Dokk1: co-creation as a new way of working in libraries

by Sidsel Bech-Petersen

Design thinking for libraries

When Dokk1 opened its doors to the public on 20 June 2015, it became Scandinavia's largest public library, representing a new generation of modern, hybrid libraries. The leading idea about the building is that the library space is a covered urban space – and this space is for people, not just books. And this is why the process of building and planning Dokk1 had to be a participatory and involving one. Through hundreds of workshops, meetings, interviews, focus groups and prototyping we have involved citizens, stakeholders, partners, politicians etc[1]. Only by involving the people who were going to use Dokk1 was it possible to generate a lively urban space. Furthermore, it was important for the project to establish

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Learn more about Dokk1 at <dokk1.dk/english>. Join our international Next Library Community at <nextlibrary.net>. Next Library 2017 is 11-14 June at Dokk1 in Aarhus.

If you have examples or ideas about user involvement or if you have comments feel free to contact Sidsel Bech-Petersen.

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1 Peter Dalsgaard; Eva Eriksson, *Large-scale participation: a case study of a participatory approach to developing a new public library*. In: *CHI '13: proceedings of the SIGCHI conference on human factors in computing systems, Paris, France, April 27-May 2, 2013*. New York: ACM, 2013, p. 399-408.

network and cooperation that involved institutions and local Aarhus companies in order to have them contribute with knowledge sharing, sparring and inspiration.

In a process like this, citizens serve as inspiration and provide insight into what needs to be changed. In the light of this development, the libraries are heading towards a new innovation practice that focuses on co-creation with the users. This means including the users and activating the knowledge that they may not know they possess and in this way enhance the users' sense of ownership and commitment in relation to the library. From being those for whom we design something, the users become, to a greater extent, a part of the process. The new innovation practice in Dokk1 has been on its way for years through many projects and programs, which have applied different processes to create changes in collaboration with the users. These participatory processes have made Dokk1 what it is today: an inclusive and open building that creates a new urban space that also reaches out and invites partners, citizens and the community to play a central role in creating a lively and open space for all.

The design thinking toolkit

Building and planning Dokk1 has been a huge user-involvement process, but all over the world libraries ask: what's the future of libraries and how do we stay relevant as institution for our community? Aarhus Public Libraries and Chicago Public Libraries wanted to answer this question and help libraries find out how to use design methods to get to know the needs of their community. With support from Bill and Melinda Gates Foundation we engaged IDEO and did a project about design thinking and how it might best be adapted and applied to a library context. The final result was released in 2015 as the *Design thinking toolkit for libraries*[2]. The toolkit can be used by any front-line library staffer to adapt to library users' changing needs. The idea is to help library staff all over the world to become the best possible change-agents that they can, in order to help their patrons and their communities learn and grow.

The toolkit guides you through design thinking so you can start coming up with solutions to everyday challenges within the library. Design thinking, or human-centered design, is all about starting with people – the users that visit your library.

Design thinking theory

Co-creation, design thinking and participatory design are getting increasingly popular also in the public sector[3]. Also in libraries there is a lot of talk about service design, action-learning etc. They are all part of the same attitude towards innovation and development. The idea about involving end-users in development started out in the 60's for example in a Scandinavian design approach called 'participatory design'[4]. Back then this way of working was especially used in developing new

2 IDEO; Chicago Public Libraries; Aarhus Public Libraries, *Design thinking for libraries: a toolkit for patron-centered design*. 2015, <www.designthinkingforlibraries.com>.

3 Terry Costantino [*et al.*], *Participatory design of public library e-services*. In: *PDC '14: proceedings of the 13th participatory design conference, Whindoek, Namibia, October 6-10, 2014*. New York: ACM, 2014, vol. II, p. 133-136; Joe Marquez; Annie Downey, *Service design: toward a holistic assessment of the library*, «PNLA quarterly», 80 (2015), n. 1; Gustav Taxén, *Introducing participatory design in museums*. In: *PDC '14* cit., vol. I, p. 204-213.

4 Jørgen Bansler, *Systems development research in Scandinavia*, «Scandinavian journal of information systems», 1 (1989), n. 1, p. 3-20; Pernille Ingildsen, *User centred design: ideas, methods and examples*. Danfoss User Centred Design Group, 1998.

technologies. Later on Donald Norman coined the term 'user-centered design' as a variant of participatory design. In the 80's and 90's usability became the new term[5], first as user testing and later on as involvement of users who became co-designers in the design process. The design process became a co-created process with both designers/staff and users – a shared learning process where the users were part of the process very early and not just in the end.

In the 90's we began talking about 'human-centered design' and service design. Design thinking is an approach to assure that we make sure we keep our focus on the users and their needs. It is «a creative approach, or a series of steps that will help you design meaningful solutions for your library»[6]. Design thinking is a deeply empathic process that taps into the possibilities that we often overlook. You don't have to be a designer to do it, but with design thinking you get a number of creative tools that can help you solve problems. Design thinking is also a mindset – a new way of working where you start to look at the world as a designer. Adopting a designer's mindset means for example to be curious, to investigate the unknown, to start a process without knowing the end-result etc.

The user-involving methods and approaches that are used have many names. User-driven innovation, service design, co-creation and user involvement. They all have methods and models that vary but the idea is the same: to make sure that our libraries are grounded in the users and their needs. A combining, general term for development anchored in the users' needs is design thinking.

What is design thinking?

Design thinking is an iterative process, which is user-centric and based on a deep understanding of the users' needs combined with experiments and prototypes. It is about getting out and away from the desk and the meeting room – seeing the world in a fresh perspective. This will enable us to learn something new about the library and the users that we know so well.

The design thinking process consists of three phases:
1. Inspiration: learn something about the world.
2. Ideation: analyze what you have learnt and get ideas.
3. Iteration: build prototypes and learn more about your users.

These three phases are repeated over and over in an iterative process.

Figure 2 – The design thinking process consists of three phases

Applying design thinking and service design we can ensure that we base interior design, technology and new services on knowledge rather than assumptions about

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5 Donald A. Norman, *The design of everyday things*. New York: Doubleday, 1990.

6 IDEO; Chicago Public Libraries; Aarhus Public Libraries, *Design thinking for libraries* cit.

the users. In other words, it is not a question of asking the users, it is about observing them and understanding how they feel and experience a service or a visit to the library.

Figure 3 – In a design thinking process, ideas are prototyped at an early stage.
Different concepts are presented to users at the checkout desk to obtain feedback

If you want to create a library in collaboration with the users, you need to see co-creation and design thinking as both a new mindset and a method. Part of the process and the problem-solving is to identify the right problem. In order to do this, you need to open up the organization and establish a flexible and open platform, that is one with access to data and new tools for the users, inviting them to participate in the development.

Co-creation processes are not driven by a focus on the organization's wishes or an idea that an employee has come up with, but rather by a focus on and an understanding of the users' situations and needs. A number of methods can serve to obtain this insight. Anything from a chat with users about what they like about a service and, not least, what they do not like to longer interviews and observations of user can be used to gain these insights.

It is crucial to understand that design thinking and co-creation is not asking what specific requirements citizens have to libraries, but revealing needs through interviews, observations, visualization and testing of prototypes. Whether an experiment or a prototype is successful or fails is far less important than the learning we gain from experimenting in collaboration with the users.

Figure 4 – A design team is processing the inputs they have gathered from the users.
It is a question of digging a bit deeper and understanding what the real problem is

Lessons learned

Thinking about services we have learned a lot about how to design them. Through interviews and prototyping we learned a lot of new things about our users and the way they use the library. We also learned that sometimes it is in the packaging and not in the service itself that a problem dwells. And we learned new methods to focus not on demographics (gender, age etc.) but more on behaviors. The users' habits, rituals, routines and their journey through the library system often tell us more about who they are than their age.

Design thinking brought the users to the center of our library and our development. It gave us tools to design together with our users and not just for them.

The library should be the local innovation hub for the community. This is also why it makes sense to incorporate participatory design methods. We also provide design thinking as a service the citizens can sign up for – in that way it also becomes a method they can use to develop and realize their ideas and visions.

Further work

Aarhus and Chicago Public Libraries still work with the Bill and Melinda Gates Foundation to find out how to spread these methods to the library field. Since launch in January 2015 the toolkit has been downloaded by over 20.000 librarians in more than 100 countries and has been translated into Romanian, Japanese, and Spanish – with more planned in the future.

Other projects have also picked up the methods. We are part of the *New Challenges for Public Libraries*, a project that uses design thinking. Italy is represented in this project by CSBNO (Consorzio Sistema Bibliotecario del Nord Ovest), Lombardy Region and Milan-Bicocca University.

Open space

The vision for Dokk1 was to create an open and accessible learning environment and an environment for experiences, which provides the opportunity for activity as well as tranquility and contemplation. Dokk1 should also contribute to the promotion of democracy and community.

Today we have about 4.500 users at Dokk1 every day – and every day the library space is co-created with partners and users. The users have embraced Dokk1 – it is their space. About 60% of our events are planned and executed by partners and citizens. Even though it is a very new building it plays a central role in developing the city and has already created a new space and new opportunities in Aarhus.

To support innovation libraries should open up not just their data but also the library space[7]. The Municipality of Aarhus has a strong vision about open data and open innovation processes. Libraries can support this movement by also providing an open and accessible space where civic engagement and innovation can happen.

To support the library as an innovation space we established the Transformation Lab more than 10 years ago. The Transformation Lab is a space for prototyping and creating new images of the physical library of the future. Before Dokk1 opened experiments were carried out publicly in the foyer of the old Main Library in Aarhus.

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7 Mariana Salgado; Sanna Marttila, *Discussions on inclusive, participative and open museums*. In: *Beyond control: the collaborative museum and its challenges. International conference on design and digital heritage. NODEM 2013 Conference proceedings, Stokholm, December 1-3, 2013*. Stokholm: Interactive Institute Swedish ICT, 2013, p. 41-48.

Here ideas and tangible models were tested in close interaction with both employees and library users. One of the contributions of the Transformation Lab was that it rendered the users visible in the library.

In the Transformation Lab a lot of prototypes were carried out: interactive floors, new technologies for children, new learning environments etc. One of the recent projects was the People's Lab. If the growth of welfare is to continue, innovation from citizens and communities is demanded. People's Lab has for two years been experimenting with initiatives that will support these new requirements and skills on demand: critical thinking, problem solving, creativity, innovation, communication and collaboration. Making or the maker movement seems to be a trend or approach to learning that encourages this trend[8].

The maker movement contributes to the library relationship with its local community, and the library becomes a local driver for cooperation and civic engagement. This is also an example of the library becoming an amplifier for resources and network that already exist in the local community.

Lessons learned in Transformation Lab

Transformation Lab showed us that users want to engage in making the library of the future. An advice for all libraries is to make room for an open space in the library that is never fully designed and thus may be changed on short notice. Here it is possible to experiment with the dissemination of specific subjects as well as the physical settings, which may be continuously adjusted according to the users' inputs. This changes the patrons' imagination of what a library can be and the library is no longer just the librarians' space but the users' space.

Transformation Lab has demonstrated that technology plays an important part in re-inventing the physical library. The lesson learned was that often it is the simple techniques which produce the greatest impact. The users like to become involved – as long as it is not too much trouble and providing that it brings about an instant result.

Transforming the library with technology

One of the core values behind Dokk1 is to create a building that bridges citizens, technology and knowledge. This connection is for example made by bringing new technologies into the physical library space and letting the building be online and connected. Technology is ubiquitous and a part of the whole building and not just a single installation that you can walk up and use.

The purpose of new media in Dokk1 is to expose users to new technology, invite them in and make the invisible visible. It is also about giving the space to the citizens and let them leave traces, inspiration and information for others to use.

These are examples of how technology can open up the library space:
1. Civic media.
Instead of having only curated content on large displays and screens around the building we use them as a platform for civic media. When a user posts a picture on Instagram and tags it with #dokk1 it will be shown on our largest displays and become a part of our shared story about Dokk1. This is again an example of going from the library's space to the users' space. And it makes it visible that this place belongs to the citizens.

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8 Sampsa Hyysalo [et al.], *Collaborative futuring with and by makers*, «CoDesign», 10 (2014), n. 3/4, p. 209-228.

2. The gong: online and connected.

The gong is a large tubular bell hanging in the middle of Dokk1. It is connected to the Internet and every time a child is born the parents can push a button at the local maternity ward, a signal is sent to Dokk1 and the gong will go off. Another installation: the interactive binoculars take you up in the air and the users get the opportunity to zoom in on specific locations and sites around the city area. Both these installations are ways of connecting the library to the city and the rest of the world.

Figure 5 – The Gong gongs every time a child is born in Aarhus

3. The sound of data.

In the arrival area an interactive soundscape welcomes you to the building. This installation is online and some of the sounds are created using data from the surroundings. The users themselves can interact and create their own sounds. The soundscape is used to create a safe and welcoming atmosphere throughout the day.

4. Play and awareness about library services.

The interactive floor promotes collective and differentiated learning styles through play and physical activity. The children use their hands and feet to interact with the floor, allowing them to do the activities. Other installations like book dispensers, interactive floor and interactive tables bring out reviews, books and suggestions from the library system. This is a way to make the library content accessible in new ways.

Figure 6 – The interactive floor in Dokk1 is used for learning and play

5. Open platforms to be programmed.

Around Dokk1 there are platforms and surfaces that can be taken over by partners, artists or students who wish to experiment with new technology, new media and how to create new experiences. The soundscape, a large digital ceiling around the

Great Hall and all our displays can be programmed by others. This is an opportunity for the users to add something to the digital layer in the building.
6. Smart library.
Dokk1 has PIR-sensors, access points and cameras that can give us a lot of relevant data about how the building is used. By using machine learning we can get new, factual knowledge about users and occupancy in library spaces. The goal is to optimize user experience, interior design, wayfinding, opening hours, facilities, programs and services in library building – based on factual data about library users.

The Library in the smart city

The building is prepared in every way to incorporate technology. Dokk1 has been constructed with in-built flexibility to new developments in technology, media, and consumption of culture. Citizens, stakeholders, researchers and partners are invited in to a co-creation of the development of technology in Dokk1 – and the building has become a key component in developing the Smart City in Aarhus.

Conclusion

The library of the future should be co-created with the citizens. We have to prototype and co-create with users and we have to listen to users' input and acknowledge them as a resource. In order to do this we have to incorporate new roles and work in new ways in libraries – for example by using design thinking. With spaces for transformation and using new technologies we can move the physical library space in new directions. It creates new opportunities for us as a library and for our users.

Acknowledgements

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