PARTICIPATE: Capturing Knowledge in Public Library Activities

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CHI'18 Extended Abstracts, April 21–26, 2018, Montreal, QC, Canada
ACM 978-1-4503-5621-3/18/04.
https://doi.org/10.1145/3170427.3188605

Abstract
We present PARTICIPATE, a technology probe exploring how to strengthen the connection between activities taking place at public libraries and their collections, both in the digital realm and in the physical space. Based on ethnographic studies and participatory design activities, we derive three core implications for place- and activity centric library services. These implications led us to design PARTICIPATE in collaboration with library staff from three European countries. The probe is a mean to investigate how place- and activity-centric digital services *in* the library space can engage participants in co-creating knowledge, and enable libraries to integrate activities with library collections.

Author Keywords
Library; space; place; activity-centric; participatory design.

ACM Classification Keywords
H.5.m [Information interfaces and presentation (e.g., HCI)]: Miscellaneous

Introduction
Libraries traditionally held a privileged position as public hubs and repositories of knowledge. However, just as we have seen with other organizations across a wide range of domains, libraries have been strongly affected and challenged by the rapid development and adoption of IT. The

Figure 1: Place IT workshop exploring digital place and activity centric services.

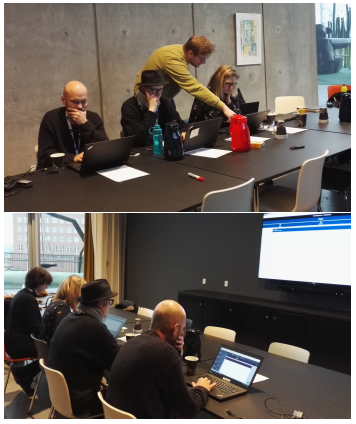

Figure 2: Participatory design workshop with the library staff.

fundamental promise of IT to offer access to information at any time, anywhere, and on any device challenges the traditional role of libraries as offering access to a collection of media at a given physical location at specific times. Why go to the library to borrow books and music on physical media if we can download books on e-book readers and listen to music from streaming services, often from a much larger collection and with more ease? In the face of this challenge, many libraries have undergone extensive institutional transformations to revitalise and reinforce their role in society.

Libraries occupy a special role in communities in that they are one of the few "third places" that are not subsumed by commercial interests [13]. Among other things, this means that the library has a unique potential for strengthening community identity and cohesion, while jointly building and sharing the knowledge and competencies of urban residents across social divides. This presents libraries with great opportunity if they can actively position themselves as key players in the development of cities and deliver relevant services. A number of new libraries in the Europe have recently taken up this challenge and worked to break down the institutional walls of the library to redefine their role as an integrated part of urban life [10], or even as urban spaces in themselves [4]. One of the key components in this development is for libraries to organize and host activities that are particularly salient for the communities they serve. These activities vary greatly, from book readings and debates, to collaborative coding sessions, maker faires and 3D printing workshops.

However, while digital archive services are well-developed, the services required to support this new role of libraries are currently lacking or are underdeveloped. Our research groups have explored the development of digital systems and services for public institutions such as libraries for more than a decade, e.g. [7] [8], and building on this, we now head a cross-European project, PLACED, with the objective of exploring and developing novel services that better support libraries and their patrons. The main research question we examine is this: How can we design digital library services that support libraries and their patrons to plan and carry out activities at the public library, and which simultaneously capture the knowledge created in these activities and add it to the collection, so that it can further benefit the local community which helped create it?

We label these types of services *place- and activity-centric library services*. This paper presents a) the main findings from our studies of library activities and services, b) three core implications for designing digital library services, c) a technology probe, PARTICIPATE, which embodies and demonstrates these implications, which is currently deployed in three countries, and d) opportunities for incorporating place- and activity-centric services in libraries.

Method and research process

PLACED is based on a Participatory Design (PD) approach comprising a string of activities, including extensive observation studies, interviews with stakeholders ranging from library directors to patrons, focus group interviews with library staff, iterative co-design workshops with library staff and patrons, and in-situ deployment in real-life use cases in libraries, all of which are carried out over the course of three years across three countries: France, Sweden, and Denmark. Here we focus on the insights from the main activities from the first year of the project, namely a library conference workshop (see figure 1), two focus groups, four initial co-design workshops (see figure 2), and two months of ethnographic studies and more than forty interviews.

Findings from PD and ethnography

The number of public activities in the library spans from 100 per year to 100 per week, mainly depending on, e.g., if it is a branch or main library, demography, and the size of the city population. Activities can be organized by the library staff, while about half of them are initiated, organized, and run in partnership with external people or organizations. Some smaller activities are also taking place without being announced to the wider public. The most common communication channels are activity calendars on the web, printed programs, information posters and/or screens in the library, newspaper ads, and various social media. Some of the activities are documented as they unfold, either on social media by the participating patrons, an external organizing partner, or by the library. Rarely are activities archived afterwards, apart from some exceptional cases were they may feature either on the library website, in the form of a video on Youtube, or as posts/images on social media.

To organize activities is generally viewed as a time consuming task; hence, editing and archival of material after activities rarely occur. Some activities are supported and documented using external services (e.g., various social media, Google Docs, through external organizers) while most remain undocumented. Since the activities and what is produced in them are not included in the collection, there is a weak link between physical activities and digital services. Further, there is no harmonization in how to link the activities with the collection. Even within the same library, each activity/librarian entails a different approach in access to collections, e.g., a selection of documents on a table, a flyer with a list of documents, follow up information sent by email to participants, etc. The link between activities and collections depends on the individual preference of the organizer who is managing the activity, the type of activity, the possibility of the space, the available resources, and on the participants. The collection is usually maintained by library employees only. Yet, many libraries have dedicated social media hashtags, and in some cases, they display what patrons publish from activities taking place at the library either on their website or on public displays in the libraries. However, this information is not archived in the collection.

Implications for design

Knowledge generation often necessitates active involvement in processes of construction and contribution, and emphasizes the potential of dialogical systems that encourage participant input [7]. Thus, we should *encourage library patrons' engagement in activities through construction and contribution*. This questions the fundamentals of *expert knowledge versus lay knowledge*. A service that encourages participants to construct and contribute with new knowledge must consider legitimation of knowledge, recognition of lay knowledge [3], and how to archive the different categories of knowledge. This raises questions regarding *roles and editorial rights*, such that the service should be able to handle both internal and external organizers, patrons acting as organizers, and participants contributing.

Libraries differ as places – in location, physical facilities, infrastructure, and the community they cater to (see [6]). Therefore, it is necessary to *design adaptable services that can be appropriated and evolve with particular libraries and local practices*. It is important to consider how the physical environment and infrastructure support local activities and how designs are *grounded* in the place [12]. Proximity, presence, position, orientation towards others and system interfaces are relevant [1], as well as how the digital services are anchored in the physical space. Supporting *hyperlocal* activities means that proximity and presence can influence how the digital service mediates and filters access, interactions and participation, e.g., read for anyone

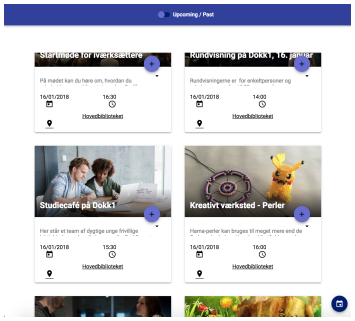

Figure 3: Overview interface showing upcoming activities in the library.

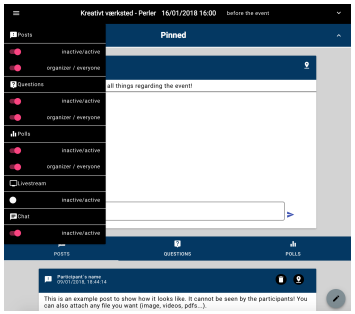

Figure 4: Configuration interface for activity organizers.

anywhere, write for those physically present [5].

A system further needs to be *Activity-centric, with support before, during and after the event.* Inspired by activity based computing [2], future library services should connect digital support for these activities as a coherent entity. *Before* includes support for preparing the event, enabling dissemination of the event, and the kind of sharing of material or discussions that otherwise happen externally, e.g., through social media. *During* the event digital support may include facilitation interaction between participants by leveraging the participants' mobile devices, e.g., through polls, media sharing, questions, or more sophisticated event specific tools, such as an audience noise meter for a poetry slam event. The event may have an *after*life where participants can continue to share thoughts or media, or where organizers can summarize the event for archival.

The PARTICIPATE Technology Probe

We have developed PARTICIPATE as a technology probe [9] with the goal of understanding the needs and desires of visitors and organizers in a real-world public library setting, and to field test the aforementioned design ideas.

PARTICIPATE is a web-based platform consisting of an overview of the activities taking place at a library (see figure 3), as well as unique and tailored activity sheets for individual events (see figure 4). Each activity sheet can be customized by an organizer with features relevant for the given event. This includes, e.g., support for posting comments, photos, and files, or enabling Q&A, polls, or social media integration. Sheets are intended to be accessible during events from mobile devices, but also before and after from a desktop browser. Information and knowledge generated before, during, and after the event will be stored in the sheet, which can then be associated with the library collection or website. Activity sheets follow the design well-known from social media where all content is stored in cards presented in a timeline. Where possible, detailed information in the activity sheet such as title, guest, location, time, etc., is automatically generated from the library calendar web API. This relates directly back to the ethnographic findings that organizing activities is time consuming, so automatically generated data is preferable when possible.

To engage participants, the organizer can choose several features by enabling/disabling them in a menu only accessible to organizers (see figure 4). Let us assume someone is organising a Creativity Workshop with beads. It may be that only a subset of features is relevant, e.g., a chat card, a poll, and means for uploading photos of what is produced during the workshop. Organizers can also pin cards to the top of an activity sheet to make them more readily accessible. For example, before the event, the organizer can create a pinned poll to get an idea of what kind of jewellery the participants are interested in creating, or create a post to give the participants basic information about the event (see figure 5).

Using PARTICIPATE to involve participants before the event takes place can therefore also influence the structure of the event itself. Furthermore, participants who cannot attend the event can ask for the material of the workshop from home (see figure 6). Usually such knowledge is only available during the actual event, or in external services. PARTICIPATE, on the other hand, is still available afterwards and can, e.g., be used by the organizer to ask for feedback, or upload the outcome of the workshop. Posts, images, or pdf files detailing the materials used in the workshop can easily be created (see figure 7).

The implementation is based on a document-centric web-based system called Webstrates [11]. Every activity sheet

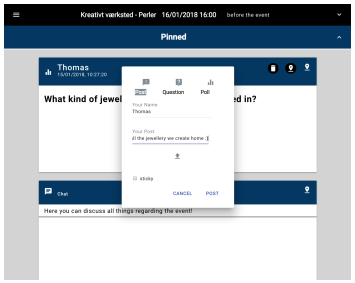

Figure 5: Example of activity sheet before activity: Creating post.

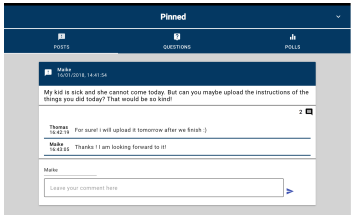

Figure 6: Example of activity sheet during activity: Participant posting to activity.

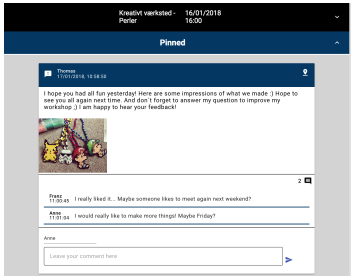

Figure 7: Example of activity sheet during activity: Participant posting images from activity.

can be reached by opening a link in the browser so no application needs to be downloaded, nor does an account have to be created. By supporting this, the idea of libraries as open spaces is also addressed in the digital service. PARTICIPATE can also use proximity sensing based on WiFi signals to establish couplings between locales and web-based applications and documents.

Discussion and Conclusion

As an answer to the challenges posed by the rise of technology and access to information anytime-anywhere that public libraries are facing today, we are witnessing an extensive institutional transformation of libraries to reinforce their role in society and in the local community. One of the most recent responses to this is to focus more on the third space role of libraries, i.e., a free and open space for the community to meet, socialize, discuss, and learn. In the PLACED-project, we address this challenge by exploring how place- and activity focused digital library services can support this transformation, which also has the potential to increase the use of library resources and services by citizens – a national success indicator for libraries. As the project unfolds, we aim to explore whether this type of new services has the potential to attract new visitors to libraries, to promote participation and co-creation, and finally, to offer more inclusive urban public places. Against the PD approach we have taken, we seek to investigate the views of the library professionals, if said service offers the opportunity for the library to demonstrate the ways that citizens could participate in the development of public services, and whether or not this can, not only democratize access to collections, but to democratize the collection itself.

The first probe of this kind, PARTICIPATE, will offer libraries a way to reinforce their position as a central urban service provider through new public services for collecting citizens' knowledge production, adding this knowledge to library collections, and making these resources available to citizens. For the libraries, PARTICIPATE has the potential to change the practices and processes of these libraries, and close the knowledge and implementation gap in the planning, management, delivery, and documentation of library activities. We are currently exploring the immediate impact of PARTICIPATE as a probe in the partner libraries, by co-designing services and features within PARTICIPATE adapted for specific activities together with the organizers. This also fosters discussions on new forms of participant engagement and feature experiments in activities taking place at the library. Through implementation in PARTICIPATE, the participatory aspect of the activities and the visibility of documents produced by the users in collections can be further investigated. However, the main impact lies on the adoption of PLACED services in the long term. The overarching ambition of the PLACED-project is to demonstrate that it is both possible and desirable to develop novel urban services that enable citizens to both access and develop knowledge that springs from the actual activities that unfold in the city, and to make this knowledge part of a shared communal collection. Although PARTICIPATE for now is limited to features already known from Facebook or other social media services, it can easily be extended to other features. For citizens, the impact of PARTICIPATE is two-fold: 1) provides an infrastructure for active engagement in events, and 2) offers access to previously untapped knowledge from such events, and increases the visibility and accessibility to new knowledge and knowledge sharing activities, thus facilitating lifelong learning.

Acknowledgements

We thank RISE, and the libraries of Aarhus, Gothenburg and Lyon. The work is funded by Vinnova, Innovation Fund Denmark, Agence Nationale de la Recherche, JPI Urban

Europe and Aarhus University Research Foundation.

REFERENCES

1. Till Ballendat, Nicolai Marquardt, and Saul Greenberg. 2010. Proxemic Interaction: Designing for a Proximity and Orientation-aware Environment. In *Proc. ACM ITS '10*. ACM, New York, NY, USA, 121–130. DOI: http://dx.doi.org/10.1145/1936652.1936676
2. Jakob E Bardram, Morten Esbensen, and Aurélien Tabard. 2016. Activity-based collaboration for interactive spaces. In *Collaboration Meets Interactive Spaces*. Springer, 233–257. DOI: http://dx.doi.org/10.1007/978-3-319-45853-3_11
3. Raphaëlle Bats. 2015. Les enjeux et les limites de la participation : le rôle des bibliothèques. In *Construire des pratiques participatives dans les bibliothèques*. Presses de l'Enssib, Villeurbanne, France, 58–65.
4. Maija Berndtson. 2013. Public libraries and placemaking. In *IFLA WLIC 2013 - Singapore - Future Libraries: Infinite Possibilities*. IFLA, Singapore, 1–10. http://library.ifla.org/id/eprint/224
5. Susanne Bødker, Clemens Nylandsted Klokmose, Matthias Korn, and Anna Maria Polli. 2014. Participatory IT in Semi-public Spaces. In *Proc. NordiCHI '14*. ACM, New York, NY, USA, 765–774. DOI:http://dx.doi.org/10.1145/2639189.2639212
6. J. Buschman and G.J. Leckie. 2007. *The Library as Place: History, Community, and Culture*. Libraries Unlimited.
7. Peter Dalsgaard, Christian Dindler, and Eva Eriksson. 2008. Designing for Participation in Public Knowledge Institutions. In *Proc. NordiCHI '08*. ACM, New York, NY, USA, 93–102. DOI: http://dx.doi.org/10.1145/1463160.1463171
8. Peter Dalsgaard and Eva Eriksson. 2013. Large-scale Participation: A Case Study of a Participatory Approach to Developing a New Public Library. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '13)*. ACM, New York, NY, USA, 399–408. DOI: http://dx.doi.org/10.1145/2470654.2470713
9. Hilary Hutchinson, Wendy Mackay, Bo Westerlund, Benjamin B. Bederson, Allison Druin, Catherine Plaisant, Michel Beaudouin-Lafon, Stéphane Conversy, Helen Evans, Heiko Hansen, Nicolas Roussel, and Björn Eiderbäck. 2003. Technology Probes: Inspiring Design for and with Families. In *Proc. ACM CHI '03*. ACM, New York, NY, USA, 17–24. DOI: http://dx.doi.org/10.1145/642611.642616
10. Henrik Jochumsen, Dorte Skot-Hansen, and Casper Hvenegaard. 2010. The Role of Public Libraries in Urban Development and Culture-led Regeneration. *European public libraries today and in an historical context* (2010).
11. Clemens N. Klokmose, James R. Eagan, Siemen Baader, Wendy Mackay, and Michel Beaudouin-Lafon. 2015. Webstrates: Shareable Dynamic Media. In *Proc. ACM UIST '15*. ACM, New York, NY, USA, 280–290. DOI:http://dx.doi.org/10.1145/2807442.2807446
12. Jörn Messeter. 2009. Place-specific computing: A place-centric perspective for digital designs. *International Journal of Design* 3, 1 (2009).
13. Beth Posner. 2002. Urban Librarianship: Libraries, Cities and Beyond. In *CUNY Academic Works*. CUNY, New York, NY, USA, 1–24. http://academicworks.cuny.edu/gc_pubs/342