePoint in the SandWitch Co. restricted to sharing files rather than full-scale knowledge management as it was intended to be).

There are no grounds to claim that UTAUT has no validity at all, however, the research has highlighted a number of areas that cannot be addressed using UTAUT, and an alternative approach should be sought to investigate them. This point could serve as a foundation for an expanded version of UTAUT incorporating complexities currently not covered by it, i.e., dynamism, multiple alternative systems and different purposes for which the same system could be adopted. This paper could have a title along the lines of 'User Adoption In Complex Settings: Expansion of UTAUT'.

Finally, as far as the **national culture** and Hofstede's dimensions are concerned, several findings of a fundamental nature were made.

The dimensions have been shown to have imperfect predictive power in terms of observable behaviours in organizations, and a variety of other factors could shift the behaviour into something different from Hofstede's predictions.

At the same time, the level of conformity between observed behaviours and the theory was about 66%, and in that respect, the findings could be said to support Hofstede's theory, albeit with caveats. Where the contribution lies is that the sixteen cases analysed in this research from the Dimensions' point of view, provide a wealth of empirical qualitative evidence expanding on the original theory.

When it comes to cross-case analysis, it is evident that although dimensions manifest themselves in many instances, however, individual cases as a whole can differ from the predicted picture, and the deviations can at times be quite significant. It was suggested, therefore, that the cross-case analysis in similar situations should be done on the basis of *observed* levels of dimensions rather than the *theoretical* ones. As it was shown in Chapter 6, the groupings produced by the two approaches can be significantly different; however, the dimension-by-dimension narrative constructed on the basis of the latter is consistent.

Finally, another significant observation related to the Dimensions, and something that to the best of the author's knowledge has not attracted researchers' attention, is that both the quantitative and the qualitative stages have shown that dimensions can be represented in the evidence with a varying degree of prominence. Power Distance and Individualism were the strongest in both sets of findings; Masculinity was absent from the quantitative set and present in a weaker way than the first two in the qualitative results, on par with Uncertainty Avoidance. Long-Term Orientation and Indulgence vs. Restraint were weak in the quantitative and the weakest in the qualitative results, Indulgence vs. Restraint having few examples in the latter, and Long-Term Orientation being practically absent. This is a trend that could be worthy of further investigation, potentially leading to adding a meta-dimension to Hofstede's framework, publishable in a paper with a provisional title of 'Meta-dimensions of National Culture: Examination of Variance in Dimensions' Strength'.

## **8.2. Methodological Contribution**

From the methodological point of view, the study was mainly based upon, and guided by, three texts (Bryman and Bell, 2006; Easterby-Smith, Thorpe et al., 2012, and Miles and Huberman, 1994), with a number of more specialized sources drawn upon for guidance on, and examples of such matters as mixed methods and analytical induction. In this respect, the methodology does not go far beyond the convention, and multiple examples of similar approaches can be found in the social science literature.

At the same time, in business and management studies in particular, mixed methods are still significantly under-represented (Cameron and Molina-Azorin, 2011), and from this point of view, the study contributes to the growing body of mixed methods research and helps to strengthen the argument for the mixed methods' viability. The overall study could be written up and submitted as an example of an explanatory mixed methods research with analytical induction at the qualitative stage, to be submitted to the *Journal of Mixed Methods Research*, with a title of 'The Role of National Culture in Web 2.0 Use and Adoption: an Explanatory Mixed Methods Study'.

### **8.3. Practical Contributions**

The results of the thesis have practical implications that could be of primary interest and benefit to Web 2.0 implementers, especially those working across different cultural contexts.

As can be seen from the results, the outcomes of the Web 2.0 deployment can be contingent upon the level of its fitness to the given organization's cultural context. The implementation can be successful or fail altogether, or can be successful partially – i.e., some functionality can be used, and some can be ignored; in some cases it can take more than one attempt to achieve success. At times, the push for more open knowledge sharing, represented by the implementation of interactive KM systems, can bring out conflicts and tensions pre-existing in the organization. None of the cases examined had evidence for problems with the implementation being related to such factors as resources availability (e.g., money or support staff), time pressure or general computer literacy. Instead, factors playing a role were centred around the suitability of either the systems themselves, or the way the implementation process was dealt with, to such cultural factors as power dynamics, target audience's preference for strong or weak ties, its ability to handle uncertainty, and the level of masculinity.

The practical implication of the findings is that for the deployment to be successful, both the system design and the implementation process need to be adapted to – or at least checked for compatibility with – the cultural context. It has been shown, for example, that in high-Power Distance environments the implementation needs to be driven from higher hierarchical levels, and conversely, if the Power Distance is low, from within the peer group. Yet, Web 2.0 is hierarchically flat and egalitarian in nature, and even if the initial adoption is satisfactory, its ongoing use in a high-Power Distance organization may remain problematic. Furthermore, evidence has been found to support the claim that in case of Uncertainty

Avoidance and Masculinity, systems could be adapted in a way making them reflect the corresponding organizational preferences, thus eliminating conflict and making them suitable for the cultural context, e.g., by substituting an external social network by a similar internal system, formalizing the use of an existing external platform or by establishing a performance measurement procedure for a Web 2.0-based knowledge repository. No such evidence has been found for the Power Distance and Individualism, thus it could be suggested that in case of a high Power Distance and Collectivism (manifesting itself in a preference for the use of strong ties), the cultural background would need to be changed first, should the organization deem it worthwhile.

A conclusion can be made, therefore, that for a Web 2.0 implementation project to be successful, it is important for the host organization to be aware of their cultural context, and to understand the impact it is likely to have on the systems' adoption and use. The findings of this thesis provide a set of indications for the latter; with further operationalization, it can be developed into a Web 2.0 readiness assessment tool that could be used, as the name suggests, to diagnose an organization's preparedness for a Web 2.0 implementation from the behavioural point of view. It would involve assessing the levels of Dimensions and contrasting them against the factors that have been shown to have an influence on Web 2.0 adoption, with corrective measures, if any, suggested as an outcome.

As evidence of the industry's interest in the results, Space Inc. and Planes'R'Us have expressed willingness to participate in further research collaboration, which is currently underway. Some preliminary findings were presented at a practitioner conference dedicated to IBM Connections (Bogolyubov, Easterby-Smith et al., 2012), and generated an active debate, with some further research contacts arising from it.

#### **8.4. Limitations and Further Research**

The study had a number of limitations, most of which can also be treated as opportunities for further expansion of the research.

The quantitative part concentrated on a limited number of the world's biggest Web 2.0 sites, and although this was deemed to be sufficiently representative of the entirety of social media, some categories of it were omitted from the sample, namely blogs and social networks. This was done for practical reasons. Blogs do not belong on a single site, and although there are some major players such as Wordpress, there are a countless number of blogs placed elsewhere; every major newspaper website hosts a multitude of them, for example, and tracking them all down for statistical analysis is not absolutely impossible, but would require a significant amount of time and effort. Analysing the national culture's influence on the blogosphere could be an interesting and promising direction. Social networks represented a different challenge: there was a high degree of national fragmentation in the sense that few of them had truly global presence, and a high degree of geographical differentiation could be observed. Facebook, for example, although by far the biggest social network on the Web, surpassing the size of the most popular Russian one, Vkontakte.ru, in a 4:1 ratio globally, was one-third of its size within Russia alone, and similar picture could be observed in some other countries. Facebook is also banned in China, which makes analysis of the social networks as a whole problematic, especially given that these are the biggest network and the most populous country on the planet, respectively. Similarly to the issue with blogs, this is not an unsurmountable obstacle, however, since social networks were not a particular focal point for the thesis, they were put aside for the future.

As far as the qualitative stage is concerned, first and foremost, the number of respondents per company was fairly low, mostly one per company. This was caused by the difficulties

with gaining access, and if it could be gained, increasing the number of interviews per case and painting a richer picture for every case, relying on a multitude of experiences rather than on that of one or two people, it would make the study even stronger.

Another point is that conclusions about the levels of cultural dimensions in each case were made based on qualitative evidence and were, thus, approximate. In some cases it was easy to point out instances of behaviours associated with very high or very low levels of certain dimensions, however, in some, symptoms were weak, mixed, or inconclusive. Ideally, since the research is based on Hofstede's model, the original questionnaire could be run in each organization and the levels measured with as much precision as the framework allows, with the illustrations and explanations provided by the qualitative stage to follow. Unfortunately, again due to the access difficulties, it would be unrealistic. Furthermore, administering questionnaires in sixteen different companies, even if access was granted, would present a significant logistical challenge.

From the research strategy point of view, the one employed in this research was the *explanatory* variety of mixed methods whereby the qualitative data is used to explain the quantitative results. Although this was dictated by the aims and objectives of the research, and in this respect it served the purpose, it could be argued that some complexity and richness in the qualitative data has been lost. The explanations were developed via the process of analytical induction, whereby a set of hypotheses were proposed, tested and adjusted when necessary; this provided a link back to the quantitative findings. At the same time, it restricted the qualitative inquiry to directions dictated by the numbers. The wealth of the qualitative data gathered for this thesis could be analysed using other methods and strategies allowing more freedom for exploration – e.g., grounded approach, activity theory, or actor-network theory. They, however, would be able to provide answers to

different research questions, and it represents an opportunity for analysing the qualitative data set from conceptually different angles.

At a more fundamental level, the study inherited the limitations of the frameworks it is based upon. Those of Hofstede's dimensions are discussed in the literature review, and the study is as open to critique as the framework. The Hofstedian notion of a national culture itself is not indisputable; a cultural framework had to be selected, however, and since the Dimensions were the best known one in the practitioner's world and the most frequently cited one in the literature, they were used. There might be potential in exploring the alternatives, including different frameworks of a similar nature, or perhaps even moving away from the idea of culture based on the idea of a nation-state altogether.

UTAUT, although a theory reputed to be able to address the key component of the research question – the determinants of the adoption and use of a certain technology - despite proving to be quite useful in providing a structure for the interviews, has shown limited applicability to the research question: only some of its elements were found in the evidence, and there were some themes and phenomena that it didn't address.

At the moment, there are no better alternatives in the literature. Barron and Schneckenberg (2012), perhaps facing a similar issue, have come up with a list of their own without associating it with an existing theory, and although the non-evidence-based approach has limited veracity, the very idea of detaching the adoption research from the frameworks such as TAM and UTAUT is something that may have to be done in the future.

## 8.5. Conclusion

Overall, a four-year-long journey took this research from initial indications of skewness in Wikipedia's user statistics, to a more rigorous understanding how exactly national culture can impact the adoption of social media in organizations.

A literature overview was carried out, covering the areas of organisational knowledge, knowledge management, national culture and Web 2.0. Further along the way, additional forays into the relevant areas were done for mixed methods, UTAUT, national culture by dimension, and for analytical induction.

The quantitative analysis was done at the macro level, analysing correlations between Hofstede's dimensions and the proportion of a country's Internet population using each of the fifteen major Web 2.0 sites. It provided indications whether the probability of a country's Internet user visiting one of the fifteen sites correlated with any of the dimensions, and some significant trends were found. The significant correlations with Power Distance, Uncertainty Avoidance and Long-term Orientation were predominantly negative, the ones with Individualism and Indulgence vs. Restraint were predominantly positive; Masculinity has shown a correlation with LinkedIn only.

Based on the literature – (Hofstede, Hofstede et al., 2010) and (McAfee, 2009) to start with, but also a number of papers dedicated to matters related to knowledge management and various aspects of national culture – a set of six hypothetical explanations was developed.

These were compared against the body of empirical qualitative evidence as per the analytical induction process. Some modifications were made; and at the end of the process, the following conclusions were drawn.

The empirical evidence was in agreement with Hofstede's descriptions of typical dimension-related behaviours by about two-thirds. It was observed that in absence of strong

influences, the behaviour would default to what the theory predicts; it can, however, be altered into something different from the theory. At the qualitative stage, the positive/negative influence from the dimensions on how well the implementation went was found to be in agreement with the quantitative results with the exception of Long-term Orientation, where the evidence was inconclusive.

High Power Distance was shown to lead to a top-down knowledge flow and a lack of initiative among the 'troops'. Low Power Distance, conversely, led to wider sideways sharing and collaboration with little control exercised by the more senior levels in hierarchies. Collectivism manifested itself in a high degree of distrust towards the outsiders – that is, those from beyond the immediately familiar circle – which impeded on the free knowledge exchange characteristic of social media. Individualists, conversely, were more pragmatic about it, and the practical benefits outweighed the familiarity as a decision making factor. There was some evidence to show that uncertainty-avoidant settings required the management to make amendments to their processes and procedures in order to bring a feeling of control into the use of social media. Similarly, Masculinity had to be reflected in the way the systems were managed; ignoring it could lead to a conflict. However, feminine background did not require any specific arrangements; in feminine environment, social media worked better where it was let to develop organically. It was also evident, although to a lesser degree than in case of Power Distance and Individualism, that social media may be perceived as a less 'serious' platform, and therefore suit indulgent cultures more than the restrained ones.

The study makes a fundamental contribution by expanding some existing debates into hitherto unexplored areas. The role of national culture in knowledge management has been researched before, however, the publications did not cover Web 2.0. KM 2.0 research to date, although increasingly more concerned with its softer aspects, did not include national

culture, and similarly, there is a body of technology adoption research dedicated to national culture vs. adoption determinants, as well as adoption of social media, but not the three combined. The findings of this research address this gap by outlining several mechanisms through which national culture can have an impact on Web 2.0 user adoption.

Furthermore, some limitations of the frameworks used as a foundation for the thesis were highlighted. UTAUT, although designed to deal with the matter of users making decisions whether to use a system or not, however, the evidence has shown that the adoption is a *process*, with several layers of complexity playing a role. It is not always a yes/no question; sometimes there can be several options, and the decision making becomes a matter of comparison. Sometimes the attitudes and perceptions can relate to the whole classes of systems, and individual distinctions become immaterial. It also became evident that adoption is a *dynamic process*, and a methodology based on a snapshot in time does not address this issue.

From Hofstede's dimensions point of view, it was found that the majority of the qualitative evidence was in line with behavioural trends predicted by Hofstede; as such, it provides a further body of qualitative evidence in support of the theory, its limitations aside. However, a noticeable amount of mismatches were found, and a conclusion was made that although the Dimensions do have some predictive power, nevertheless, the cross-case analysis can produce consistent results only if *observed* behaviours are taken into account. They, in turn, can deviate from the theory to a large degree, influenced by factors such as structures, organizational culture, market conditions, and so on.

Methodologically, the study adds to the growing, yet still limited, body of mixed methods research. It has generated a fair amount of interest among practitioners and it can be foreseen that it can have wide practical applications.

The study had a number of limitations, most of which represent an opportunity for further expansion of the research.

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## **Appendix 1: Interview Guide**

As it was discussed in sub-section 3.8.2., the interviewing technique chosen for the qualitative stage was *semi-structured* interviews. What it meant was that the questions asked were open, with a deliberate effort made not to guide the respondent to certain answers. The Guide, thus, played a role of a list of subjects to be covered rather than that of a set of questions to be asked. It can be broken down into three sections: 1) the background information about the company and their Web 2.0 experience; 2) Hofstede's Dimensions; and 3) UTAUT constructs.

Parts 2 and 3 were based on the original questionnaires used to develop the frameworks by their respective authors. Some areas were not asked about in case if enough evidence was provided by the interviewees themselves, unprompted. It was quite common that some direct evidence was provided in answer to a different question.

The list of areas with exemplary questions is presented below:

**Background:**

- Information about the company (age, location, industry, structure, demographic profile);
- Web 2.0 experience: when, which systems, for what reasons, the organizational side of the implementation process, the outcome.

**Hofstede's Dimensions:**

- PDI: the prevalent management and decision-making style in the company/division; how well they are accepted by the subordinates; the importance of hierarchical position;

- IDV: how strong is the preference for working in well-established groups; how high/low is the level of trust between familiar/unfamiliar people;
- MAS: what are the governing values in the organization; what are the major drivers for the way things are done and *what* is being done;
- UAI: how certain is the environment the organization and the employees are operating in; how rigid are the rules and procedures; how comfortable are the employees with these;
- LTO: is the focus of attention in the organization on the short- or the long-term goals;
- IVR: are there any components in rules/procedures/systems that are not strictly business-related.

#### UTAUT:

- Performance Expectancy: the reasons for implementing the system in question; views in the company on how useful it was, and how fit for the purpose, if any identified;
- Effort Expectancy: how easy it was perceived to use the system;
- Social Influence: was there any pressure on people to use the system, i.e., from peers or from the superiors;
- Facilitating Conditions and Self Efficacy: was there enough support in using the system if it was not self-explanatory;
- Attitude Towards Using Technology: what did people think about the system?
- Anxiety: were there any emotional problems with using the system?

## **Appendix 2: A Worked Example**

The materials in this appendix serve as an illustration to the within-case data coding and analysis process as outlined in the Methodology chapter.

It starts from presenting the raw transcript of a Skype interview with the first case's respondent, R1, a Portal Implementation Manager from PiggyBank, a St. Petersburg division of a commercial bank (Appendix 2a).

The reduced and coded variant is then presented showing the coding process (Appendix 2b), followed by a written-up case that was included into the Chapter 5, "Qualitative Results: Within-Case Analysis" (Appendix 2c – shown here for illustration purposes). As a whole, the three parts demonstrate the case analysis process from start to finish.

## **Appendix 2a: Raw Transcript**

**PiggyBank, Russia**

### **Part 1: Background Information**

**Q: Could you tell me about your role in the company?**

**A:** I am a Portal Implementation Manager – basically, the idea is that I work with the internal customers when they need a SharePoint portal, so I help them figure out what it is that they need, and then build it for them like from Lego blocks, configuring the system. I'm also a 'SharePoint evangelist', that is, I am supposed to be promoting the idea of SP, but that's more of a side line and not defined that precisely.

**Q: How would you describe your level in the hierarchy?**

**A:** A senior specialist. It's a bit hard to define, since I am spending most of my working time out of the hierarchy, more like an internal consultant, working with people who I share no formal reporting lines with.

**Q: Could you tell me more about the company?**

**A:** Well, you know we're a commercial bank, both retail and corporate. We're part of a multinational, have been in the country for a long time now, something like twenty years, well before my time. The headquarters are in Moscow, but there are branches all over the country – we've got a good presence. Generally, a nice and stable business.

**Q: And you are responsible for St. Petersburg?**

**A:** Yes, the St. Petersburg division – there are a few offices and retail branches. There's a team of us, people like myself.

**Q: If you are a multinational, what's the workforce like by nationality?**

**A:** All Russian by now, up to a very senior level. There are some expats, but very few. Even in the board something like seventy per cent are Russian, the chairman included.

**Q: What IT systems do you use?**

**A:** You can imagine, a modern bank, we're very IT-intensive. There's lots.

**Q: What about knowledge management in particular?**

**A:** Well, there's a fair bit of that as well – we've got a corporate sales portal to track clients' history. There's the retail task monitoring system, it's a bit like corporate portal, but with task tracking part, to plan and monitor tasks between departments. There's sales and service coordination portal, but that's a bit different, it's to coordinate small teams of experts, with synced calendars, shared contact lists, client case tracker, project register, personal tasks descriptors, a request management system, plus others – there's loads of functionality. There's portal for reports cataloguing – we're reporting so much you need a catalogue of them, and you can also suggest ideas for improvement there if you want. There's also a forum for that, the ideas, that is. The training department have their own portal too, but that's more like an online library of training materials. Then there's the financial security portal, but that's for whistleblowing if you notice something 'unusual'. There's a portal where updates to procedures are published. Pretty much all of it is on SharePoint.

And there are plans, too – they want to have a task planning system, but only down to the departmental level, and from there, the head of department would assign tasks off-line. They also want to have a portal for following up the sales – all the details, action planning, referrals.

Oh, and there's also your bog standard Intranet site, but it's pretty useless. It's basically news and corporate newsletter, training and info on the products we sell, some stuff on business skills, info on labour law and another ideas competition that's pretty dead.

**Q: Sounds like you've got a lot.**

**A:** Well, in terms of how many different things have been put in over the time, yes, but how many of them are used and why is a different matter.

**Q: What do you mean?**

**A:** Everything depends on the management.

**Q: Can we get back to this point in a second? Just one quick question before we move on: why SharePoint?**

**A:** Don't know why the top-level people, in the strategic IT, went for it, but my take is that it's a fairly flexible off-the-shelf solution, as I said, it's like a Lego, you can do a lot of different things with it, and it's customizable in-house.

## **Part 2: Cultural context**

**Q: So, back to your point about the role of management. Could you elaborate a bit more on the role of the management?**

**A:** In general, if it were not for the pressure from the top management, nothing would happen.

**Q: How would you describe the management and decision-making style then?**

**A:** Well. There is no initiative coming from the troops unless the boss, whoever that is, wants things to happen. At it has to come from the boss. You know like I was talking to a

head of department about a new portal, but he didn't want to do anything; he said they just didn't have the resources to implement the system I was on about, and I then said – you know what, it's the corporate who want to crank up the level of control, so I basically brought the big bosses into it, and I said that it was their decision - and they wanted you to do it offline, so every move would have a piece of paper filled out, and I am offering you an automated system that would save you all that time. He relaxed after that and took it all on.

So the style is quite hierarchical, so to say, and it also has an impact on what things are used for – you know like that task planning system I've mentioned, it's going to be interactive in principle, but the intention is to use it for the departments' heads to distribute things to the employees.

In some cases it gets a bit pushy, as well – you know, once every so often the boss really likes an idea and it becomes the new party line, even threatening a little. I've had it once, a senior guy really took to SharePoint and all departmental heads under him said "yes sir". One of them dared mentioning at a meeting that "some end users on the floor might be not that convinced in the technology", and the response was "But you are convinced, aren't you?" meaning that, well, if you're not, you'll get your butt kicked.

**Q: Is it accepted by the subordinates?**

**A:** Yes, that's just the norm. Yes, everything needs to come from above, it's just the way things are done here, it's more or less an unwritten rule: if the boss doesn't specifically want it, it's optional, even if there might be business reasons for it. As a rule, if the implementation was done sideways, i.e., horizontally, from another department's level, it wouldn't work. I've had it once, when we were trying to put something in place, and the receiving department, although generally happy with the technical side of things, started complaining about whether a "mere senior specialist should be leading a portal

implementation" – they thought it would be more appropriate for the whole thing to be led by the top-level corporate IT, not a mid-level person. I mean, what's the difference who does it? It's the same system anyway.

But it also goes the other way, you know the saying, 'the less you know the better you sleep'? That's the approach they have towards the bosses – generally, too much visibility is not seen as something good.

**Q: Like what – could you give any examples?**

**A:** We've had that interactive system for retail task monitoring for a group of ten people. All transparent and visible. Nobody really said much in public, but nine out of those ten, all mid-managers, were complaining to me on a one-to-one basis that it's all Big Brother stuff and they don't want to be 'monitored', that it's too much transparency and because they will know who's doing what and how long it takes a task to be completed. The only one not complaining was the manager who initiated the thing to start with.

Or there was another one like this - a head of department tried putting a task distribution thing on a portal, and nearly ended up with a riot on her hands. The problem was that if a task is assigned via emails, you can let it mature for a while and see if it's still relevant after a while and so on, you know, you can plan things in your own way; however, if it's up on a portal, the boss can see it. Interestingly enough, it didn't improve productivity, people just kept on doing what they were doing anyway, but everybody was really cheezed off.

**Q: So people avoid sharing too much with the boss?**

**A:** Well, it sort of goes both ways. They don't trust the workforce either. We were suggesting a piece of best practice from elsewhere whereby retail clerks would keep live records of their interactions with customers – what transactions done, what forms used and so on, to improve the system usability, but the manager refused. He said, since it's a

new thing and there's no history to compare with, they will be all making numbers up to in order to look better.

**Q: Well, OK, that's between the levels in the hierarchy. What about sharing with colleagues?**

**A:** Oh, that can be difficult as well. Generally, people don't like doing it because they think they'll be less valuable. It's like when somebody from a different department came to me to learn about how to work with SharePoint, but you know what, my job is not about how many portals someone else is putting in place across the bank. It's the opposite – if someone else can do it, that'll have an impact on my uniqueness as an expert. And it's the same all over the place, there's no push to counteract it in any way. As my boss once said to me: your value as an employee is measured by how much unique information you hold. How else would you justify a high salary? This way, if someone needs a report only I can run, and I am on holiday, they'll see how important I am.

It's between departments too – IT wouldn't let us too deeply into Sharepoint for the same reason; here's the thing: there's a lot of politics, and the IT wouldn't allow the business end to do things like that because they would feel threatened – you know, justifying their purpose, i.e., if the business departments can do it, why have IT around.

And another one for you – there was a coordination portal for a task force in sales and service, doesn't matter what they were doing. There were five of them, all specialised in something different, and the manager was like first among equals, an expert in his own field but knowing next to nothing in others'. So we put the portal in place, everyone was singing dithyrambs to how useful and convenient it was, but then they just stopped using it for no particular reason.

**Q: How important is it to know the person well in order to work with them?**

**A:** Very. You need to know the other person well, otherwise they won't trust you. So if you are trying to get them to share knowledge, say, between departments on SharePoint, with people they don't work together on a daily basis, it may be difficult. The politics plays the most important role at the inter-departmental level. Like, the head of retail banking granted access to their portal to the micro-business department, but asked for their contact database access in return – quid pro quo. In general, some departments may simply refuse to use the same portal or to share database access, like the corporate banking refused to share theirs with the retail guys who could use corporate clients as a retail sales channel. Why, go figure. There's no harm in it. All the retail people wanted was a few inroads into big companies.

In general, there's no trust between groups of colleagues; for example, we are sending out some database reports – there are 35 branches, and all of them get a separate section with their own customer data only, which is a big pain in the backside to generate, but when I asked why, they said that's because if "they", other branches, that is, get access to others' customer data, they'll go poaching. They sounded so sure as though there have been precedents, although I am not aware of any. But their customers are their bread and butter, so that's understandable.

It's interesting, though, that they would not share anything on SharePoint even if it's for the bank's good overall, like in that corporate-retail example. Only if there's something for their own team to be had.

**Q: How would you describe the values in the bank; are they leaning more towards delivering results or good relationships?**

**A:** Well, it's a commercial bank, so numbers are always somewhere on the horizon, but I wouldn't say we are particularly hard-driven. The climate is OK, but we're not like Google – I don't think a bank can be, anyway.

**Q: How rigid you would say the rules and procedures are?**

**A:** I would say, quite rigid, but again, we are a bank, so there's a lot of rules and procedures, and we are regulated, and it's all about the money – but I just think it could be any other way given what it is that we do. I know a few guys who work in other banks, and believe me, it's the same in other banks. Can't be helped, I suppose.

**Q: What do you think is considered more important in the bank, is it immediate goals or long-term ones?**

**A:** Uh, I don't know. It's a bit of both, I would say. Can't think of any examples, sorry.

**Q: Is there anything in the working life that is not business-related? Is anything done for fun at work?**

**A:** I couldn't say there's much fun going on, but then again: bank. You get an occasional New Year party or someone's leaving do when people sort of relax, but that doesn't count as 'at work'. Other than that, it's all very professional and businesslike. The same with systems, it's all serious, and even that competition I've mentioned is pretty useless.

**PE question omitted – covered in PDI section**

**Q: How easy to use would you say people find SharePoint?**

**A:** Not a problem, people are familiar with SharePoint and help is at hand. Besides, people are IT-literate by default. SP is just another system in terms of technical side of things. The

issues we have are not about the system itself, they're about who does what with it and why.

**SI omitted – covered in the PDI section. ATUT, FC and SE covered by answer above.**

**Q: Is there any anxiety in relation to SharePoint?**

**A:** Well, it's not the system per se, it's what it's there to do – as I said, it might make you too visible, might put you into sharing stuff you don't want to, so people might feel anxious about that, not the software.

**END of the interview – finishing remarks and close.**

### **Notes**

The interview lasted for about an hour, R1 talked a lot unprompted, a lot in response to the question about the management style, referring to the relationships with managers in terms of implementation and sharing knowledge and touching upon a few UTAUT-related things – in fact, most of UTAUT-related points came out of the earlier parts of the interview, related to PDI and IDV. There was a lot of frustration in terms of the reliance on the manager for things to happen. The technical side of implementation was unproblematic – the infrastructure in place, the level of IT literacy sufficient, hence the ATUT, FC and SE were of much lesser relevance. The issues identified were organizational (politics, hierarchy, trust), not technical.

H1 had many references in terms of managers passing things only downwards, 'troops' resisting sharing upwards and with other groups. There was evidence for H2 (e.g. separate reports) where out-of-group sharing was seen as strongly undesirable. H3 (UAI): job security and professional standing put at risk by the knowledge sharing system, which is an uncertainty-related concern. No strong MAS/FEM indicators and no particular link with the system (H4 supported), the same as with LTO – neither long or short term orientation instances, and no link (so, no evidence for H5). H6 supported weakly - there was a competition mentioned as "*useless*", but it was the only 'fun' component of the system, otherwise it is interactive, but serious.

## Appendix 2b: Reduced and Coded Variant

The raw transcript was first reduced, i.e., taken through the process of “*selecting, focussing, simplifying, abstracting, and transforming the data that appear in written up field notes and transcriptions*” (Miles and Huberman, 1994, p. 10). This was done in a number of ways. First, the background information about the company and the respondent, all factual – was condensed from a question-and-answer format into a brief narrative for convenience purposes. Some responses contained repetitions that were reduced, e.g.,

*“Yes, that’s just the norm. Yes, everything needs to come from above, it’s just the way things are done here, it’s more or less an unwritten rule: if the boss doesn’t specifically want it, it’s optional, even if there might be business reasons for it.”* (a verbatim piece from the transcript)

became

*“The implementation having to come from above was quoted several times, and it was said to be a ‘rule’”* (a re-worded sentence, not presented as a quote any more).

Some examples were re-worded where colloquial expressions and some details were not essential, especially where more than one example were given in response to a question:

*“But it also goes the other way, you know the saying, ‘the less you know the better you sleep’? That’s the approach they have towards the bosses – generally, too much visibility is not seen as something good... ...We’ve had that interactive system for retail task monitoring for a group of ten people. All transparent and visible. Nobody really said much in public, but nine out of those ten, all mid-managers, were complaining to me on a one-to-one basis that it’s all Big Brother stuff and they don’t want to be ‘monitored’, that it’s too much transparency and because they will know*

*who's doing what and how long it takes a task to be completed. The only one not complaining was the manager who initiated the thing to start with."*

became

"Some resistance from the lower levels towards letting the flow in the opposite (bottom-up) direction happen. The retail task monitoring system, a piece of groupware, was not received well (concerns expressed in private) by nine intended users out of ten (mid-level managers) because of "*too much transparency and because they [more senior managers] will know who's doing what and how long it takes a task to be completed*". The only person happy with the system was the manager in charge".

Furthermore, several passages clearly not related to the case in question, were deleted altogether, such as:

*"I know a few guys who work in other banks, and believe me, it's the same in other banks".*

The reduction was an iterative process, and as Miles and Huberman suggest (Miles and Huberman, 1994), it overlapped with coding and analysis to some degree.

Coding was done in several steps, concentrating in turns on Hofstede's dimensions (Step 1), UTAUT constructs (Step 2) and hypotheses-related evidence (Step 3) as described in Sub-section 3.9.1. ("Within-case Coding and Analysis", p. 149), using the table of codes presented in Tables 4 and 5 in the same section. Each step involved going through the transcript at least twice to ensure that no relevant evidence was missed and highlighting any emergent themes. In addition to codes, remarks and comments were left where necessary, however, no interpretation of data was done at this stage. All coding was done in MS Word using the 'comment' function. Although alternatives have been considered and

tried, e.g., nVivo, MS Word's functionality has proven to be convenient sufficient for coding the comparatively short cases. The following pages contain screenshots of the reduced and coded interview transcript.

#### Background information

R1, Portal Implementation Manager, PiggyBank. Initial contact via email, brief sent out, interview via Skype (all in Russian), ca. 90 minutes. R1's responsibilities: configuring SharePoint interactive portals to suit internal customers' needs (non-technical IT role – i.e., building portals as if from Lego blocks, not writing code) and to promote the idea in general. A senior specialist/internal consultant level.

Organization: a retail and corporate bank, a subsidiary of a multinational, all middle management Russian, 70% of the board are too, including the chairman. Overall about 20 years in Russia, headquarters in Moscow, branches all across the country. A stable business, no major events.

Generally very IT-intensive including a variety of knowledge management-related activities, mostly on SharePoint with Web 2.0 functionality: corporate sales portal for tracking clients' history; retail banking task monitoring system – similar to the above plus task planning and completion monitoring at the inter-departmental level; sales and service coordination portal (to coordinate small groups of highly specialized employees, with group activity planning - synchronized parallel calendars - and a shared contacts database, small tasks tracker allowing to build up clients' cases, project register, personal tasks descriptors, a request management system and various others); portal for reports cataloguing (reporting is a big part of the routine) and gathering improvement suggestions for them; improvement ideas forum with competitions; training department portal (a training materials library); financial security portal (a channel for anonymous reporting of any "irregularities"); procedures updates information portal.

Future plans: a planning system down to the departmental level, with the head of department splitting the actions further down, a portal with a "sales follow up" system with action planning, referrals and so on.

There is also an intranet site that R1 was quite negative about, calling it "useless". It contains things such as news and a corporate newsletter, training materials related to the products they offer and to the business skills, some information of labour-related legislation and an "ideas competition".

#### Cultural context

PDI

Very high level of dependency on the top management to drive any implementation processes: "In general, if it were not for the pressure from the top management, nothing would happen". "There is no initiative coming from the troops unless the boss, whoever that is, wants things to happen". If anything is not coming from the most senior level possible, actions can be resisted". An example of discussing a new portal with a head of department:

"...he didn't want to do anything; he said they just didn't have the resources to implement the system I was on about, and I then said - you know what, it's the corporate who want to crank up the level of control... and they wanted you to do it... offline, so every move would have a piece of paper filled out, and I am offering you an automated system that would save you all that time. He relaxed after that and took it all on".

Sometimes mentioning a level above would be enough, but sometimes the top-down deployment could lead to a system used by a manager to pass the information down without participation of the 'main audience', i.e., the team it was designated for (the task planning system was brought up - interactive in principle, but ending at the dpt. manager's level, strictly top-down) - i.e., a system launched by the boss would remain used by the boss.

In more extreme cases, if management believed that something, e.g., a portal, was important enough, it could be 'pushed through' and everyone would be ordered to use it, sometimes resorting to coercion:

Comment [PB1]: PDI+

Comment [PB2]: PDI+

Comment [PB3]: PDI+

Comment [PB4]: PDI+

Comment [PB5]: PDI+

Comment [PB6]: TDF

Comment [PB7]: PE, the importance of a system determined by what the boss thinks, not by how useful it is in the user's opinion

"I've had it once, the senior guy really took to SharePoint and all departmental heads under him said "yes sir". One of them dared mentioning at a meeting that "some end users on the floor might be not that convinced in the technology", and the response was "But you are convinced, aren't you?" meaning that, well, if you're not, you'll get your butt kicked".

The implementation having to come from above was quoted several times, and it was said to be a 'rule':

"As a rule, if the implementation was done "sideways", i.e., horizontally, from another department's level, it wouldn't work." I've had it once, when we were trying to put something in place, and the receiving department, [although generally happy with the technical side of things], started complaining about whether a "mere senior specialist should be leading a portal implementation" — they thought it would be more appropriate for the whole thing to be led by the top-level corporate IT, not a mid-level person".

Some resistance from the lower levels towards letting the flow in the opposite (bottom-up) direction happen. The retail task monitoring system, a piece of groupware, was not received well (concerns expressed in private) by nine intended users out of ten (mid-level managers) because of "[too much transparency and because they [more senior managers] will know who's doing what and how long it takes a task to be completed". The only person happy with the system was the manager in charge.

Another similar case:

"...a head of department tried putting [a task distribution thing on a portal] and nearly ended up with a [not on her hands]. The problem was that if a task is assigned via emails, you can let it "mature" for a while and see if it's still relevant after a while and so on, you know, you can plan things in your own way; however, if it's up on a portal, the boss can see it. Interestingly enough, it didn't improve productivity. People just kept on doing what they were doing anyway, but everybody was really cheeched off."

The management distrusts the workforce given freedom, would abuse it and try to make their results and/or the amount of work they put in look as good as possible.

Comment [PB18]: PDH+ a direct, coercive/financing behaviour from a senior manager.

Comment [PB19]: PDH+

Comment [PB10]: TDF, PDH

Comment [PB11]: An interesting example of SV, EE, and EC - the system itself is OK, but it's who is leading its implementation that is a problem. Also PDH+.

Comment [PB12]: PDH+ - status matters a lot.

Comment [PB13]: PDH+, status again

Comment [PB14]: TDF, this time from the lower level's point of view

Comment [PB17]: PDH+ and TDF, using an interactive tool to pass things down to the employees.

Comment [PB18]: Visibility-

Comment [PB19]: TDF, resistance to giving too much visibility to the boss, i.e., to pass the info upwards, albeit in a 'procedural' way, i.e., how things are going. Relevant nonetheless.

Comment [PB20]: It's interesting that the reaction was passively negative

Comment [PB21]: PDH+, TDF

"...we were suggesting a piece of best practice from elsewhere whereby retail clerks would keep live records of their interactions with customers – what transactions done, what forms used and so on, to improve the system usability, but the manager refused. He said, since it's a new thing and there's no history to compare with, they will be all making numbers up to in order to look better".

Comment [PB22]: TDF: An assumption that the information from below will not be reliable if it is generated by lower level. A sort of a Theory X view.

"Knowledge is power" attitude quite strong - knowledge seen as a valuable asset one could use to enhance one's standing, i.e., holding unique knowledge is perceived as something benefiting one's reputation as a valuable expert. No signs of the organization trying to neutralise this trend, and on one occasion the boss was instructing a more junior colleague on why it is important to keep it that way:

"It's like when somebody from a different department came to me to learn about how to work with SharePoint, but you know what, my job is not about how many portals someone else is putting in place across the bank. It's the opposite – [...] someone else can do it, that'll have an impact on my uniqueness as an expert".

Comment [PB24]: A general unwillingness to share knowledge.

Comment [PB25]: Same as above, URA\*, again, job security in relation to being disposable [if someone else can do it...]

and

"As my boss once said to me: "your value as an employee is measured by how much unique information you hold. How else would you justify a high salary? This way, if someone needs a report only I can run, and I am on holiday, they'll see how important I am"!

Comment [PB26]: URA\*, job security-related unwillingness to share in general

and sometimes even stopping processes that could in principle happen, but could be seen as undermining their expert power:

"...here's the thing: there's a lot of politics, and the IT wouldn't allow the business end to do things like that because they would feel threatened – you know, justifying their purpose, i.e., if the business departments can do it, why have IT around?"

Comment [PB27]: URA\*, job security

Portal for sales and service coordination designed to facilitate collaboration of five experts in their fields; the manager being just one of them and having only superficial knowledge of the others' areas. Very positive feedback to start with – "everybody was singing dithyrambs to how useful and convenient it was", but it fell out of use quickly and quietly,

Comment [PB28]: TDF, but it's an interesting one: there was a group of equals, a manager not being superior to them, and despite the P-E feedback to start with, in reality it turned out to be a P-E example, so it's more like a positive resistance to SI. A possible analogy with an egalitarian Will, similar group dynamic.

A high level of distrust between groups of people unless they work together on a day-to-day basis, low propensity for out-group knowledge sharing using 2.0 portals. [You need to know the other person well, otherwise they won't trust you"]

Comment [PB30]: coll.

Comment [PB31]: A very clear coll.

"The politics plays the most important role at the inter-departmental level. Like, the head of retail banking granted access to their portal to [the head of] the micro-business department, but asked for their contact database access in return – quid pro quo. In general, some departments may simply refuse to use the same portal or to share database access, like the corporate banking refused to share theirs with the retail guys who could use corporate clients as a retail sales channel",

and

"...there's no trust between groups of colleagues; for example, we are sending out some database reports – there are 35 branches, and all of them get a separate section with their own customer data only, which is a big pain in the backside to generate, but when I asked why, they said that's because if "they", other branches, that is, get access to others' customer data, they'll go poaching. They sounded so sure as though there have been precedents, although I am not aware of any".

But R1 accepts it: "But their customers are their bread and butter, so that's understandable".

Generally, knowledge is shared on SP only if there's a benefit to one's own group or maybe not at all even if there are business benefits from the company's point of view.

MAS/FEM

[Question about values in terms of results vs. relationships etc.] "Well, it's a commercial bank, so numbers [KPIs, results] are always somewhere on the horizon, but I wouldn't say we are particularly hard-driven."

Comment [PB38]: occ

Comment [PB39]: – no strong direct evidence either why for MAS/FEM.

Comment [PB29]: As a whole, the PDI section is very clear with a lot of strong evidence for high PDI. The PDI does not take extreme forms like a personality cult, but the evidence is consistently on the PDI+ side.

]

Comment [PB30]: coll.

Comment [PB31]: A very clear coll.

Comment [PB32]: str/P

Comment [PB33]: str/P, a refusal to use the system out of str/P

Comment [PB34]: coll.

Comment [PB35]: As above, str/P with a consequence for the use of the portal

Comment [PB36]: A coll. acceptance of such behaviour

Comment [PB37]: PE- business benefits of using the system have a secondary importance.

Comment [PB38]: occ

Comment [PB39]: – no strong direct evidence either why for MAS/FEM.

UAI

"...again, we are a bank, so there's a lot of rules and procedures, and we are regulated, and it's all about the money – but I just think it could be any other way given what it is that we do". NB – The out-of-group mistrust and job security concerns can also relate to UAI.

LTO

R1 could not give any examples. No indirect evidence either.]

IVR

"I couldn't say there's much fun going on, but then again: bank. You get an occasional New Year party or someone's leaving do when people sort of relax, but that doesn't count as 'at work'. Other than that, it's all very professional and businesslike. The same with systems, it's all serious, and even that competition I've mentioned is pretty useless".

Performance expectancy

Multiple earlier references to the top-down implementation – [what boss thinks how useful it is], as well as unwillingness to share knowledge on pragmatic grounds.

Effort Expectancy – "not a problem, people are familiar with SharePoint and help is at hand. Besides, people are IT-literate by default. SP is just another system in terms of technical side of things."]

Social Influence – covered at length at the beginning of the interview, very frequent references to pressure from above.

Comment [PB40]: OCC

Comment [PB41]: UAI+ but he is not sure it's the nature of the business himself, although put together with the other two symptoms, it could be an UAI+.

Comment [PB42]: No LTO trends.

Comment [PB43]: OCC

Comment [PB44]: IVR+ – apart from special occasions 'out of work', everything very serious.

Comment [PB45]: SLMG

Comment [PB46]: i.e., no initiative to do something even if it might be useful, unless prompted by the boss.

Comment [PB47]: Would also go towards ATUT, FC and SE, but not in the sense of the ATUT, FC, or SE; this sentence doesn't mean they are not important, but rather, that they are not an issue.

Anxiety - COLL-related point about out-of-group knowledge sharing. Not about the technical side of the system, but rather, what it is implying people are supposed to do with it.

#### Notes

The interview lasted for about an hour, R1 talked a lot unprompted, a lot in response to the question about the management style, referring to the relationships with managers in terms of implementation and sharing knowledge and touching upon a few UTAUT-related things – In fact, most of UTAUT-related points came out of the earlier parts of the interview, related to PDI and IDV. There was a lot of frustration in terms of the reliance on the manager for things to happen. The technical side of implementation was unproblematic – the infrastructure in place, the level of IT literacy sufficient. The issues identified were organizational (politics, hierarchy, trust), not technical.

H1 had many references in terms of managers passing things only downwards, 'troops' resisting sharing upwards and with other groups. There was evidence for H2 (e.g. separate reports) where out-of-group sharing was seen as strongly undesirable. H3 (UAI): job security and professional standing put at risk by the knowledge sharing system, which is an uncertainty-related concern. No strong MAS/FEM indicators and no particular link with the system (H4 supported), the same as with LTO – neither long or short term orientation instances, and no link (so, no evidence for H5). H6 supported weakly - there was a competition mentioned as "useless", but it was the only 'fun' component of the system, otherwise it is interactive, but serious.

## **Appendix 2c: Written-up Case**

Reduced and coded transcripts, such as in Appendix 2b, were further processed to be included in the thesis and to be 'stacked' with other cases during the cross-case analysis stage.

At this final stage of within-case analysis, the data was re-worked into a narrative highlighting examples of high or low levels of Hofstede's dimensions, UTAUT constructs, evidence for or against the hypotheses, and any emergent themes. At this point, direct quotes from the interview were used as illustrations to the narrative, and their volume was comparatively low, giving way to passages summing up the evidence and providing its interpretation, e.g.:

In some cases the matter could be seen as sufficiently important to insist on everyone to be an active part of it; the top management could resort to coercion and the subordinates would duly submit to pressure, giving a very clear example of the high-PDI relationship...

An sub-section dedicated to the assessment of the hypotheses was then added, along with a table summarising all findings of this case, ready to be stacked together with other cases' summary tables at the cross-case analysis stage.

## **Case One: PiggyBank, Russia**

### **Background Information**

The first case was based on an interview with R1, a Portal Implementation Manager in a company hereinafter referred to as PiggyBank.

The initial contact was made via email allowing for the background information to be gathered; it was followed by an interview via Skype. R1 was previously informed about the purpose of the project as well as the key elements of the theoretical framework, such as Hofstede's dimensions, which was done to allay any potential concerns with regards to confidentiality and the way the results would be used. All communication was conducted in Russian.

PiggyBank was a subsidiary of a well-established large European financial institution with a comparatively long history of operation in Russia, with the head office in Moscow and branches spread across the country. Despite it being effectively a subsidiary of an MNC with fairly strong corporate governance, 70% of the board members were Russian, including the chairman. Being very IT-intensive as one would expect from a modern financial organization, on top of the core business ICT it was actively involved in various kinds of knowledge management activities, predominantly using SharePoint, which included Web2.0 functionality. The list of KM systems included, but was not limited to:

- Corporate sales portal allowing to track clients' history;
- Retail banking task monitoring system – a system similar to the above, also allowing task planning at the inter-departmental level and monitoring their completion;
- Portal for sales and service coordination, designed to facilitate collaboration within a small group of highly specialized employees, the functionality allowing to perform

group activity planning (synchronized parallel calendars) and containing a shared contacts database, small tasks tracker allowing to build up clients' cases, project register, personal tasks descriptors, a request management system and various others;

- Portal for reports cataloguing, reporting being a big part of their day-to-day life, and gathering improvement suggestions for them;
- Improvement ideas forum with competitions;
- Training department portal (a training materials library);
- Financial security portal (a channel for anonymous reporting of any *irregularities*);
- Procedures updates information portal.

There were also plans to implement a few more: a planning system (notably, the intention was to use it down to the departmental level, from where the head of department would take over and split it down into individual tasks), a portal with a "*sales follow up*" system with action planning, referrals and so on. The bank had an Intranet site containing a fairly typical set of items such as news, corporate newsletter, some training materials on products and business-related skills, various labor law-related articles and even an "*ideas competition*", however, the site was reputed to be "*useless*".

## Cultural Context

The strongest trend was that of high **Power Distance (PDI)** confirming expectations based on Hofstede (Russia scores 93 points). It manifested itself, first of all, in a high degree of reliance on the levels above to drive the implementation processes and little initiative shown by the levels 'below' unless it was clear that the senior management desired certain

actions; moves not seen as fully supported by a level as senior as possible were almost openly resisted; R1 remarked:

*"in general, if it were not for the pressure from the top management, nothing would happen",*

and in more detail, talking about a discussion with a head of department about a new portal:

*"...he didn't want to do anything; he said they just didn't have the resources to implement the system I was on about, and I then said – you know what, it's the corporate who want to crank up the level of control... ...and they wanted you to do it offline, so every move would have a piece of paper filled out, and I am offering you an automated system that would save you all that time. He relaxed after that and took it all on".*

In some cases, like the one above, the allusion to the levels above could be enough. In some others, however, the top-down deployment could lead to a system used by a manager to pass the information down without participation of the 'main audience', i.e., the team it was designated for.

In some cases the matter could be seen as sufficiently important to insist on everyone to be an active part of it; the top management could resort to coercion and the subordinates would duly submit to pressure, giving a very clear example of the high-PDI relationship:

*"I've had it once, the senior guy really took to SharePoint and all departmental heads under him said "yes sir". One of them dared mentioning at a meeting that "some end users on the floor might be not that convinced in the technology", and the response was "But you are convinced, aren't you?" meaning that, well, if you're not, you'll get your butt kicked".*

It appeared that the top-down direction in the information flow manifested itself in two ways: first, the same as in previous examples, portal (i.e., Web2.0) deployment *had* to come from above:

*"As a rule, if the implementation was done "sideways", i.e., horizontally, from another department's level, it wouldn't work. I've had it once, when we were trying to put something in place, and the receiving department, although generally happy with the technical side of things, started complaining about whether a "mere senior specialist should be leading a portal implementation" – they thought it would be more appropriate for the whole thing to be led by the top-level corporate IT, not a mid-level person".*

There was evidence for some resistance from the lower levels towards letting the flow in the opposite (bottom-up) direction happen. In case of PiggyBank's retail task monitoring system, which was supposed to be a piece of groupware, nine users out of ten – all mid-level managers – were privately expressing serious concerns about too much transparency and the ability of the more senior managers to know exactly what was going on and to track their task completion rates. The tenth user, the only happy one, *was* that more senior manager. In another similar case,

*"...a head of department tried putting a task distribution thing on a portal, and nearly ended up with a riot on her hands. The problem was that if a task is assigned via emails, you can let it "mature" for a while and see if it's still relevant after a while and so on, you know, you can plan things in your own way; however, if it's up on a portal, the boss can see it. Interestingly enough, it didn't improve productivity, people just kept on doing what they were doing anyway, but everybody was really cheezed off."*

Furthermore, there were a few instances where the workforce was treated in accordance with a 'theory X'-style view (McGregor, 1960) that the workforce, given freedom, would abuse it and try to make their results and/or the amount of work they put in look as good as possible. Similarly, there was a certain level of distrust going the other way, in the sense that the workforce were trying to avoid too much visibility in the eyes of their superiors since it was perceived as giving them too much control.

*"...we were suggesting a piece of best practice from elsewhere whereby retail clerks would keep live records of their interactions with customers – what transactions done, what forms used and so on, to improve the system usability, but the manager refused. He said, since it's a new thing and there's no history to compare with, they will be all making numbers up to in order to look better".*

The 'knowledge is power' attitude was coming across quite strongly, and knowledge was seen as a valuable asset one could use to leverage one's political standing. Holding unique knowledge was perceived as something enhancing one's position in the company as a valuable expert. There were no signs of the bank trying to neutralise this trend, and on one occasion the boss was instructing a more junior colleague on why it is important to keep it that way:

*"It's like when somebody from a different department came to me to learn about how to work with SharePoint, but you know what, my job is not about how many portals someone else is putting in place across the bank. It's the opposite – if someone else can do it, that'll have an impact on my uniqueness as an expert";*

and

*"As my boss once said to me: "your value as an employee is measured by how much unique information you hold. How else would you justify a high salary? This way, if*

*someone needs a report only I can run, and I am on holiday, they'll see how important I am";*

and sometimes even stopping processes that could in principle happen, but could be seen as undermining their expert power:

*"...here's the thing: there's a lot of politics, and the IT wouldn't allow the business end to do things like that [implementing KM systems "sideways", from one department to another without involving the higher-level IT – PB] because they would feel threatened – you know, justifying their purpose, i.e., if the business departments can do it, why have IT around".*

The latter example highlights a point Hofstede was making about the role of a teacher (guru, expert and so on – anyone in possession of unique knowledge) and its relation to PDI. The knowledge can, too, form a basis for inequality – the 'above-below' distinction can be made based not only on hierarchical power, formalized or otherwise, but also on knowledge.

It might have an interesting reflection on the Web2.0 use from its participatory nature point of view: theoretically, in a high-PDI setting it would be expected that the knowledge is passed down not necessarily only from a figure endowed with hierarchical power, but probably just as well from an intellectual leader regardless of their position – in principle, they could be the same people, but they don't have to. It would mean that in a hierarchically homogeneous group with high PDI where no one can be seen as a 'better' expert than anyone else, 2.0 systems would not be accepted too readily.

An example of it can be seen in PiggyBank's portal for sales and service coordination designed to facilitate collaboration of five experts in their fields, the manager being just one of them and having only superficial knowledge of the others' areas. After very enthusiastic

initial acceptance and panegyrical feedback about its usefulness and functionality, it gradually yet quickly fell out of use.

The other dimension coming across rather strongly was **collectivism** (Russia's IDV score is a below-average 39 points, making it quite collectivist), manifesting itself in a high level of distrust between groups of people unless they were working together on a day-to-day basis, and a low propensity for out-group knowledge sharing using 2.0 portals:

*"The politics plays the most important role at the inter-departmental level. Like, the head of retail banking granted access to their portal to [the head of] the micro-business department, but asked for their contact database access in return – quid pro quo. In general, some departments may simply refuse to use the same portal or to share database access, like the corporate banking refused to share theirs with the retail guys who could use corporate clients as a retail sales channel",*

and

*"...there's no trust between groups of colleagues; for example, we are sending out some database reports – there are 35 branches, and all of them get a separate section with their own customer data only, which is a big pain in the backside to generate, but when I asked why, they said that's because if "they", other branches, that is, get access to others' customer data, they'll go poaching. They sounded so sure as though there have been precedents, although I am not aware of any";*

And interestingly, R1, although noticeably unhappy with the predicament, was accepting it as a norm:

*"But their customers are their bread and butter, so that's understandable".*

As a consequence, knowledge was shared only if there was a benefit to the host group and sometimes not shared at all despite a clear business case from the overall company's point of view.

There were no strong signs of **Masculinity or Femininity** (Russia's MAS score is 36 – quite low, i.e., feminine). Even though the aforementioned expert reputation was mentioned a few times, it was closer to concerns related to job security - 'if someone else can do it, how am I not redundant?' - rather than trying to assert one's superiority. At the same time, there was no evidence at all for any feminine trends such as striving for good relations, instilling fairness and so on.

The mistrust towards non-group members and concerns towards job security can also be interpreted as high **Uncertainty Avoidance** (Russia's UAI is 90 points). It is worth pointing out that the system, reliant on wide participation and sharing one's expert knowledge, would threaten both.

Russia resides in mid-scale in terms of **Long-term Orientation** (LTO), and there were no signs either way, which is the picture to be expected. Short-term orientation would manifest itself in people trying to reap immediate benefits, or similar behaviour, whereas a longer-term attitude would show as them putting more effort in without an immediate payback, but hoping to get better returns in the future. The long/short term split was completely absent from the evidence.

Finally, as far as **Indulgence vs. Restraint** is concerned, the bank came across as a strict business-like enterprise without much space for any frivolity, which is in line with Russia's very restrained 20 IVR points, but is also possibly characteristic of banks as a whole. The Web 2.0 systems were also used in a strictly business-related way with no social element in it. The only instance of something resembling 'fun' was the ideas competition, which, quite indicatively, was reputed to be 'totally useless'.

Overall, the culture in PiggyBank could be described as high in power distance and collectivism, possibly uncertainty avoidant, neutral MAS- and LTO-wise, and restrained.

## **UTAUT Constructs**

As it was mentioned in the Methodology chapter, UTAUT is a theory that lists a number of factors that have been shown to influence people's decision as to whether they would use a piece of technology or not.

In this case there was evidence related to three factors out of seven: there was strong reliance on **Social Pressure**, especially in a top-down direction. There was also a degree of apprehension (**anxiety** in UTAUT terms) from the lack of trust between groups' point of view. **Performance Expectancy** (how useful the system is believed, or expected, to be) was, on a number of occasions, overshadowed by political considerations (i.e., even when business benefit was to be had, political pressure prevailed).

## **Assessment of the Hypotheses**

There a fair amount of evidence in support of H1 – the top-down information flow existing and impeding on the adoption and use of the system. H2 – the preference for stronger ties and unwillingness to go beyond one's immediate group – was supported, as was H3, the UAI-related one, in the sense that the system was putting one's job security and professional standing at risk. The H4, MAS-related one, suggesting that there would be no link, was supported too. There were no instances of H5. H6 had one example (the competition), which was not particularly strong.

## Case Summary

The key findings from the case that will be used in the cross-case analysis in Chapter 5, are presented in the table below.

Cultural Background						
Power Distance	Individualism	Uncertainty Avoidance	Masculinity	Long-term Orientation	Indulgence vs. Restraint	
Quite high, in accordance with Hofstede (H.).	Collectivist (low IDV), in accordance with H.	Some evidence for possible uncertainty avoidance.	Non-masculine, in accordance with H. No feminine tendencies.	No evidence either way.	Restrained (agreeing with H.)	
UTAUT Constructs						
Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Attitude Towards Using technology	Self-Efficacy	Anxiety
Secondary to the SI: the pragmatic value is undervalued in comparison to the boss's opinion.	Absent.	Very important, especially the boss-to-subordinate relationship. Politics is a key factor.	Absent.	Absent.	Absent.	Some present, linked to low level of out-group trust.
Hypotheses Testing						
H1	Supported. In a high-PDI environment, SharePoint was implemented and used in a top-down way, with little to none bottom-up or sideways knowledge exchange happening. As a consequence, SP was used only as and when the senior managers wanted it to. No grassroots initiative or active knowledge sharing on SP between peers evident.					
H2	Supported. There was evidence showing that the propensity to out-group sharing was low due to low level of trust. The successful use of SharePoint was implying an evidently uncomfortable level of cross-boundary collaboration.					
H3	Supported. The system was forcing people into working with non-group members as well as sharing one's expert knowledge, thus threatening one's professional standing and job security.					
H4	Supported. There was no evidence of a link between MAS and SharePoint.					
H5	No evidence either way.					
H6	Weakly supported: the only 'fun' component on the system was not received very well.					