Design thinking for public good: moving towards change?

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Abstract
This paper analyses the experience of a co-funded European Commission project that aimed at diffusing design thinking methods, particularly from the toolkit (IDEO, 2014), across libraries in three countries: Italy, Portugal and Romania. Aarhus library (Denmark) development and practices were taken as the main reference (or best practice). The key issues explored in this manuscript regard: continuity of networks and sustainability of the design approach learnt. In order to better define this analysis' contributions, we suggest the following questions considering this specific project experience:
– What aspects hinder and which ones contribute to carrying out the project among different countries afar?
– Which are the critical factors that can support design thinking approach implementation and sustainability?
– Will the networks be kept and evolve towards more innovative scenarios after the end of the project?
We point out our learnings, positive implications for public libraries, and criticisms faced. From these, we start drawing on best practices, and suggestions for scaling up a human-centered approach across European libraries in order to contribute to building the legacy of this kind of project.

1. Design thinking for public good: challenges for the future of public libraries

This paper aims at contributing to building the legacy of design thinking for public libraries projects. We analyse the experience of New Challenges for Public Libraries (NEW LIB) project which was carried out from 2016 to July 2018 in libraries from Italy, Portugal and Romania. Aarhus' library (Denmark), DOKK1, was the best practice regarding its participatory approach based on design thinking principles. The NEW LIB project aimed at creating a network (or a transnational community) of public libraries across Europe in order to share good practices and to experience design thinking approach. Active participation of citizens in the conception of new services is the main novelty for libraries promoted by design thinking methods. The changes in the way people learn, communicate, and appreciate public spaces or changes in people needs spurred by TI (Technology Information) evolvement lead libraries to facing new challenges to attract diversity of users which require new perspective and ways of crafting its services. Design thinking can support this transition towards a human-centred perspective on public services conceptualisation.

1.1. Design thinking for public good

Although design thinking principles application is noticed from the 1960s, its emergence is recognized in the 2000s. Currently, this design approach comes into public life in order to improve the welfare of communities, and make sense of public structures and institutions to citizens. This need is also unleashed by political and economic conditions characterised by budget cut throughout neoliberalisation processes and financial crisis (Julier, 2017). In this context, the public sector has to provide better solutions and opportunities with less money (Julier, 2017). Moreover, the lack of familiarity of public sector's members with citizens' day-to-day problems and challenges is another constraint (Junginger, 2014). Hence, design starts playing a crucial role as a skill that should be part of public service's members and policy makers competencies, not just as a problem-solving activity but as a way to build desirable futures (Junginger, 2014).

1.2 Definition and characteristics of Public Libraries

Citizens might have different impressions of their local public libraries. There are several definitions of public library (i.e. Holden, 2007; Levien, 2011; Morris, 2014). These definitions are very similar, such as: Public libraries are established by means of taxes and overseen by governing bodies to provide equitable, optional, access to books or physical artefacts free of charge for everyone (Morris, 2014).

There are 5 fundamental characteristics shared by them:

1. They are generally supported by taxes (usually local, though any level of government can and may contribute);
2. They serve the public interest;
3. They are opened to all, and every community member can access the collection;
4. They are entirely voluntary in that no one is ever forced to use the services provided;
5. They provide basic services without charge.

Levien (2011) describes the advantages of libraries in 6 'Ps':

- People - The library's staff of professionals are available to provide unbiased service to individuals at no charge and often with little or no delay. These professionals will serve as the library's driving force for adaptive change.
- Place - Most libraries offer physical facilities that are quiet, private, and comfortable for reading and reflection, as well as meeting places for small or large groups.
- Price - All public libraries provide services to their patrons at no charge.
- Principles - The principles that guide almost all libraries and librarians - freedom of access to a diverse range of information, privacy with respect to information about patrons and the media they use, and unbiased assistance and recommendations. Gaiman (2013) also emphasises freedom as the main value of public libraries.
- Pride - Most public libraries are the source and subject of community pride where funds are available. This pride is often evidenced through the quality of the building and its facilities.

– Package - An overall advantage of libraries is that they have combined all their information, education, and entertainment functions in one package.

The UNESCO Public Library Manifesto states the library as "the local gateway to knowledge, provides a basic condition for lifelong learning, independent decision-making and cultural development of the individual and social groups" (Unesco Library Manifesto, 1994). A report by the Arts Council England defines public libraries as "trusted spaces where people can explore and share reading, information, knowledge and culture" (Arts Council, n.d.). Watson goes further and suggests that public libraries should be regarded as "a showroom for culture and learning, a place that celebrates creativity, encourages exploration and discovery, helps people work productively, and provides community engagement and empowerment" (cited in Morris, 2014).

1.3 Challenges for public libraries in the digital transformation era: opportunities for design thinking approach

There are 4 major trends that shall shape the future and pose serious challenges to libraries:

1. continued digital media and technologies advances,
2. financial constraints,
3. increased competition,
4. demographic transformations and social trends.

Factors which have driven these trends are explained below:

Advances in digital media and technologies

There are huge changes in the way we consume, interact and communicate considering the advances in information and media. These changes affects our literacy and reading habits.

Virtual publishing - The shift from paper to digital information is a paramount change (Holden, 2007). There is vastly more information available directly to users through a diversity of services such as Google Scholar and eBooks. This is rising exponentially as well as virtually published materials, and most future publications will be in digital format. eBooks are undergoing a rapid development, including graphic, audio, video, social interactivity, web interconnectivity and many other multipurpose functions. Newly published media and a substantial portion of prior published media will be available in digital format in the coming decades - indeed, generally only in that form.

Instantaneous information - Information has been used on a just-in-time basis, the Internet serves as a ready reference source, anytime, anywhere. People can compare and select services at the click of a button.

Information for free - Much information is for free, however, it is difficult to verify its reliability. User-created contents are growing and information has been increasingly linked and enhanced in novel ways. Information is becoming more social, strengthening ties between information providers/sources and users.

New facilities - New technologies with a range of facilities continue to emerge shaping our society and the way we deal with information. The diversity of devices is still expanding and

evolving, becoming even more mobile. In the future, storage will be faster, physically smaller, cheaper, and will have greater capacity. Communication will reach unimaginable speeds, high-quality displays will be linked to entertainment, information and other communication systems, cloud services will continue to spread as well as social networks, new search and organisation tools.

These trends are challenging for libraries but also provide opportunities to develop new services for and perspective on patrons (users, citizens) as active partners in service design and maintenance.

1.4. Libraries' trends

Libraries are still facing the challenge of evolving as their users' needs change. Design methods which help face this challenge often need to be tweaked when they are put into practice. The development of a participatory culture is one of the means to effectively get these changes earlier, providing the dynamic required to upgrade libraries' practices, capabilities, and space.

Participatory culture in public libraries

A wide range of user-oriented activities such as public meetings, cultural events and different kinds of workshops should be held in order to meet users' needs. Participation refers to activities taking place in the physical library. Three characteristics of participation in libraries are common across digital and physical spaces:

From access to user participation

Traditionally, accessibility has been the great challenge for cultural policy. Public libraries have been a cornerstone in securing access to knowledge and literature. The concept of citizens' active participation in cultural life raises in the wake of Web 2.0 participatory culture. In this context, citizens should not only be spectators of highbrow art, but should also have access to the means of cultural production and distribution.

From one-way communication to dialogue

One-way communication is replaced by dialogue in conversations or other forms of communication. This is different from the traditional communication style held in public libraries. Libraries become places where people can create and share culture besides access provision. Dialogue becomes the dominant form of communication.

From clients to partners

Libraries aimed at supporting empowered citizens in the past. However, library users were often seen as clients without many resources. In the wake of Web 2.0, new images of the users arise. Users of social media are not merely consumers of contents but are also producers of contents. Similarly, the image of the user has been changing within public libraries, the user has become a partner rather than just a client. Specifically, this involves co-creation, where libraries invite users to be partners in the creation of the library's content

(e.g. creating events or when users' creations become part of the library collection) (Rasmussen, 2016).

1.5. The four spaces theory

The development of the Internet, and trends towards globalization, detraditionalization and cultural liberation have challenged libraries. The role of the physical library has changed from a passive collection of books and media to an active space for experience and inspiration, and a local meeting point. We might speculate about a transformation from 'collection to connection' or even from 'collection to creation'.

A model for the future public library outlines four spaces in the public library which support 4 future goals: Experience, Involvement, Empowerment, and Innovation. The four spaces are not to be seen as concrete 'rooms' in a physical sense; rather, they should be seen as possibilities that can be fulfilled both in the physical library and in the cyberspace.

The four spaces model can be a concrete tool for designing, developing and redesigning the public library (Jochumsen et al., 2017). The four spaces are (Jochumsen et al., 2017):

The Inspiration Space

The space for meaningful experiences (i.e. experiences that transform our perception). This can happen through storytelling and other artistic expressions within media, culture patterns and genres.

The Learning Space

The space where children, youngsters and adults can discover and explore the world and thereby increase their competencies and possibilities through free and unrestricted access to information and knowledge through playing, artistic activities, courses, and other activities.

The Meeting Space

The meeting space provides the frames for non-committal, accidental meetings in both small intimate spaces as well as in lounge areas with newspapers and café facilities, and through more organised meetings, where topics and problems can be analysed and discussed.

The Performative Space

A space where the users can be inspired to create new artistic expressions or inventions by accessing media, materials, tools, mentors, workshops, entrepreneurial skills, and scenes for staging events. The performative space aims at supporting creativity, innovation, and new production environments in the local community (Jochumsen, 2015).
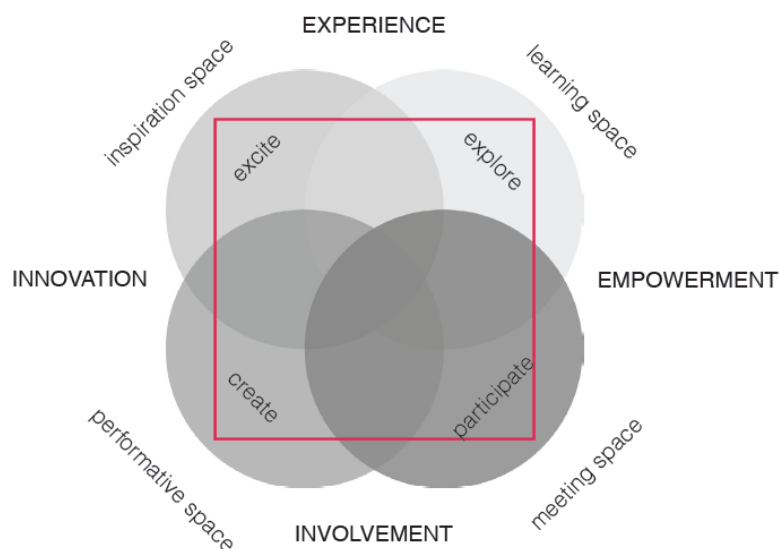
Figure. 1. The four spaces model (Jochumsen, 2015).

2. Design Thinking for Libraries: the experience of New Challenges for Public Libraries (NEW LIB) project

Considering the changes which are impacting the innovation in public libraries, NEW LIB project has developed activities in 5 European libraries, experimenting design thinking for libraries approach based on the toolkit developed by IDEO in partnership with Aarhus City with the support of the expert partner DOKK1 (IDEO, 2014).

DOKK1 was the first library in which IDEO has tested the method and the tools. A schematic representation of the design thinking process, together with the tools, activities, and goals related to each step shows the overall process adopted by the libraries which took part in NEW LIB (Table 1):

Table 1. NEW LIB goals, activities and tools framework adapted from IDEO (2014).

Phases	ISPIRATION	IDEATION	ITERATION
Goals	To frame a design challenge and to discover new perspectives on the opportunity	To generate ideas and to make them tangible	Continual experimentation based on users' feedback
Activities & *tools*	Listening, observing, and being opened to unexpected discoveries. *User interviews; Expert interviews; Observation; Immersive experiences.*	Transforming research into actionable insights that will underpin tangible design. *How Might We Questions; Brainstorming; Prototype building.*	Iterating and getting feedback. *Prototype testing; Mini-pilot; Observation; Interviews.*

The Toolkit (IDEO, 2014) describes the Design thinking approach: "design thinking relies on our ability to be intuitive, to recognize patterns, to construct ideas that resonate emotionally and rationally, and to be expressive through action. The design thinking process starts by assessing people's needs which is why it goes hand in hand with a methodology we call "human- centered design"… Design thinking is also a mindset because you start to view the world like a designer, even if you aren't one. Thinking like a designer isn't about knowing how to draw, it is about embracing the unknown and being creative in the face of ambiguity. Adopting a designer's mindset enables you to see problems as opportunities and gives you confidence to start creating transformative solutions. We know this approach might be different from the way you normally work and the idea of not knowing the end result can be scary, but keep in mind it is important to trust the process."

The 5 libraries involved in the NEW LIB project with the challenges were (Table 2):

Table 2. NEW LIB libraries, teams and challenges.

Library	Team	Challenge
Il Pertini Library Cinisello Balsamo Milan, Italy	3 librarians 2 newly graduated designers 1 reporter	How might we introduce news on new media in the library platform and space to newsreaders that might not have experienced it yet?
Agorà Library Arese Milan, Italy	3 librarians 2 designers 1 reporter	How might we provide practical solutions in order to fulfill young people's basic study-related needs in a way that preserves opportunities and spaces for the other patrons?
PuntoCerchiate Cerchiate –Pero Milan, Italy	3 librarians 2 designers 1 reporter	How might we make the library the tool to build the community of Cerchiate?
Nicolae Jorga County Library Ploiesti, Romania	4 librarians 1 designer 1 reporter	How might we can attract young people to the library and what services can we develop for young children?
Lucio Craveiro da Silva Library Braga, Portugal	3 librarians 1 designer 1 reporter	How might we turn the library into an appealing environment for young adults?

Moreover, 9 tutors and mentors from Denmark (DOKK1), Italy (Milano-Bicocca and Politecnico

di Milano), and Romania (Progress Foundation) supported the development of activities.

3. Positive implications of Design Thinking

The overall positive design thinking implications for the evolvement of libraries regarding local communities' life were:

3.1. Change of mindset
The NEW LIB experience has demonstrated that design thinking for libraries helps create a new mindset and vision. At the same time, it is a useful tool for education and training in the field that could be extended to other European realities. The Tool (open access to the Design Thinking Platform) and the deliverables of the NEW LIB project (videos, the digital stories, the MOOCs, and the outcomes of the projects developed in the libraries are available on the NEW LIB website[1]) have the ambition to disseminate the possibility for this change of mindset to a large community of libraries in Europe.

3.2. Long-term perspective on innovation
The most successful implication of the design thinking approach is its capacity to help librarians develop their skills in order to not only improve their public services, but also create appropriate conditions to enhance transnational circulation and cross-border networking. The digital transformation challenges and the need to create a new long-term relationship with users, non-users and stakeholders through co-creation activities have supported the learning experience of librarians and designers. This experience enabled to define projects' roadmaps and visions which comprise outcomes (short-term) and impacts (long-run).

3.3. Empathy with the local community
The Human-Centered innovation and Design Thinking methods for co-design and citizens' participation support the capacity to involve users and "non-users" in co-creation, ensuring as much as possible the accessibility, inclusivity, and impact of activities. The empathy promoted by the direct engagement of local communities aiming at designing the future of the library together is one of the most important implications for the librarians' attitudes towards further development activities after NEW LIB experience.

4. Criticisms

Some criticisms met throughout the project were:

4.1. Teamworking and skill building
A critical element of innovation in the application of design thinking for libraries compared to the prior experience of DOKK1 expert partner was the introduction of two experts in the team beyond librarians: a designer, and a reporter. The team was composed of actors with diverse

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[1] http://www.newlib.eu/

backgrounds (librarians, designers and reporter). This led to the need to adapt specific activities which enabled the collaboration and helped solve conflicts. Every innovation process requires a change in the organization. This change usually meets the reluctance of people towards it. One of the lessons learnt from NEW LIB was the relevance of managing the design thinking process aiming at positive impacts not only at the level of outcomes (new services, new activities, innovation in the space etc.) but also at the organisational level.

4.2. Territorial dimension
Trying to create a transnational community around active European public libraries to share good practices and to test the Design Thinking approach means the need to consider the territorial and local dimension. There are different rules and policies for the management and the innovation of public services in the countries involved in the project (Italy, Portugal and Romania compared to the experience in Denmark). They need to be considered at the outset of the design thinking process. In some cases, the direct engagement of policy-makers in the process can facilitate the decision-making, and the management of the schedule of the activities throughout the three steps (inspiration, ideation and iteration).

4.3. Impact of policy
The policy level should be considered as an important value for the long-term innovation vision in public libraries. In some libraries which took part in NEW LIB the design thinking challenges were defined according to a general plan of development of public services. However, the variability and the decision-making timing of policy-makers unleashed problems in the development of the activities. In other cases, it would be better the direct engagement of decision and policy-makers in the beginning of the process and not only at the end, in order to create a better synergy with the local plan of development.
Some limitations were also noticed regarding the use of the toolkit (IDEO, 2014). They indicate opportunities for further improvements. They were identified as follows:

4.4. The toolkit requires facilitators
The toolkit (IDEO, 2014) requires design facilitators in order to better make people grasp and apply its approach. Who is using design thinking for the first time can take the content as a 'rule' rather than an example and tool.

4.5. The need to share/spread learnings
The reflection on the setbacks is so important as is the project itself. Understanding what can be better done as soon as possible, involving and spreading this reflection across all stakeholders is critical to further developments, implementations, and design thinking projects legacy.

4.6. The need to look at libraries beyond the project
Cases that can be considered best practices or have promoted outstanding changes appreciated by users should be explored and better understood.

4.7. The need to look at what is happening in the world

For instance, how TI and other external influences have impacted and changed people's lives and experiences, the way people learn and communicate are important features to be regarded. These changes affect the need for libraries according to their ability to upgrade their services, fulfilling citizens' expectations and needs.

4.8. The need to distinguish which is an individual's interest and which is a public good

During design thinking processes diverse needs from users/citizens can arise. Facilitators help promote symmetry of users' participation as well as guide librarians in participatory approaches in order to emphasise potential ideas that can have a better outcome and impact to all participants/community.

4.9. The borderline between citizens and public servants

The active participation of users is seen as a positive feature for maintenance and evolvement of public services. However, issues arise among citizens, such as: What is the level of involvement and responsibility can be held by citizens? What should be a public service responsibility or duty? Citizens as tax payers (or citizens as clients), and public servants face these issues. Hence, sharing the responsibility with citizens when giving them autonomy to contribute to new solutions and maintenance of these might balance the situation, supporting participation.

5. Learnings

Most learnings are not new in the field of design management and organisational studies. However, they have not been considered enough in design thinking practices.

5.1. Top management support is a crucial issue to move forward

Libraries' leadership can hinder or foster design thinking introduction and development. The top management members' awareness of design, embracing the project, is essential to move forward during the project implementation and after its closure. This aspect is also emphasised in design management research (Bitard & Basset, 2008; Cawood, 1997; Filson & Lewis, 2000; Larsen & Lewis, 2007; Schneider et al., 2015).

5.2. The ability to communicate and spread the design thinking culture to other peers in the library

Other peers of librarians who do not directly participate in the project play a fundamental role in tasks accomplishment and collaboration towards the consolidation of a cultural change that is based in the transition from libraries as a place for books to libraries as a place for people's needs (or as a community hub). This transition involves the change of mindset and services' logic in order to put citizens in the core of libraries' processes and services as well as to share responsibility, and to implement participatory approaches to designing potential ideas. Thus, thriving design thinking approach in libraries requires the communication of the projects'

happenings and their 'why' to others inside and outside the libraries.

5.3. The ability to persuade or to convince the leadership about the idea potential

The teams need to go beyond the conception of good ideas, they need to be able to use design thinking tools in order to contribute to evidencing the 'why', advantages, benefits and reasons for implementing an idea, showing their discoveries about citizens' needs in a synthetic and compelling way.

5.4. Diverse political environment and cultures require different approaches to introducing design thinking

Some organisational environments showed more openness to design thinking than others. In this case, top management support was a critical issue. Top management support in public libraries is connected to the political and cultural climate, approach, and priorities. The Danish culture has a historical bottom-up approach to decision-making in politics that is convergent with design thinking principles. This might facilitate design thinking adoption, consolidation and evolvement. Other countries are not characterized by the same political background, and bureaucratic and cultural constraints to implement new ideas might arise during the project. Therefore, assuring the design thinking awareness of future leadership partners becomes a key factor to familiarize librarians with design thinking and to further keep its evolvement in the library's processes and librarians' ways of thinking and doing.

5.5. Good communication is still critical to project success

Communication is a critical factor for project success in the project management field (PMI, 2012). The need for an introduction to all actors involved regarding: deadlines, tasks' responsibilities and roles (who does what and why), project goals as well as periodical updates were crucial aspects noticed throughout project implementation. Everybody needs to understand their roles and what is expected as an outcome of their tasks, and deliveries as well as the reasons for doing those activities and the relation to the whole project. This becomes even more evident when dealing with people with different backgrounds, cultures and immersed in diverse political contexts which can require bureaucratic processes and might be used to a top-down approach in order to enable changes.

5.6. Embracing risks and testing ideas

Teams which embraced the risks from the outset of the project test more ideas and seem to learn more about their users' needs. While, teams that lack autonomy, depending on permits from top management to move forward, feel discouraged and have less chances to learn and to earlier make mistakes. Research on creativity (Sternberg, 2006, 2012) and on innovation (Poirier et al., 2017) emphasise the importance of a risk-taking attitude towards innovation.

6. Building best practices

6.1. DO set out the importance of the benefits of design thinking awareness as criteria to select partners

Partners need to be aware of design thinking benefits and to be opened to the changes it can promote in order to support teams throughout the project and to keep design thinking culture evolvement after project's closure. The library as a space for people (community) rather than for things and books is the main mindset change required. Otherwise, the lack of alignment between teams which are experiencing the methodology in practice and their leadership can hinder activities development, learnings building and diffusion.

6.2. DO communicate project reasons, goals and roles clearly

All members who join the project need to understand their roles and reasons for accomplishing the activities proposed, understanding these, and their connection to the whole project and its goals as well as the potential benefits for libraries and their importance to users.

6.3. DO upgrade project information periodically

To establish periodical meetings in order to monitor and upgrade project information can help keep the teams' energy high and can facilitate to keep the pace of the project in different geographical locations. This can work as a stage gate process to move forward and solve questions, and can help build (or reinforce) trust among project members. Hence, the network might better evolve or be kept after the project end.

6.4. DO consider diverse backgrounds

Most people who join the project are non-designers. Therefore, explaining the approach and its value on the process rather than on its immediate outcomes becomes essential to understand the benefits of using it. Hence, providing examples that evidence the experimental value and setting out linkages to current cases which show the dynamism of real environments can help clarify this issue.

6.5. DO go beyond the design thinking bubble

To look at other best practices beyond the project and to be updated about what is changing in the world regarding the way people get knowledge and information, use public spaces, communicate, and appreciate life become crucial to come up with ideas that might be fresh and make the library even more helpful to communities. Sometimes, users are not able to tell what they want, or to imagine what can be done.

6.6. DO involve users consciously in the process

All activities in which users participate need to be introduced, explaining the importance of their contribution, what is expected from them and from the project, pointing out the limitations. For instance, some users who have never participated in this kind of activity can imagine that all ideas are going to be implemented, and can get frustrated afterwards, discouraging others

to join. Thus, a good HMW question which defines the issue to be solved, providing prior information about the methods used, and a design thinking facilitator during sections with users can help.

6.7. DO share responsibility and DO foster autonomy

The responsibility of new services creation, implementation and maintenance need to be shared with citizens, who need autonomy. Citizens need to feel safe about the use of the library resources. Municipalities need to develop ways of sharing responsibility with citizens since citizens are contributing to the creation of new services and their maintenance. Otherwise, citizens can feel discouraged to move forward once something goes wrong or the library is damaged, and they can be considered 'guilty'.

7. Scaling up human-centred innovation in public libraries

Positive and critical aspects emerged from the NEW LIB experience. The analysis of challenges and transformations that are impacting public libraries, the Design Thinking for Libraries toolkit along with the lessons learnt from the NEW LIB experience can support other libraries in crafting the transformation towards a Human-Centred Innovation approach, improving services, activities, and particularly fostering the relationship with local communities. Some lessons were:

- support the change of mindset and the teamwork, creating multidisciplinary teams with librarians, designers and reporters able to use empathy with local communities, engaging them;
- apply the design thinking approach methods to support librarians' learning experience and skill building activities, establishing a long-term innovation perspective;
- try to create a transnational community around active European public libraries to share good practices and to test the design thinking approach;
- consider the territorial and local dimension;
- consider the policy level as an important value for the long-term vision of the innovation in public libraries.

Every innovation process brings changes to the organisation which might meet the resistance of people in modifying their attitudes. We need to consider specific teambuilding activities to manage design thinking processes aiming at positive impacts not only at the level of outcomes (new services, new activities, innovation in the space etc.) but also at the organisational level.

8. Conclusion

The continuity of design thinking practices depends on the openness to this approach as well as the way it is understood and practiced throughout the project by team members, the leadership and other peers in the libraries. Embracing the risk of testing ideas with users as active participants in designing makes the difference to the process of change. However,

teams in which there is the lack of top management support have difficulties in adopting a risk-taking attitude.

This paper points out our learnings and suggestions to contribute to building design thinking projects legacy in the libraries' contexts.

Design thinking contributes to bring users (patrons or citizens) voices to the libraries' practices and processes. There is a huge potential to make libraries a public space where a diversity of users/communities can find what they need. The human-centered and experimental nature of design thinking are the main values to be taken in by librarians' teams and top management of libraries in order to tackle a dynamic environment considering changes in citizens' needs, and opportunities for communities to thrive.

The openness to design thinking approach is not taken for granted. Some people show more propensity to embrace the methodology within organisations, others tend to need quantitative evidence to justify its use. The reflection on the setbacks is so important as the project itself.

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