

## WHY SERVICE DESIGN MATTERS: THE CASE OF NATIONAL LIBRARY OF LATVIA

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**Abstract.** *In the digital age when many organizations initiate and experience transformations as a reaction to wider societal changes, there is discussion about functionality, usability and availability of library services. Studies report a decreasing number of library visitors as result of the pervasive presence of the Internet as a faster source for getting resources, public`s lack of knowledge about the library services, etc. To maintain relevance for the public, more libraries apply principles of service design to provide an effective customer experience. For national libraries websites are of high importance as gateways to library resources and media to communicate institutions` objectives. The aim of this article is to analyse how the principles of service design are reflected in the online services offered by the National Library of Latvia. The research methods rely both on secondary data on audience needs and involve application of the service design principles to the website of National Library of Latvia. Results highlight the majority of analysed libraries apply the basic principles of service design and the focus is to provide the user friendly experience in libraries` databases and repositories. The website of the library provides limited user friendly experience in library`s and only partially follows the principles of service design.*

**Keywords:** *user experience, national library, service design, library websites.*

### Introduction

Public libraries are cultural institutions that are highly dependent on public funding and thereby they need to be transparent in demonstrating the impact and value they represent in societies, both to strengthen their position and to influence policies and financial decisions (Sørensen, 2020). Recently, these institutions have risen to the challenges born from ongoing social, digital and

economic changes and library statistics (EBLIDA, 2013-2015, Department for Culture, Media and Sport 2015 - 2016) show that the ability of organizations to adapt to these new conditions varies from country to country (European Parliament, 2016).

According to Brindley (2008, p. 65) “what has made research libraries great in the past will not alone make them great in the digital environment” and the rapidly evolving information context of today. Being only one part of a great diversity of alternatives available to audiences, libraries have to find new ways to add value and remain relevant in the rapidly changing and competitive environment. The digitalization has opened up a rich information environment, characterized by a proliferation of information sources and providers, a multiplicity of methods for accessing information, and a redundancy of content from multiple sources. Under these conditions the habits of individuals of information seeking and gathering have transformed and many previous studies have looked into processes how individuals practice information, searching, and gathering processes, including also how and when individuals stop looking for information. According to Radford & Connaway (2015) many information users tend to experience a sense of information inadequacy and anxiety in this “overloaded” information environment. Providing information related services for contemporary society is specifically challenging as users of electronic information spaces have a diverse background, in terms of knowledge, skills, and preferences (Chen, Coughlan, Love, Macredie, Wilson, 2008).

One of the ways how libraries can overcome the challenges of the environment and support their users to stay relevant for their audiences is to apply the principles of service design. Service design helps with redesigning services from the perspective of the user, it is a holistic, co-creative method (Marquez & Downey 2015; Thoelen & Cleeren, 2015).

Recently number of the National Library of Latvia (further in text NLL) online service usage has grown steadily (2018 – 123921, 2019 – 142545) while number of physical visitors is slightly decreasing, also the amount of physical book loans decreases (2018 - 338 347, 2019 - 302 644 [1]), therefore this study focuses to the NLL website as the main tool used to communicate and provide digital services. Research aims to study application of service design principles in the website of the NLL to explore how effectively the institution targets the needs of contemporary information seekers. The main functions of the NLL are the collection of national literature, its perpetual storage and the long-term provision of access to it. The NLL collection consists of 4.5 million units and according to the annual review, the library had a total of 154 735 online and physical visitors in 2019 (LNB, 2020). Central Statistical Bureau of Latvia reports the number of active library users in 2018 was 26218, while in 2019 –

24932, which might mean that despite growing numbers of library visitors, the people use services less.

The research method is development of the set of criteria based on theoretical principles of service design principles and it has been applied to evaluate efficiency of the website of the National Library of Latvia. Additionally, usability experiments with library sources were held to back up the analysis of service design principles. Semi-structured interviews with teachers were implemented - they represent one of the main target groups of NLL and were asked about digital visibility of NLL services.

The article consists of literature review embracing the behaviour of information searching and gathering and needs of library visitors in the context of democratization of cultural institutions, as well as the review of service design principles and their application in the libraries. Next section of the study is devoted to research methods description that is followed by research results.

### **The Information Search Habits and Needs of Library Users in the Context of Contemporary Library**

The traditional role of the library of collecting, treating, organizing, preserving and diffusing information and being source of expertise to access knowledge had been augmented to provide other, fundamentally different key service related to development of Web services, contents and tools, integrated systems for teaching and research support, collaborative platforms and enablement of people to share their expertise and knowledge and library services taking advantage of the opportunities produced by new technologies (Martins, Cortes, & Gabriel, 2011; Chowdhury, Poulter, & McMenemy, 2006; Royal Society, 2012).

Under new conditions it is not anymore about scarcity but more about choice, availability, findability and share-ability of materials and libraries are vying for information seekers' attention in the digital environment. When people have plenty of choices available, traditional library-centered processes, systems, and services that require users to build and adapt their workflow around them, must be replaced with systems and custom-made services around the users' workflow and habits to attract their attention (Radford & Connaway, 2015; Martins et al., 2011).

Harbo & Hansen (2012) also emphasize the need to innovate library services and facilities to serve visitors and to take the perspective of library "user logic". User logic defines if the services are meaningful from the users point of view. However, Lippincott (2005) questions the ability of libraries to adapt to new conditions as services are presented in the library organization

context rather than in a user-centered mode. In the competitive environment with plenty of choices available, the significance of new means of communication and promotion of libraries and services to establish and strengthen relationships with visitors has become prominent (Martins et al. 2011).

Some national level studies (Fernández-Ardèvol, Ferran-Ferrer, Nieto-Arroyo, Fenoll, 2018) present data that despite democratization efforts and increasing number of services, content and service marketing efforts, the libraries have not managed to change their image and audience still perceive them as traditional organizations and the image of the library still is attached to books. The perception of the image of the library, in turn, determines what services people expect from the library and, accordingly, what services will be sought and used.

Users, user needs and community needs that the library has to respond to are placed at the very center of democratic library institutions. Physical and online users have enough diverse backgrounds, in terms of knowledge, skills, and preference, cultural contexts etc. to make the task challenging. Many previous studies have looked into processes how individuals practice information seeking, searching, and gathering processes to include how and when individuals stop looking for information (Radford & Connaway, 2015).

Researchers emphasize striking differences of information searching and gathering behaviours among individuals representing different generations. Lippincott (2005) explored the needs of Net Generation students that have grown up with computers and video games and become accustomed to multimedia environments and have not habits of consulting manuals and points they depend on Google or similar search engines for discovery of information resources rather than consultation of library Web pages, catalogues, and databases as the main source of access. Lippincott (2005) questions how the needs of younger generations match the traditional library environments as they are large and text based, frequently requiring learning the system from librarians, while states an increasing number of libraries responds to user demand and technological trends. Recent studies regarding information seeking behaviours of millennial academics confirmed the same trend and claimed that new or naïve researchers move away from subject specific resources and towards Google and similar digital tools (Gordon, Meindl, White, & Szigeti, 2018).

### **Service Design in Context of Library Services**

Recent trends observed in public-sector organisations around the world are showing increased focus on renewal of public services and organisations involving service design expertise (Park-Lee, 2020). Consequently, we can say

that application of commercial sector practices and principles becomes more common as the modern value concept determines that service or product should focus on customers' experiences uniquely determined by them in their own situations (value-in-use), not simply the offerings as such. Value is produced only when the customer actively steps in its generation (Grönroos & Voima, 2013; Vargo & Lusch, 2008; Verma, Gustafsson, Kristensson, & Witell, 2012).

Service and service design are not new terms. As Katzan (2011, p.43) has stated 'service is an interaction between entities that co-creates value'. In this process the involved entities may be persons or nonpersons, such as public bodies, educational institutions, and possibly some form of automation. Service design is a method for creation or improvement of services. Similarly, to product design it is interdisciplinary and makes use of 'design thinking'. Service design helps with redesigning services from the perspective of the user, it is a holistic, co-creative method. The main service design principles are: user centered, co-creative, sequencing, evidencing and holistic (Marquez & Downey 2015; Thoelen & Cleeren, 2015).

Another issue in the context of development and application of service design methods are connected with service design capabilities, e.g. access to resources such as funding, software, innovation space etc. (Morelli, De Götzen, & Simeone et al., 2021).

Integrating user-centered service changes allows libraries to stay in pace with unfolding expectations and needs. Usability studies along with traditional anthropological research are commonly used to assess library spaces and services in order to find out more about how users access and use information (Marquez & Downey, 2015; Gibbons, 2013; Duke & Asher, 2012). Good user interface for digital library tools is like a friendly, knowledgeable and trained librarian: both of them are crucial to meet the needs of library service users (El Mimouni, Anderson, Tempelman-Kluit, & Dolan-Mescal, 2018). However, Marquez & Downey (2015) indicate that practicing librarians often tend to focus on rather small details about users' experiences rather than researching the entire service of a library and the community it serves which contrasts to service design principles (Marquez & Downey 2015).

In previous studies (Nyame, Lu & Fu, 2019; Kous, Pušnik, Hericko, & Polancic, 2018; Perrin Clark, Medina de Leon & Edgar, 2014) besides the general conclusions that threshold is not commonly observed during the testing of library website usability, several specific user problems were indicated. (1) Individual databases are difficult to find, (2) drop down limiters are misleading, (3) articles by subject are not visible for users, (4) titles in dropdown limiters are not comprehensive for users, (5) simple spelling errors in search are unrecognizable, because there is no indication for that.

## **Description of Research Methods**

The primary data collection sources involved library websites followed by website content and functionality analysis with focus on holistic user experience and service design principles. Firstly, we did the overall analysis of European national libraries, then selected 8 websites (national libraries of Estonia, Iceland, Norway, Denmark, the Netherlands, Finland and Germany) for deeper comparative analysis with LNN website. The criteria for selection for an analysis were based on the clear presence of service design principles such as access to resources as priority service, segmentation on service (specific segment identification), user friendly interface, target segments, online interaction with user, co-creation offer, amount of individual databases, amount drop-down limiters, sequence of information, general complexity, integration of one click principle and other functional features. In the next stage we analysed content and functionality by using above mentioned criteria.

In the research project “The Significance of Documentary Heritage in Creating Synergies between Research and Society” previously collected unpublished data were used to contextualize National Library of Latvia - NLL relationship with visitors and service design aspects, service communication: (1) semi-structured interviews with one of the library target groups - school teachers. Interviews with secondary school history and literature teachers (N=8) were held in spring 2020 and explored to what extent teachers perceive NLL as a significant resource for their daily work; (2) User experience experiment to test how user friendly are search functions in NLL digital resources involves 10 randomly selected participants with different professional and educational backgrounds. Each of them performed 7 tasks - to search for the information, which can be found on NLL digital library. If the participants could not succeed without instructions, then they received some hints from the researcher how to proceed further; (3) the survey about information search habits among NLL target groups. Quantitative online questionnaire (N=354) about the information search habits among NLL target groups and usage of digital resources was implemented in spring 2020. The respondents consist of 165 educational institutions, 76 public cultural organizations, 56 scientific institutions and 1 center of technologies; 47 business organizations and 9 nongovernmental organizations.

## **Contextualisation of National Library of Latvia**

There is a shortage of previous studies regarding different aspects of the National Library of Latvia and are available only a few academic studies focusing on NLL performance as a contemporary, democratic public institution and its ability to offer competitive information services for audiences. NLL strategy emphasizes the importance of the library as an open organization for wider audiences and cultural space for community, as well as indicates necessity to analyse the needs and demand of the audience and match them with library offers, to engage specific target groups into the process of developing library collections. It also stresses the importance to provide user friendly information search for library users by stating: “We will work to ensure that the search for information in the National Digital Library of Latvia and other resources creates an experience that encourages a return to them.” (LNB, 2019, p.11) NLL performs its mission by collecting and developing its physical and digital collections, providing information services and educational offers (LNB, 2019). NLL has established a variety of online databases and resource collections available on website [www.lnb.lv](http://www.lnb.lv) and external domains.

Interviews with secondary school teachers revealed that some informants perceive the library as a physically and/or psychologically inaccessible place. In the context of physical accessibility, the main obstacle is the distance to the National Library. It hints the image of the library is related to physical books and on-site services, rather than digital collections and services. Significant obstacle for teachers to consider NLL resources to be important in their daily teaching work is the perception of “too smart offer” by the National Library. They believe these services are mostly for university students and researchers. For daily needs teachers mainly rely on alternative information sources outside NLL. When asked about factors hindering the use of NLL resources or their more frequent use, teachers report the lack of time, a wide range of alternative information resources, service fees, as well as the fact that pupils do not need such in-depth information on a daily basis. These barriers emphasize the need to develop user oriented information services which would be simply to use and could compete with alternative sources, would not be time consuming.

Some of the NLL resources contain content applicable for wider audiences (e.g. [enciklopedija.lv](http://enciklopedija.lv), [zudusilatvija.lv](http://zudusilatvija.lv) etc.) while others serve for specific target groups, e.g. academics and scientists, or those interested in specific topics (e.g. [braludraudze.lndb.lv](http://braludraudze.lndb.lv), [stenders.lndb.lv](http://stenders.lndb.lv) ), however in most cases data reflects that the majority of users make irregular visits to digital resources or are not informed about them, which might indirectly indicate issues in the context of

service design. Surprisingly, educational and scientific institutions are not among the most active digital library visitors (see Figure 1).

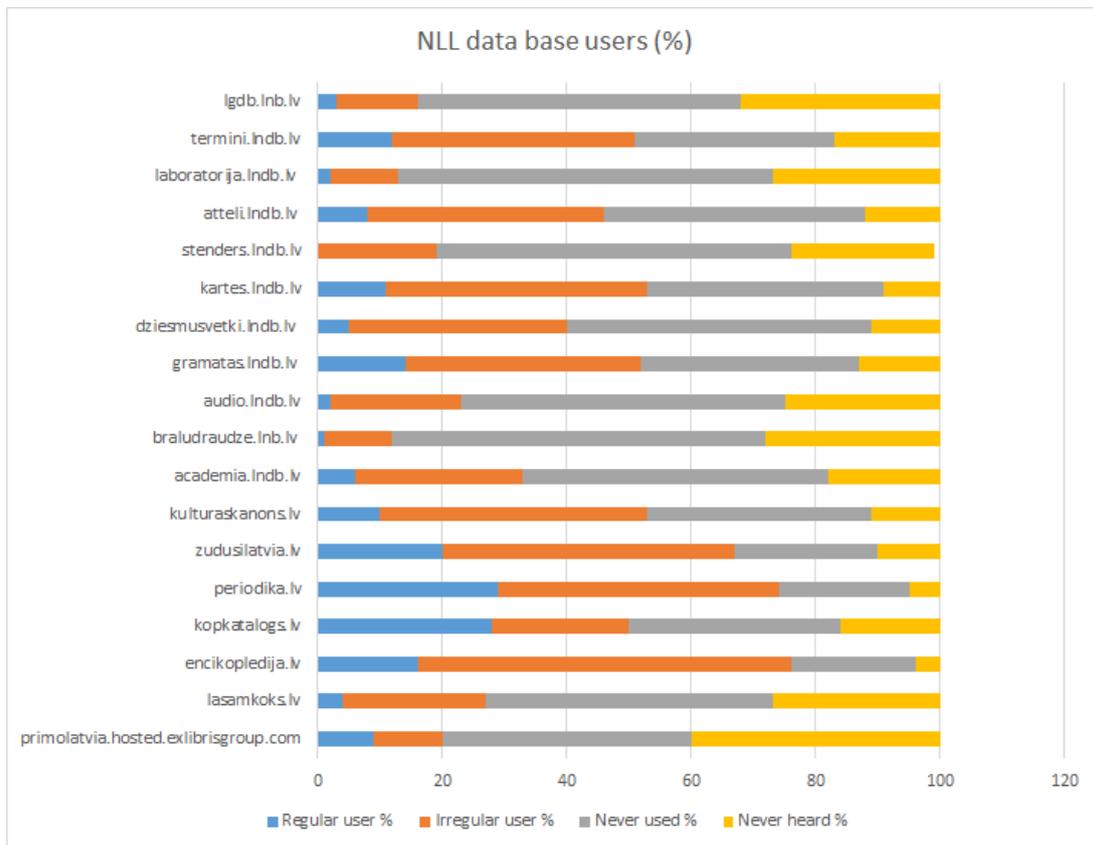


Figure 1 Usage of NLL Digital Resources (Java, 2020)

### Application of Service Design Principles in Libraries

The comparative analysis of the websites of the national libraries reveal some common patterns of service design principles (see Table 1).

Table 1 Analysis of the Websites of the National Libraries

Criteria	Latvia	Estonia	Iceland	Norway	Denmark	Netherlands	Finland	Germany
URL	www.lnb.lv	https://www.nlib.ee	https://landsbokasa.fi.is	https://www.nb.no	http://www5.kb.dk	https://www.kb.nl	https://www.kansalliskirjasto.fi	https://www.dnb.de
Access to resources as priority service	Access to resources is not positioned as priority or central service. PRIMO, a discovery search tool is found as an icon in the front page.	Access to resources through search. Clear user registration policy. Conference and reading room rent is actively positioned as service.	Majority of resources are located on external domains presented as links on the front page. Direct search function only for the website. Access to e-resources - search for books. No direct access to all library resources.	Access to resources is absolute priority in the front page, very central. "One click" access to collections of the library.	Access to resources is one of the first links in a website, but not positioned as central. The same significance of news, events and services.	Access to resources is priority. Access the National Library's collections with a single search) as well as practical information for visitors.	Access to resources is priority. Access the National Library's collections with a single search) as well as practical information for visitors.	Access to digital resources is priority, however digital resources are located on external domains.
Segmentation of service	Some segments defined.	Segments identified by needs.	Segments identified.	Not specified	Not specified	Segments identified.	Not specified.	Segments identified.
Online interaction with user, co-creation options	Not integrated.	Chatbot. Invitation to collaborate in creation of collections.	Chatbot.	Not integrated.	Embedded system for questions.	Embedded system for questions. FAQ.	Not integrated.	Embedded system for questions.
Fragmentation level (individual)	High fragmentation	Some fragmentation	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal

Sequence of information	News, organization information followed by service information, opening hours and access to resources.	User registration, services, other services (room rental), opening hours. Services: Education center, Conference center, Cultural center.	E-resources, services, facilities, contacts.	Resources, how to find, exhibitions, services.	Resources, for inspiration, events, services, visitation information, including practical instructions.	Resources, information for visitors, news services, collaboration, about organization.	News, user information, resources, services, collaboration.	For users, cultural offers, for professionals, collections, about the library..
Complexity & one click principle	Very complex.	Simple.	One-click website, simple and comprehensive, concentrated information about resources - content, accessibility.	One click, high functionality.	Some sections are simple, some more complex.	Simple and functional. Hyperlinks in text to reduce the amount of clicks. Access to the list of all resources and filters.	Access to the resources positioned as one click option.	From a comparative perspective - too long descriptions, instructions and texts.
Other functional features	Duplicated information, information overload, very high number of subsections; Quick links to external resources, LNB databases on domains outside LNB.	Functional visually attractive design; Contacts & opening hours - on the front page.	Functional visually attractive design. Some link duplication. News section is not overloaded. Links to external resources - Eurepana etc.	Functional visually duplicated information, news section is not overloaded, short, concise texts.	Duplication of the search engine. Links lead to external resources.	Quick links to the most popular resources. Show more function.	Show more function.	Duplicated link to the resource database.

Source: Authors on the basis of websites of the national libraries

An analysis of national library websites presents that in most cases, organizations prioritize information retrieval services and user-friendly, convenient search functions. Most libraries have chosen to avoid information-cluttered websites and instead designed structurally simple websites with a small number of drop-down limiters and user-friendliness. So libraries abandon the practice of offering digital resources based on professional library systematization and catalogization standards and instead chooses to rely on service design principles. Rejecting complex structures of catalogues and databases is a precondition to implement user friendly one-click principle. Following the principles of library users` logic makes services more meaningful from the users point of view (Harbo & Hansen, 2012).

It is important to note that in the majority of analysed websites practical information such as how to become a user, opening hours, restrictions during pandemic etc. for users and visitors was displayed straight on the top sections of the front page instead of being hidden under some drop down limiter. To some extent, this also indicates which services are being prioritized. As a modern collaborative feature integration of chatbot services and direct possibility to complement some specific library collections. Some national libraries are more likely than others to engage audiences in collecting collections on their websites, thus becoming collaborative platforms and enablement of people to share their expertise and knowledge. Several websites have chosen to back up certain information. Duplicating information from different events is easy for the user to search, allowing access to important links from multiple locations, while in other cases, duplication does not follow the user's logic, is technical, and contributes to information clutter.

The comparative analysis revealed that in general the website of NLL has not been created as user-centered. The access to resources is rather complicated and not positioned as priority, the structure of the website is tangly - numerous drop-down limiters, sequence of information, creative but non-comprehensive, misleading titles. Search engine PRIMO is helpful to navigate the complexity, yet it does not find information in all available databases. Amount of data bases (including ones technically located on domains outside of LNN) and search engines represent high levels of fragmentation more relevant to classic library systematization than user needs. There is a high level of information duplication.

User experience experiment test results on how user friendly are search functions in NLL digital resources discovers similar results as website analysis and highlights the mismatch between user logics and website design as 8 out of 10 participants were not able to find the information they were searching for despite receiving hints from researchers. Observation of participants several times demonstrated that search processes were failed as a result of simple

spelling errors, hard to find individual databases, shortage of search assistance generates too large number of results etc. These results are in line with previous usability studies by Nyame et al. (2019), Kous et al. (2018) and Perrin et al. (2014) and indicate typical problems in libraries websites.

Chen et al. (2008) reports that providing information related services for contemporary audiences is challenging as users of electronic information spaces have a diverse background and in case of NLL it is possible that there are still unused potential to reach significant audiences. The survey results and interviews identify that educational institutions are one of potentially increasing target groups. The complicated information search process on NLL digital resources possibly is one of the reasons why some target groups have constructed an image of the Latvian National Library as an institution that offers services to specific target groups - mainly researchers, students, thus also building barriers for accessibility among wider audiences. Literature studies (Fernández-Ardèvol et al., 2018) indicate that libraries should make more efforts in service marketing and this also refers to NLL as questionnaire results confirm wide audiences do not recognize libraries` digital databases.

## **Conclusion**

Summarizing the results of both - data gathered in primary and secondary research we can conclude, that core service design principles as focus on user, co-creation, sequencing, evidencing and usage of holistic approach are just partially applied in development of NLL website as meaningful communication and research tool for users and there is still space for relevant adjustments. Meanwhile, other national library websites have integrated approaches that enhance user experience and value-in-use as contemporary conditions as emphasized in previous studies. The results of this research prove that the intention defined in the NLL strategy to understand in-depth to the needs of the library user is very relevant to make sure the liber offer matches the information needs of contemporary library users. By integrating service design principles libraries potentially also increase their ability to justify the use of public funding and become meaningful for wider audiences. For the future studies it would be beneficial to apply the principles of service design holistically and analyse both onsite and digital services of the NLL.

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