

# RESEARCH IN THE DIGITAL TRANSFORMATION OF THE LIBRARY SYSTEM

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## Abstract

Libraries have always tried to adapt to changing social needs, the development of the sciences, and the emergence of new technological solutions. Consider, for example, the invention of book printing or the mass distribution of printed products and the resulting current bibliographies or even to the gradually emerging reference service. Undoubtedly, the next major stage in the development of library science will be induced by the spread of computer science and informatics. More and more areas of life are digitizing and people are increasingly relying on electronic sources to obtain information thus, the use of digital remotely accessible services has become commonplace. All of this involves a transformation in people's expectations of the library, and libraries are trying to keep up with emerging needs. More and more libraries offer thematic collections that are available electronically so eventually the digital, remote access use of services become daily. They also enable electronic document lending, online events, e-learning courses and other services that have recently been integrated into the library's service offering. In my research, I would like to explore how the Hungarian, European and US librarian profession has reacted to the fundamental transformation of the societal demands placed on libraries in the last two decades whether their electronic services have been able to respond appropriately to new societal needs and are still able to meet the role set out in the 1994 IFLA and UNESCO Manifesto on Public Libraries. The aim of my research is to review the transformation of the library service offer over the last two decades, to compare the development direction of Hungarian libraries with international (European and US) trends, and to use new statistics, research results and needs assessments bypass as well as the extent to which libraries have been able to adapt to significantly changed user needs and whether their newly developed services are in line with them.

**Keywords:** changing social needs, transformation of the library services, statistics, digitizing

## INTRODUCTION

Libraries have always tried to adapt to changing social needs, the development of the sciences, and the emergence of new technological solutions. Consider, for example, the invention of book printing or the mass distribution of printed products and the resulting current bibliographies or even to the gradually emerging reference service. Undoubtedly, the next major stage in the development of library science will be induced by the spread of computer science and informatics. More and more areas of life are digitizing and people are increasingly relying on electronic sources to obtain information. Thus, the use of digital remotely accessible services has become commonplace. All of this involves a transformation in people's expectations of the library, and libraries are trying to keep up with emerging needs. More and more libraries offer thematic collections that are available electronically so eventually the digital, remote access use of services become daily. They also enable electronic document lending, online events, e-learning courses and other services that have recently been integrated into the library's service offering. In my research, I would like to explore how the Hungarian, European and US librarian profession has reacted to the fundamental transformation of the

societal demands placed on libraries in the last two decades whether their electronic services have been able to respond appropriately to new societal needs and are still able to meet the role set out in the 1994 IFLA and UNESCO Manifesto on Public Libraries. The aim of my research is to review the transformation of the library service offer over the last two decades, to compare the development direction of Hungarian libraries with international (European and US) trends, and to use new statistics, research results and needs assessments bypass as well as the extent to which libraries have been able to adapt to significantly changed user needs and whether their newly developed services are in line with them.

The digitization and accessibility of public collections in digital form has already begun worldwide. The digitization of libraries can be seen not only in the digitization of their collections, but also in the transformation of their range of services. More and more libraries offer electronically accessible thematic collections and other online databases, remote reference services, electronic document lending, online follow-up events, e-learning courses, and other services that have recently been incorporated into library services.

The role of the library in society can be significantly determined in the long run by its ability to adapt effectively to changing user needs. Can it define and transform its services in such a way that its centuries-old role in providing authentic information, preserving our cultural heritage and advancing the sciences is maintained and at the same time fulfills the function of the 1994 IFLA and UNESCO Manifesto (IFLA / UNESCO, 1994)? "The library of public culture, as a local gateway to knowledge and universal memory, has the most important role to play in supporting the lifelong learning and cultural development of the individual, providing both information and imaginative works."

The digital transformation has been going on for a long time, although it has only become so radical in the last few years that it is perceived by everyone in their daily lives. The process began with the advent of the first computers and intensified in parallel with the transformation of industrial society into information society. The information society has a major impact on all areas of life. Change affects not only the economy, but all social systems that are being rebuilt according to the basic logic of the information society. This is because information and informatics affect all aspects of life. It affects the economy, trade, administration, culture, science, all kinds of education, health care. Also, in the field of law - for example, jurisprudence, legislation and law enforcement. The information society has had a direct and strong impact on the development of microelectronics, computing and telecommunications technology in particular, and the rapid development of these areas has made it possible to digitize information sources and digitize the library service system.

The declared goal of the European Union is to become an information society. They recognized that they need to give direction and opportunity to global social transformation as they can serve the continent's competitiveness more strongly. At the same time reducing the risk of negative consequences (crime, alienation). Libraries have also played an important role in this process from the outset, as they have realized that they can do their job much more effectively through information technology and digital information sources. The IFLA/UNESCO Manifesto on Public Libraries (IFLA/UNESCO, 1994) states that "ensuring free access to information, regardless of the means of communication and borders, is a central responsibility of librarians and information professionals". The Manifesto states that "unrestricted access to information is essential for freedom, equality, understanding and peace throughout the world".

Libraries around the world, almost everywhere, have developed their own strategies and guiding documents as described above. The present study focuses on the processes in Hungary and, based largely on official library statistics, shows how the supply of library services has digitized over the last two decades. The study is a narrower slice of a more comprehensive research that focuses on Hungarian processes. The later results of the research, which plan to

put the Hungarian processes in context with the European and US processes, are expected to be made public between 2021 and 2022.

## **DOCUMENTS RELATING TO THE INFORMATION SOCIETY IN HUNGARY**

The 1997 CXL. Law in Hungary, the operation of the library system is primarily regulated by the 1997 CXL. Act CXL of 1997 on museum institutions, public library services and public education. The law stipulates the following in connection with the library system: "The basic system for the functioning of the information society and the democratic rule of law is a library system through which information is freely available to anyone. Maintaining and improving library care is necessary for citizens and society as a whole. And the state maintenance of the library and information service is strategically important. The library system must serve the interests of the citizens. "

### **Hungarian Information Society Strategy**

Hungarian strategies and programs that help digitize different areas of life and are related to information and infocommunication usually rely on the library system. One of the first such strategies, the Hungarian Information Society Strategy (Ministry of Informatics and Communications, 2003), formulates the role of the library in the information society as follows: "The main direction of Culture serves the structured collection, systematization, multilingual digitization, on-line and off-line availability of Hungarian cultural values for both Hungarians and Hungarians abroad, taking into account the dual obligation to preserve and disseminate cultural heritage. The result of this task is the completion and harmonization of new library, museum and archive catalog systems based on IT tools."

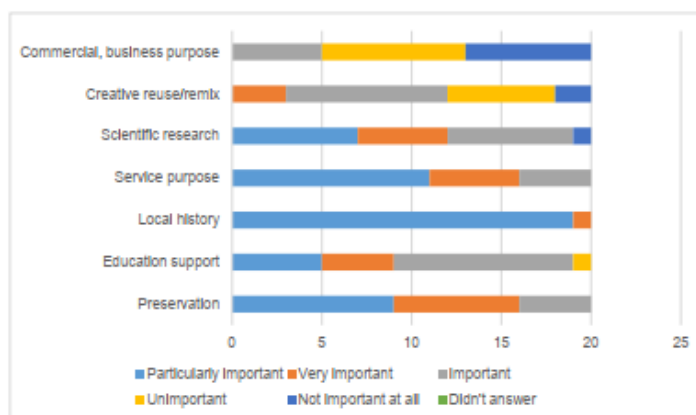
### **National Infocommunication Strategy**

The National Infocommunication Strategy valid from 2014 to 2020 (The Government of Hungary, 2014a) aims to promote the digitization of certain areas of life, considers the library as a partner in several points in order to achieve the goals (for example, reducing the digital divide, developing the population's digital competencies, dissemination of online forms of education and training, etc.).

## **DIGITIZING ANALOG LIBRARY DOCUMENTS**

Since the widespread availability of computing and IT tools allowed to digitize data stored on a variety of analog media (paper, magnetic tape, vinyl record, etc.), libraries have begun to digitize these materials. The motivation for digitization is very diverse all over Europe from ensuring equal access to the cultural assets to preservation, creative reuse, commercial purpose or all of these. Different libraries are setting different principles and priorities in the focus of their digitization activities.

Based on a 2017 survey conducted at the Library Institute of the National Széchényi Library in Hungary (Bognár, N. E., Horváth, A., Tóth, M., 2018, p. 69-70), the digitization priorities of county-level city libraries and the capital library look as follows (charts in my own translation):



**Figure 1.** Digitization priorities of Hungarian county libraries and the capital library (n = 20)

The county libraries and the Metropolitan Ervin Szabó Library in Budapest, like the city libraries, have identified local history as their main digitization priority. It is also similar to urban libraries that creative reuse - and remix, as well as commercial and business purpose, were not considered important at all in digitization. The county libraries and the capital library considered the service aspect to be a little more important than the city libraries.

The tools needed for digitization and technological solutions for long-term digital preservation have evolved and transformed in parallel with computing and information technology. For a long time, it has been a problem that there is no developed, unified digitization methodology and no coordinated digitization strategy within the library system (including data storage systems, different file formats and different metadata systems). There were experiments, of course, but the digitization activities of libraries, often independent of each other, resulted in a large number of multiple digitized documents.

### Public Collection Digitization Strategy

The elimination of inconsistencies and the coordination of digitization strategies established at the level of individual libraries in Hungary by the Government in 1404/2017. (VI.28.) The Public Collection Digitization Strategy 2017-2025 (The Government of Hungary, 2017a) prepared during the implementation of the Digital Nation Development Program (The Government of Hungary, 2014b) was adopted by Government Resolution. Its significant goal is to supplement the digitization of stock protection, which has traditionally been considered a primary task, with digitization for publication, taking into account user aspects, which helps to dynamize the digital archiving of the entire Hungarian cultural heritage, contributing to the development of citizens' digital competencies and indirectly stimulating the economy. It is envisaged that the most researched, most valuable, most endangered documents will be digitized first.

### Digitization strategy of the National Széchényi Library 2017-2025

In line with the Strategy, the digitization strategy of the National Széchényi Library 2017-2025 was also born (National Széchényi Library, 2017). As described in the strategy of the national library, the library has already established the so-called Digitization Center within the library building, in which, according to a coordinated strategy, the planned digitization of analogue documents was started with the most modern digitization tools currently available. This is an important step because the number of documents on the traditional media of the National Széchényi Library was 10.5 million according to the situation in 2014 and the growth is around 1-2% per year (National Széchényi Library, 2017, p. 24). There is a legal deposit service in Hungary, so all documents published in the current territory of the country reach the national

library.

It would be impossible to digitize all documents in the foreseeable future; therefore, the strategy named the criteria for the selection of documents to be digitized (National Széchényi Library, 2017, pp. 25-26):

- Principle of social demand: documents or collection items that have a social need are digitized.
- Sufficient data principle: documents are digitized for the identification and provision of which sufficient data (metadata) can be provided;
- Data backup principle: documents that can only be economically secured by long-term access due to long-term access to the data on the original media will be digitized.
- File protection principle: documents whose continuous service in the original analogue file would cause unreasonably large deterioration will be digitized.
- Economy principle: the selection must take into account the economic capability to digitize the original material selected for digitization.
- Principle of diversity: the selection should take into account the diversity of analogue media (document diversity) from billboards to micro manuscripts, from photo negatives to different types of records.
- Principle of reusability: when published, it creates opportunities for creative use and can contribute to the development of the cultural economy through commercial use.
- The principle of mass information: a selection criterion can be used if data can be extracted from digitized data in bulk using data mining or automatic text analysis methods, or their linking to other data can also lead to new information.

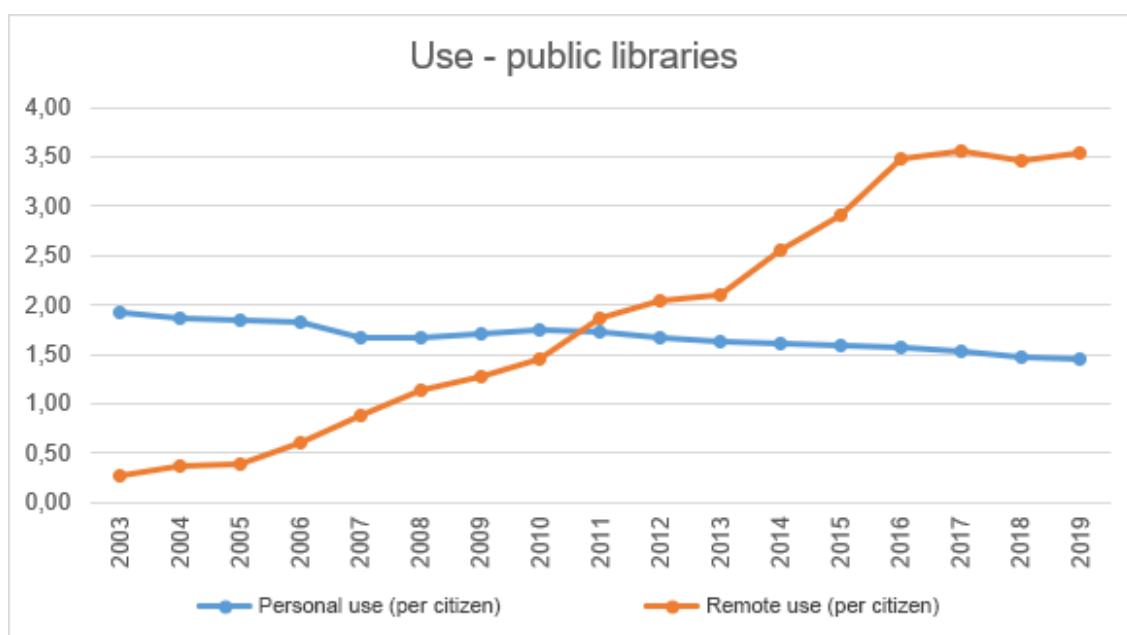
According to the Public Collection Digitization Strategy, the total number of library documents to be digitized is approx. 3.5 million.

## **DIGITIZATION OF THE RANGE OF LIBRARY SERVICES ACCORDING TO STATISTICS**

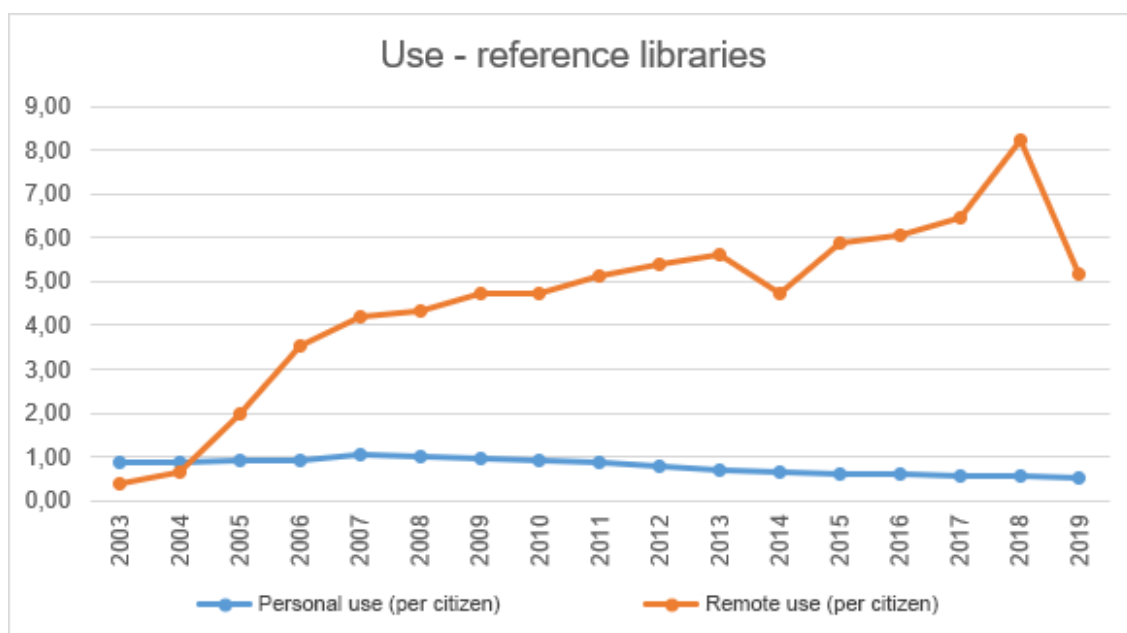
In Hungary, the 388/2017. (XII. 13.) on the mandatory data provision of the National Statistical Data Collection Program (The Government of Hungary, 2017b) prescribes the obligation of libraries to provide annual data for statistical purposes. We have had relatively comparable data since 1999, and the data collection is coordinated by the Library Institute of the National Széchényi Library.

In 2020, a trend report was prepared by the Research and Analysis Department of the Library Institute (Hungarian Library Institute, 2020), below I present the data relevant to the study:

## Personal and remote use in public and reference libraries



*Figure 2. Development of personal and remote use between 2003 and 2019 in public libraries in Hungary*



*Figure 3. Development of personal and remote use between 2003 and 2019 in reference libraries in Hungary*

Remote use of public libraries has been rising steadily for two decades, while personal use is showing a slow but steady decline. The number of remote uses in public libraries exceeded that of personal libraries after 2010, but this was already the case in reference libraries in 2005. The phenomenon is not surprising, as the emergence of 21st century forms of remote use has been made possible by the proliferation of personal computers and the Internet (e.g., reservations made from the library's website, extensions, credit card payments, etc.).

This phenomenon must have appeared much earlier and on a larger scale in reference libraries due to the appearance of literature databases. The decline seen in 2018 was due to a change in

the measurement method of some specialist libraries, not an actual decrease.

Libraries have recently set up a number of thematic websites and their own databases. They have also expanded their digital offerings by digitizing and serving local newspapers. These services are available from libraries' websites, thus influencing the continued growth of remote use. The design, delivery, and expansion of electronic services requires librarians to acquire a whole new type of competency.

### Rental and local use in public and reference libraries

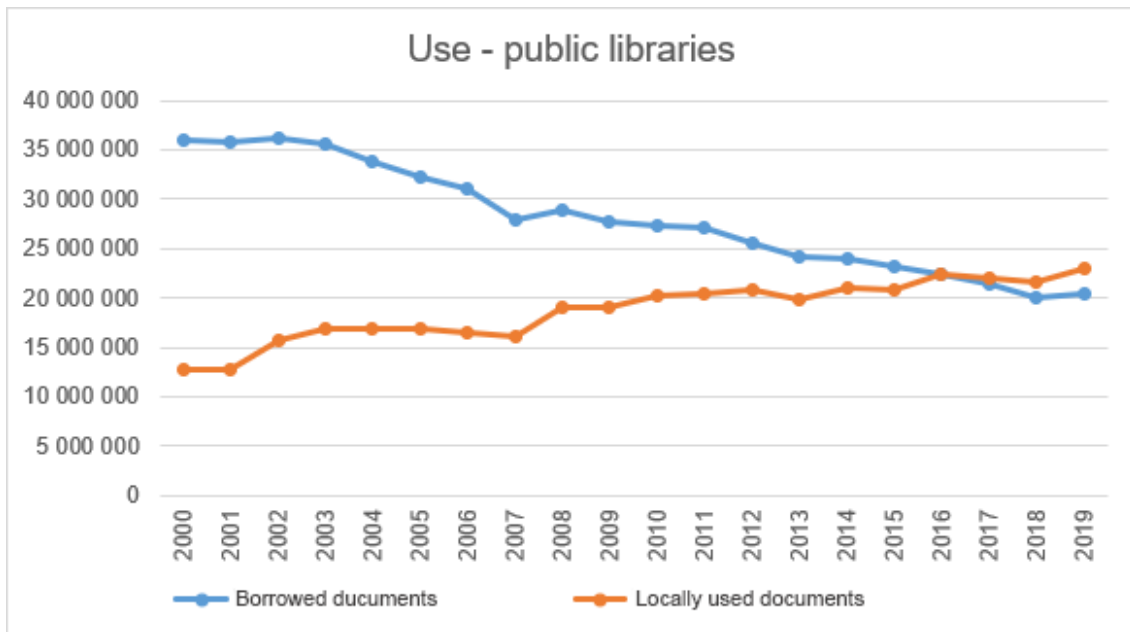


Figure 4. Development of the number of borrowed and locally used documents in Hungarian public libraries between 2000 and 2019

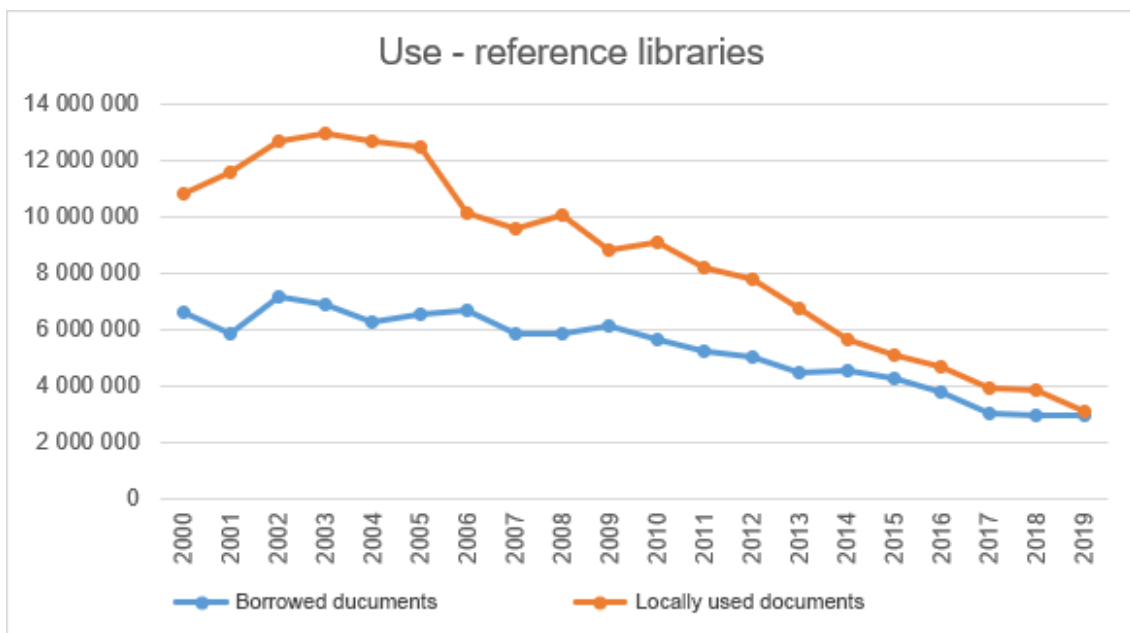


Figure 5. Changes in the number of borrowed and locally used documents in Hungarian libraries between 2000 and 2019

It may come as a surprise, but with the increase in remote use, despite the decline in personal use, the number of documents used locally in public libraries has been rising for years. In contrast, the number of on-site uses of both borrowed documents and documents in specialist libraries has been steadily declining since the second half of the 2000s, and by 2019 the same value has been adopted. The reason for this is certainly to be found in the transformation of the nature of library use, as libraries are increasingly becoming community arenas for work, study, teaching and entertainment, not only in Hungary, but almost everywhere in the world. As the external appearance of libraries becomes more and more attention-grabbing and unique, their interiors are becoming more and more a community arena, where document lending is increasingly shifting towards local use. (it is enough to look at the new library buildings handed over in the last few years, e.g. Chicago Public Library, Lake Villa Public Library, Oodi Helsinki Central Library, Tianjin Binhai Library, Calgary Central Library, Qatar National Library, Austin Central Library, etc.).

Due to their role and nature, reference libraries are less thought of as community arenas by library users. On the other hand, the electronic databases they build or make available are becoming increasingly important in both learning and teaching and scientific work, as researchers often publish their results only in electronic form in a database or in a digitally accessible journal.

## CONCLUSION

So, we see that we are witnessing two parallel phenomena: people are increasingly demanding remote library services, and this is being recognized by more and more libraries, library websites are becoming more advanced, and their range of online electronic services is constantly expanding. Nonetheless (or precisely because of this), libraries are increasingly functioning as a community space, a venue for events where visitors can encounter a diverse range of cultural programs in addition to documents and safe, comfortable spaces suitable for a long time in them.

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