

EÖTVÖS LORÁND UNIVERSITY  
FACULTY OF HUMANITIES

**SUMMARY OF PHD THESIS**

**Gergely Etele Szüts**

**SCIENTIFIC AND EXACT EXAMINATION OF THE DIGITAL  
PRESERVATION OF HUNGARIAN NATIONAL CULTURAL ASSETS**

DOI: 10.15476/ELTE.2024.110

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# **1. INTRODUCTION, SIGNIFICANCE OF THE SELECTED RESEARCH AREA**

The development of human civilisation has produced great cultural achievements, which we collectively regard as cultural heritage. For a long time, knowledge of them was the privilege of a few, until the advent of the printing press, which from the mid-15th century onwards made it possible to disseminate culture and promote science more widely. The period in human cultural history from then to the present day, in which the printed book has come to play a prominent role as a medium of communication, is known as the Gutenberg galaxy. The next big leap was the beginning of the 20th century with the advent of film and then electronic media. The digital revolution, which started in the middle of the last century and is still going strong today, brought with it the most effective technology ever for the dissemination of culture: digitisation. It is now clear that the rise of digitalisation, the rise of the Neumann Galaxy, does not mean the end of the Gutenberg Galaxy. The book remains one of the most popular and reliable information carriers.

Every nation, regardless of its historical situation, has a fundamental responsibility to nurture, preserve and make accessible its cultural heritage. The use of information and communication technology (ICT) has gained ground in many areas of life, as well as in the delivery of these basic tasks. Since the advent of the computer, library and information science professionals have had the same need to digitise and preserve our cultural heritage on heterogeneous analogue media (paper, film, audio tape, etc.), thus ensuring its preservation for future generations.

In my opinion, an important element in the preservation of our cultural heritage is Hungary's thousand-year history and the situation of Hungarians who were separated from the country in the 20th century. We can make the documents of universal Hungarian culture much more easily accessible in digital form to Hungarian communities beyond our borders, and cultural documents of Hungarian relevance created outside our borders can also reach the motherland more easily.

In my dissertation, I will examine, with a scientific concern, our efforts in the field of digital preservation of Hungarian national cultural assets, the results of the current institutional systems and possible problems. Those who work in public collections know that there is no continuity in the implementation of digitisation of Hungarian cultural heritage stored in Hungarian institutions. There are frequent duplications and projects that are discontinued or restarted, which, nevertheless, have an impact on the literacy, reading and research habits of future generations. This is so true that, even while writing this dissertation, the designated roles of some domestic and foreign institutions have changed several times, new services have been created and others have been discontinued, the legal environment has changed, new domestic and EU strategies and recommendations have emerged, etc. The future role of the Hungarian National Museum Public

Collection Centre, which will integrate the Hungarian Natural History Museum, the Museum of Applied Arts, the Hungarian Museum of Trade and Tourism, the Petőfi Literary Museum and the National Széchényi Library (NSZL) from 1 July 2024, in the digital preservation of our cultural heritage is not yet publicly available. With all this in mind, my PhD thesis can only serve as a snapshot, as the strategic and institutional framework for the digital preservation of Hungarian national cultural assets is constantly changing and evolving.

## 2. PERSONAL MOTIVATION

Early in my career, I was lucky enough to join a project to digitally preserve a piece of our cultural heritage. When I started working at the recently inaugurated Csorba Győző Public Library in the South Transdanubian Regional Library and Knowledge Centre in 2011, the library started to design a new database called *Baranyai Digitár* (Baranya Digital Library) under the guidance of project manager Mr. Zoltán Kovács. The basic objective of the project was to make the intellectual and cultural assets created in Baranya County and those that would be created in the future freely accessible through the library's website.<sup>1</sup> I was actively involved in the planning and launching of the Baranya Digital Library, which gave me the opportunity to get acquainted with a number of unique documents, film or audio recordings on paper, with a local history theme, which basically determined my future vision of a career as a librarian in the field of cultural heritage preservation and dissemination.<sup>2</sup>

In my research, I draw heavily on my personal experiences as a civil servant in various positions at the Hungarian National Digital Archive and Film Institute (Hungarian: Magyar Nemzeti Digitális Archívum és Filmintézet – MaNDA) from 2014–2016, and then as Head of the Digital Archive Development Department of the then 100% state-owned<sup>3</sup> Forum Hungaricum Nonprofit Ltd. (hereinafter: Forum Hungaricum), which took over some of the tasks of MaNDA from 2017–2022.

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<sup>1</sup> PAP, Dávid Zoltán – SZÜTS, Etele: A virtuális Baranya felépítése. A Helyismereti Gyűjtemény mint digitális tartalomszolgáltató. = Könyv, Könyvtár, Könyvtáros, 27. vol. 12. no. 2018. 3–7. p. Source: [https://epa.oszk.hu/01300/01367/00309/pdf/EPA01367\\_3K\\_2018\\_12\\_003-007.pdf](https://epa.oszk.hu/01300/01367/00309/pdf/EPA01367_3K_2018_12_003-007.pdf) [21. 06. 2024.]

<sup>2</sup> SZÜTS, Etele: Baranya megye egyes helytörténeti érdekességei a Magyar Nemzeti Digitális Archívumban. In: ERDŐS, Zoltán – KINDL, Melinda – SZABADOS, Csaba – FEKETE, Sándor (ed.): Látószögek és diagnózisok: Közös dolgaink 2019–2020. Pécs, Közös dolgaink – független értelmiségi platform, 2020. 87–98. p. Source: [https://www.academia.edu/48869823/L%C3%A1t%C3%B3sz%C3%B6gek\\_%C3%A9s\\_diagn%C3%B3zisok\\_K%C3%B6z%C3%B6s\\_dolgaink\\_2019\\_2020](https://www.academia.edu/48869823/L%C3%A1t%C3%B3sz%C3%B6gek_%C3%A9s_diagn%C3%B3zisok_K%C3%B6z%C3%B6s_dolgaink_2019_2020) [21. 06. 2024.]

<sup>3</sup> Pursuant to Act XLI of 2023 amending certain acts necessary to promote the economic exploitation of innovation and scientific results, Forum Hungaricum is the maintainer of the Foundation for Hungarian Culture. Source: <https://magyarkozlony.hu/dokumentumok/3ece1be2cf1dd048409a2909ed223ca31f45a534> [21. 06. 2024.]

### **3. THE OBJECTIVE OF THE DISSERTATION, RESEARCH METHODS**

#### **3.1. The objective of the dissertation**

Referring back to the statement mentioned in the introduction that the digitisation of Hungarian cultural heritage stored in Hungarian cultural heritage institutions is not characterized by continuity and there are frequent parallelisms, projects that are discontinued and then restarted, I see great potential in the analysis of the topic. Hence, the main goal of my PhD research was to write an interdisciplinary thesis based on international and domestic literature, strategic documents and progress reports, which would both scientifically map the practices of the past thirty years and the possible development of the Hungarian system. My thesis has a number of objectives underpinning this main aim.

- First of all, the dissertation places great emphasis on presenting the evolution of strategies and programmes related to the digitisation of our cultural heritage in the appropriate international context. In a comprehensive analysis, it explores in detail the changes and developments in this field over the last decades, taking into account the introduction of new services and the creation of new institutions.
- Furthermore, I consider it worthwhile to identify the institutional system that was or is still mentioned in the strategy documents under review. And by comparing the current domestic strategic and institutional framework with international ones, I would like to get an overview of digitisation activities in different European countries. Thanks to this detailed comparison, the dissertation will provide a comprehensive picture of the diversity of the subject in Europe, contributing to the sharing of international practices and experiences in this key area.
- Thirdly, the aim of the paper is to provide suggestions for the further development of our digitisation strategy for public collections as a possible vision for the future. It is hoped that the resulting proposals will inspire the field of digitisation in public collections and contribute to the development of more effective and innovative methods in the future.
- In addition to the above-mentioned studies, the aim of my thesis is to provide a comprehensive overview of the digital preservation of Hungarian cultural assets (primarily from a library perspective), which can serve as a guide for both Hungarian and foreign library and information science professionals.

### **3.2. Methods and timeframes of the research**

In my thesis, I relied primarily on the literature in Hungarian and secondarily on the literature in foreign languages. The basis of my research was also largely determined by the legislation of the period under study. For the preparation of the dissertation, I used a number of international and national strategies, research reports and reports on digitisation and digital preservation.

My research is based on a scientific analysis of institutions and their projects for the digital preservation of our cultural heritage, compared with international examples, as well as on projects coordinated by institutions that existed before the digital world. I have endeavoured to systematically include examples from different types of cultural heritage institutions, but the scope of the thesis does not allow for a uniform coverage of all public heritage branches, so my focus is on library digitisation. A further reason for this narrowing down is that my personal experience, supported by my research, is that library and archival materials still remain the priority group for digitisation of cultural resources, followed by archival materials, then museum collections and audio-visual heritage, and finally built heritage.

I conducted quantitative research on the promotion of digitised cultural heritage through social media. I investigated the effectiveness of a marketing campaign on Hungarian cultural heritage. I analysed the impact of an online marketing activity, launched as a pilot at the time, on the official Facebook channel of Forum Hungaricum, Kultúrkinés (English: Cultural Treasure).

The oldest public electronic book collection in Hungary is housed in the Hungarian Electronic Library (Hungarian: Magyar Elektronikus Könyvtár – MEK), whose (experimental) collection has been available online since 1994, and the first state initiative to create the institutional conditions for the digital preservation of Hungarian cultural heritage was the establishment of the John von Neumann Digital Library in 1997. A little earlier, in the early 1990s, the market player Arcanum started to publish CD-ROMs containing text documents for the first time in Hungary. Therefore, I chose the early 1990s and the above mentioned milestones as the starting period of my research. The objectives of the John von Neumann Digital Library were very similar to the mission of the MaNDA, which was formulated in 2011 and which may also resemble the National Repository Project (Hungarian: Nemzeti Adattár Projekt – NAP),<sup>4</sup> which was formulated in 2017 and is still in the planning phase. From the

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<sup>4</sup> The target date for the launch of the NAP was 30 September 2021, but as of the writing of my dissertation, the service has not been launched.

creation of the John von Neumann Digital Library to the creation of the planned NAP, I would like to compare the above-mentioned goals with the results achieved, to analyse the problems encountered with a scientific approach and to draw lessons learned. However, the period under review can be fraught with strong political overtones, and I will therefore try to focus on library issues.

### **3.3. The structure of the dissertation**

Chapter 1, which serves as an introduction, includes the rationale for the choice of the dissertation topic, the aims of the dissertation, the research methods, the hypotheses and the structure of the dissertation.

Chapter 2 contains the basic concepts and their legal framework, it includes the rules of the highest legal norm of our country – the basis of the Hungarian legal system – the Fundamental Law of Hungary in relation to the preservation of our nation’s culture and cultural heritage. Based on the Act LXIV of 2001 on the Protection of Cultural Heritage, I will present the definition of cultural heritage under domestic legislation and list its elements. Based on the international literature, I present the broader concept of cultural heritage and digital preservation, its general issues, areas and selection criteria.

Chapter 3 focuses on international recommendations on digital preservation of cultural heritage issued by IFLA (International Federation of Library Associations and Institutions) and UNESCO (United Nations, Educational Scientific and Cultural Organisation).

In Chapter 4 of this thesis, I will describe the EU strategic foundations, starting with the *Lund Principles* and ending with the *Recommendation (EU) 2021/1970 on a common European data space for cultural heritage*. The European Commission’s (EC) *Recommendation 2011/711/EU on the digitisation and online accessibility of cultural material and digital preservation* and its evaluation are presented in detail. I will present the domestic implementation of some of the points of the particularly successful Recommendation 2011/711/EU, which has been in force for more than 10 years. It is essential to summarise Hungary’s progress along the lines of the EU Recommendation between 2011 and 2021.

A number of strategies and related programmes for the digital preservation of our cultural heritage have been developed during the period under review, but until the publication of the PCDS, there was no comprehensive plan for the tasks of cultural heritage institutions. In Chapter 5, entitled *Hungarian strategies and related programmes for the digitisation of our cultural heritage*, I analyse the main Hungarian governmental and professional strategies related to the digital preservation of Hungarian national cultural assets, as well as the related

programmes, focusing on the period between the publication of the *Hungarian Information Society Strategy* in 2003 and the publication of the *National Digitisation Strategy* in 2022. In the context of professional strategies, I thought it important to take into account the programme and findings of the National Conference on Librarianship, which I have done in this chapter. In the course of the analysis, I will describe in detail which specific digital preservation tasks and institutional arrangements have been defined along which lines of the objectives in the documents adopted at government level. In this chapter, I evaluate the achievement of the objectives set.

In chapter 6 of the thesis, I present the establishment and projects of the John von Neumann Digital Library, the establishment of the MaNDA and its aggregation activities. I describe the most important tasks of the Petőfi Literary Museum's Digital Humanities Centre, which was established at the time of writing and has since been merged into the NSZL. At the end of the chapter, I will describe the activities and services of Arcanum, the largest market partner of the national heritage institutions. In this chapter, I will focus on the digitisation activities of the NSZL, one of the sectoral aggregators of the PCDS, which is explained by the fact that the integration of digitisation tools in the national library started almost in parallel with the emergence of IT tools, much earlier than many national public collections, and that the NSZL is currently designated as the national competence centre for the coordination of digitisation activities in public collections.

In Chapter 7, a comparative analysis was made of digitisation activities in several countries that are geographically distant from each other, of different sizes and have developed in substantially different ways due to their different historical backgrounds. I compared the digitisation activities of the Kingdom of the Netherlands, the Kingdom of Sweden, the Federal Republic of Germany and the Slovak Republic with Hungarian initiatives. In my studies and in my work, I have also sought to gain personal insights into the digitisation activities of the Member States under comparison.

In Chapter 8, I will present in detail the various landmark pan-European initiatives of the past twenty years in which Hungary has been an integral part. Among others, I discuss the MINERVA, MICHAEL, DC-NET and ENUMERATE projects, but I also present the activities, strategy and aggregation model of Europeana, the digital library of the Union, which plays an important role in my research. I will show what we have achieved in terms of exporting our national culture and making it known worldwide.

In Chapter 9, I focus on global initiatives and their domestic implications, such as the Gutenberg Project, Google Books, the Arctic World Archive and the Internet Archive for the preservation and dissemination of cultural heritage.

Chapter 10 contains a quantitative analysis of social media. In this chapter of my thesis, I present the role of social media in relation to the sharing of cultural heritage in the light of international literature. Through the online marketing activities I coordinate for the Forum Hungaricum Cultural Heritage Facebook page, I present in detail how the MaNDA DB aggregation database has increased its user base through social media.

I will discuss the copyright issues of digital culture promotion in detail separately, in the chapter 11 of the thesis. I will present the relevant regulations of Act LXXVI of 1999 on Copyright, the concepts of orphan work and the term of protection, the institutional system of collective rights management and the cases of free use in the copyright law. I also describe the activities of Creative Commons and RightsStatements non-profit organisations.

In chapter 12 of the dissertation, I present the proof of the hypotheses and the scientific results of the thesis.

Chapter 13 is not only a simple summary, but also a possible vision for the future, with suggestions for improving our digitisation strategy for public collections.

At the end of the PhD thesis, Chapters 14–18 provide a list of the literature used, figures, tables, legislation, government decisions and abbreviations.

Finally, Chapter 19 contains the keywords of the dissertation.

## 4. SCIENTIFIC RESULTS

### 4.1. Theses

Based on my quantitative research, literature and strategy documents, I summarise my scientific findings in the following six points:

**Thesis 1:** *Within library and information science, the field of digital preservation of cultural heritage is evolving rapidly in parallel with the rapid innovation of information systems. These changes need to be systematically mapped in (national) strategies and (sectoral) standards for cultural heritage institutions. Digital preservation of cultural heritage is a broad and rapidly evolving interdisciplinary field that needs to be jointly processed and validated by institutions with different profiles in order to create interoperable systems in which digitised documents produced according to uniform quality principles are available.*

In 2016, when I was invited by the Ministry of Human Resources to participate in the meetings of the Public Collection Digitisation Strategy (PCDS) Board of the Digital Nation Development Programme, Government Decision 1486/2015 (21.VII.), I started to work on national and sectoral digitisation strategies, and I had the opportunity to do deeper research during my PhD studies.

From an IT point of view, if we look at the Hungarian national digitisation strategy for public collections, the PCDS, published in 2017 and valid until 2025, we can see that the document was outdated by the time of the publication of the Recommendation (EU) 2021/1970 on a common European repository for cultural heritage in 2021 at the latest. Only four years elapsed between the two dates, but during this period we saw many innovations in library and information science in the field of digital preservation of cultural heritage, which need to be implemented at a strategic level as soon as possible to avoid a competitive disadvantage. In my opinion, these include, for example, living Artificial Intelligence (AI), technological solutions for Handwritten Text Recognition (HTR) of digital images containing text, or 3D modelling in public collection environments. There are already examples of the use of these innovative technologies in Hungary, but the PCDS does not yet mention them at the strategic level and does not recommend them to Hungarian heritage institutions. In addition to the above, the potential for the widespread adoption of Virtual Reality (VR), Augmented Reality (AR), cloud computing and blockchain technologies should also be given special attention today. In order for cultural heritage institutions to create interoperable systems, a digitisation strategy and a set of standards based on common quality principles are needed.

**Thesis 2:** *The Europeana Foundation has a number of highly beneficial added values in relation to the online dissemination of digital cultural heritage and is increasingly supporting the digital transformation of the cultural heritage sector. The perception of the Foundation's activities and usefulness is far from uniform across PCDS aggregators. In order to ensure that Hungary does not find itself at a 'competitive disadvantage' in the European digital market, and in line with the Recommendation (EU) 2021/1970 on a common European data space for cultural heritage, all public funding for future digitisation projects of cultural heritage in Hungary should be conditional on the availability of digitised content in the Europeana archive and the future common European repository.*

Europeana is a platform for the European Union (EU) where nearly 4,000 cultural heritage institutions make available more than 57 million cultural heritage items from their collections in a format that allows researchers, creative professionals and the general public to use and creatively reuse them. Contributing content to Europeana's archives can significantly increase the visibility of a collection, thanks in large part to the active follower base and innovative editorial team on the Europeana website. It can also provide an opportunity to present a digital collection to new audiences in education, research and the creative industries. Europeana's team also regularly produce galleries and blog posts of cultural heritage items from their archives, thus increasing their visibility. Europeana experts can also provide partners with technical guidance on data modelling, copyright and licensing.

Europeana, the EU's digital library, has already been the subject of a national debate in the planning phase. And in 2011, MaNDA, which has the status of a national aggregator, was given the dedicated task of regularly transferring Hungarian cultural treasures to the pan-European archive. From the MaNDA DB aggregation database created for the purpose of content provision – published by Forum Hungaricum since 1 January 2017 – Hungarian cultural heritage items are still exported to Europeana on a monthly basis. In 2016, the Hungarian National Museum (HNM) also launched its aggregation service, the MuseuMap portal, which also exports data to Europeana. Forum Hungaricum and HNM's aggregation services will be accredited as trusted by the Europeana Foundation from 2019.

While the Hungarian National Archives (HNL) does not directly contribute digital content to Europeana, it is worth noting that HNL member institutions are regular content providers to Archives Portal Europe, which is an accredited domain aggregator of Europeana. Despite the fact that in *Decree 30/2014 (10. 4. 2014) of the Ministry of Human Capacities* it was stipulated, among others, that the national library should participate in international professional

programmes and developments, especially in the national aggregation of Europeana, the NSZL is not currently a partner of Europeana. For this task, the Hungaricana Public Collection Portal or the MEK could be the right choice for the NSZL, there were examples years ago, for example, that through a project in 2014, the NSZL sent electronic books from the MEK through The European Library (TEL), which were last updated in 2017. The National Film Institute (NFI) – Film Archive also maintains two online databases of audiovisual and sound documents which in my opinion would be useful to aggregate documents from, namely The Hungarian World Newsreels Online and Gramophone Online. A further collection of documents that could be aggregated is contained in the NFI – Film Archive Library, the digitisation and export of which to Europe has been a priority in the MaNDA era. In my view, the institution’s current focus could be on its streaming service Filmio, which is marketed to the general public. The archives of the Media Services Support and Asset Management Fund (Hungarian: Médiaszolgáltatás-támogató és Vagyonkezelő Alap – MTVA) are also typically market-based, so perhaps understandably it does not export Europeana. The National Audiovisual Archive (NAVA) is run by the MTVA Digitisation Workshop Ltd., a joint-stock company, and in previous years it was prominently present on Europeana through the European television aggregation portal EUscreen, but the collection has been largely flattened and almost disappeared due to the major digital stock revision of Europeana 2022–2023.

From the data presented, it can be seen that the perception of the added value of the Europeana Foundation is not uniform among the PCDS aggregators, with typically the two accredited aggregators Forum Hungaricum, HNM and HNL carrying out the planned acquisition and promotion of the EU archive. In line with the Recommendation (EU) 2021/1970 on a common European data space for cultural heritage, I think it would be a good idea to make all public funding for future digitisation projects of the national cultural heritage subject to the condition that the digitised content is made available in Europeana and the future common European dataspace, alongside a central national digital archive.

**Thesis 3:** *In the field of digitisation of Hungarian national cultural assets, the aim should be to strive for completeness, for which it is necessary to establish cross-border partnerships at the level of ministries. Special attention should be paid to the cultural heritage of the Carpathian Basin Hungarians, not excluding the cultural heritage of diaspora Hungarians.*

Based on the experience of the PCDS 2017–2021, it can be concluded that both the institutional system and the funding scheme of the current public collection digitisation ecosystem need to be renewed, which, in my opinion, should be built on a full-vertical digitisation plan.

A considerable part of the Hungarian national cultural heritage preserved in cultural heritage institutions is located outside the current borders of Hungary. Furthermore, in the case of Hungarian cultural property beyond the borders or cultural property with a Hungarian connection, we more often encounter collections that are endangered or highly endangered, and therefore, in addition to the special attention paid to this area, we must also strive for a full-scale digitisation, focusing primarily on the Carpathian Basin, but also with attention to all parts of the world where Hungarian communities have lived or are living.

In my opinion, to achieve this task cross-border partnerships at the level of ministries are also necessary. I consider the cooperation between the Dutch Government and the Flemish Government at ministerial level to be good practice and an example to follow. In practice, the Netherlands and Flanders cooperate in a Dutch-language organisation, the Dutch Language Union (Nederlandse Taalunie). They word recommendations to both Ministries of Culture, and the Dutch Language Union also finances the linking of Dutch heritage organisations with Flemish dictionaries.

**Thesis 4:** *At international level, it is not uncommon for a country's heritage institution to partner with major publishers and large private companies such as Google or ProQuest. Despite the fact that the PCDS also explicitly recommends private sector involvement in the digitisation of Hungarian national cultural assets, the largest private sector partner in the Hungarian public collection system is Arcanum Database Ltd. A major development in the field of domestic PPPs would be needed, which would require a strong public commitment to finance it. Increasing the number of public-private partnerships will make the digital preservation and online dissemination of cultural heritage more dynamic.*

In my PhD thesis, I have selected countries that are geographically distant from each other, of different sizes and have developed in substantially different ways due to their different historical pasts, to analyse and compare their activities in the digital preservation of their cultural heritage. I examined the public-private partnerships (PPPs) in the Kingdom of the Netherlands, the Kingdom of Sweden, the Federal Republic of Germany and the Slovak Republic and compared them with practices in Hungary. The results of my research show that there are large differences in the extent to which the public collection systems of the countries under study cooperate with the private sector. While Slovakia was the only country to report that it did not participate in PPPs, the Netherlands and Germany have PPPs with large multinational companies such as Google and/or ProQuest. Somewhere between the two countries is Hungary, where the largest private sector partner in the public collection system is

currently Arcanum Adatabase Kft. In Sweden, private sector cooperation is also a cross-border partnership, and there are ongoing private sector partnerships in Norway in IT and museums.

The PCDS also explicitly recommends private sector involvement in the digitisation of Hungarian national cultural assets, but the Arcanum Database Ltd. is the largest private sector partner of Hungarian cultural heritage institutions in a decade, and the PCDS has not made any progress in this area. This is despite the fact that the business model of the company is not necessarily beneficial for all its partner institutions. I think that there is a need for a great deal of development in the field of PPPs in Hungary, and that this requires a major public commitment to finance it. Increasing the number of public-private partnerships would make the digital preservation and online dissemination of cultural heritage more dynamic.

**Thesis 5:** *In order for an institution to reach a critical mass of people with a particular digital collection, it needs to have an active online marketing activity. The most commonly used search engines on the Internet and social media (Facebook, Instagram, TikTok etc.) can be used to increase the number of users and reach a wider audience with the library's digital collection. All this requires an agreed institutional marketing strategy with a well thought-out column system, standardised hashtags and regular publication.*

The effects of the digitalisation of our lives over the past decades can also be seen in the changes in library user habits, and it is now commonplace that user habits have shifted to a large extent towards online, digitally accessible content. Based on the available data from the Hungarian National Library Statistics 2015–2022,<sup>5</sup> we can say that there was a slight decrease in face-to-face usage from 2015 to 2019, with a major drop in 2020 and 2021 due to the pandemic closure. In 2022, we experience a 29% increase, starting a return to the 2019 level, which has now reached 67% of libraries. However, the data on remote use show the opposite trend: the popularity of remote access services in libraries has been rising dynamically for years. After a slight decline compared to 2019, the number of remote visits to libraries rose again in 2020 (over 89.5 million visits), and in 2021 it exceeded 105 million, although this was followed by a slight decline in 2022 (96.5 million). On average, this represents 31,000 remote visits per data provider. The result indicates that remote, online access to library service points has been further strengthened in the context of an epidemic emergency. Databases and digitised

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<sup>5</sup> HAVADI, Gergő: Könyvtári trendjelentések 2015–2022 / 2023/ 4. no. Budapest, National Széchényi Library of Hungary, 2024. Source: [https://ki.oszk.hu/sites/default/files/csatoltfajlok/2024-04-lapszam\\_trendjelentes\\_oszk\\_2024.pdf](https://ki.oszk.hu/sites/default/files/csatoltfajlok/2024-04-lapszam_trendjelentes_oszk_2024.pdf) [21. 06. 2024.]

collections that can be accessed from home were a particular priority during the outbreak of the coronavirus.

Libraries have started to build a range of online services to meet the needs of remote citizens to access books and research materials as quickly, conveniently and, where possible, free of charge as possible. In our case, making public collection content available online is of particular cultural importance, as millions of Hungarians live outside our borders today and can access Hungarian documents available on the web much more easily than the originals. However, it is now also clear that these services need to be proactively delivered to users through various channels, one of which is social media (Facebook, Instagram, TikTok, YouTube, etc.). Social media offer platforms through which a wider audience can be reached. The library can raise awareness of its digital collection and services, not only in the local community but also on a global level. Active online marketing on social media can also provide an opportunity for a library to build community. It is easy to share visual content, old photographs or postcards, which can be used to share memories and opinions about the cultural content. Social media also offer a good opportunity for the library to interact directly with readers. Through comments, messages and shares, users can actively participate in the dissemination and sharing of library content.

In order to reach a critical mass of users of the MaNDA DB database, in line with the PCDS, we decided in 2018 to engage in active online marketing activities using the most commonly used search engines on the internet and social media. When the MaNDA was reorganised, the institution's Facebook page at the time was transferred to the NFI, so we launched a new one in early 2017 and started to rebuild our community of followers. The new Facebook page, called Kultúrkincs<sup>6</sup>, was piloted for the first months and from May onwards it started to feature regular content edited by the Digital Archive Development Department.

In order to ensure that the MaNDA DB's content could be found by search engines with the best possible results, several improvements had to be made. The major search engines, including Google, consider HTTPS (Hypertext Transfer Protocol Secure) as a positive factor in their search rankings, so we switched to it first and foremost, making it safer to access and browse our site. Then, the pages of the database elements were given a search-friendly URL (Uniform Resource Locator) and the addresses of the records were included in the URLs in the following format: */tetel/idszam/record\_cime*. URLs with this structure are not only optimal for search engines, but also help users to identify the content. Finally, we have developed a site

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<sup>6</sup> Forum Hungaricum's official Facebook page. Source: <https://www.facebook.com/forumhungaricum/> [06. 21. 2024.]

map, which is a daily updated list in Extensible Markup Language (XML) format containing information about the pages on the site and the relationships between them. This file is also read by Google and other search engines to more efficiently map the MaNDA DB.

In order to edit the appearance of links to our aggregation database and our official company website on Facebook, we needed to verify our domain with Facebook.<sup>7</sup> We need this in cases where the link to our aggregation database item is not accompanied by a preview image, or we are not satisfied with it and want to modify one of the metadata displayed – title or description. In order to verify the mandadb.hu domain, we chose to upload the HTML file out of the two options offered by Facebook – DSN TXT file or HTML file. As a first step, we added the mandadb.hu domain in Facebook’s business management interface<sup>8</sup> and then downloaded the HTML file generated by Facebook and placed it in the root directory of our page. Then, in the same place where we generated the HTML file for our Facebook page, we verified our domain with the click of a button. It is possible to add a domain to a page as an owner, but if someone runs multiple Facebook pages or we just want to give our partners the ability to edit the appearance of our links, we can enable it by assigning a partner to our domain, all we need to do is enter the partner’s business ID.

As of the second half of 2018, we have highlighted and prioritised our Facebook posts with different amounts and durations. For highlights, we have the option to target specific settings, such as the age range of users to target for featured posts and their location. We also set the budget and the number of days for which a particular post should be highlighted. You can manage your highlights and download your accounts in Facebook’s Ads Manager<sup>9</sup>. To take advantage of the highlighting options for each post, we not only placed it in the Facebook (mobile device) feed, but also in the Instagram feed and Instagram story, as well as using the advertising feature in the Messenger inbox. As can be seen in Figures 1 and 2, the highlights have led to a significant increase in the number of page views and the frequency of activity (likes, comments and other actions) associated with posts. Figure 2 also clearly shows how much Facebook’s search engine has changed over the course of a year, but at the same time, the financial investment in 2021 has produced significantly fewer paid post hits than in 2020.

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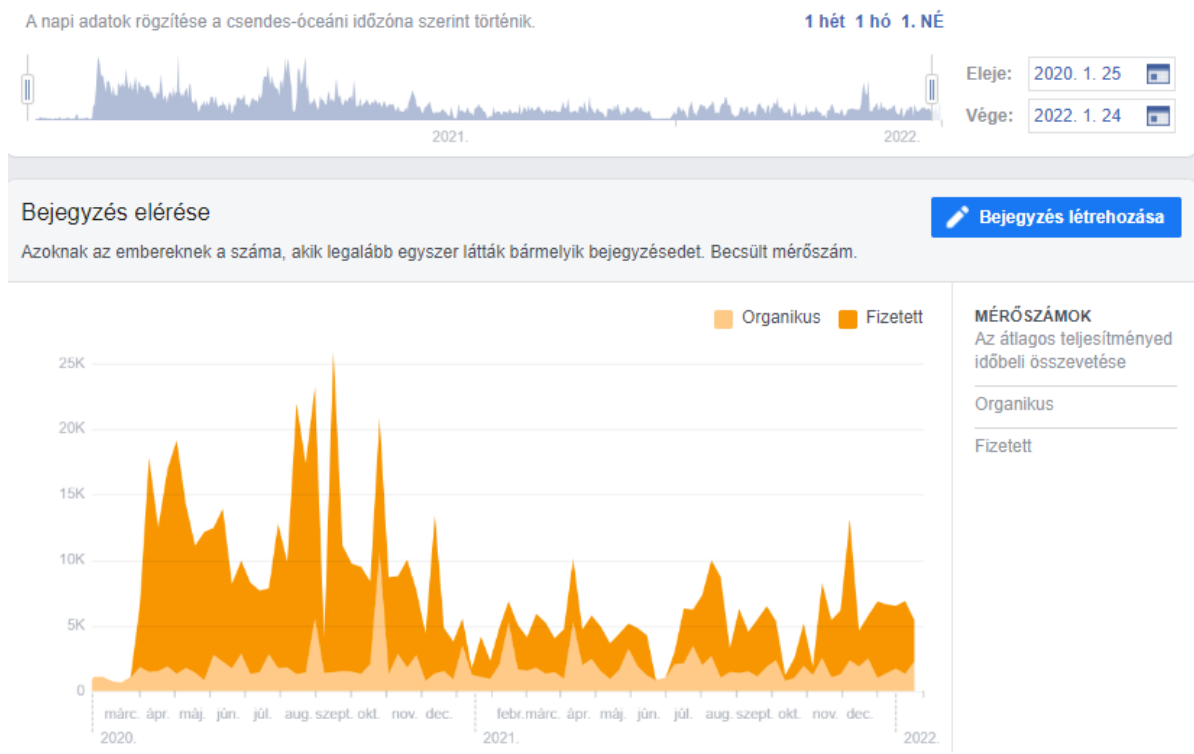
<sup>7</sup> Meta for Developers. Domain Verification. Source: <https://developers.facebook.com/docs/sharing/domain-verification> [21. 06. 2024.]

<sup>8</sup> Meta Business Suite. Source: <https://business.facebook.com/> [21. 06. 2024.]

<sup>9</sup> Meta Ads Manager. Source: <https://business.facebook.com/adsmanager/manage/> [21. 06. 2024.]



**1. Figure** Evolution of the number of followers of the Kultúrkincs Facebook page in the second half of 2018  
 Source: Facebook.com



**2. Figure** Accessing entries on the Kultúrkincs site organically and paid 2020–2021  
 Source: Facebook.com

The average number of hits clearly shows that image-type posts triggered more reactions, comments and shares, but in the case of link-type shares, the post achieved more clicks. After the advertising period that started in 2018, we examined the Google Analytics traffic measurements on the mandadb.hu domain. In the light of the results obtained, we can say that

our marketing activities were very effective, since thanks to the highlights and ads, the number of MaNDA DB users increased by almost 90% and the number of sessions (page views) by more than 81% compared to previous data.

**Thesis 6:** *The creation of a new digital archive can offer exciting opportunities for technological advances and information management, but from a sustainability perspective, the integration of legacy databases can offer significant benefits. An integrated approach allows for the reuse and optimisation of existing resources, minimising the cost and time involved in building new infrastructure. Integration not only provides efficiency and cost-effectiveness in the short term, but also offers a more sustainable solution for digital archives in the long term.*

The public first learned about the need to create an online search system for Hungarian public collections through the PCDS, the NAP project. According to the PDS, the NAP would be the basis for the cooperation of public collections by providing a single, easy-to-use data repository system.

The future goal of the NAP integrated search system is to search among cultural items in the digital archives of sectoral aggregators, to link the different contents, and to create a specific public collections standardised interface based on cooperation. The NAP is expected to provide broad access to digital content in ‘siloes’ institutional systems, and to provide results that point back to the data holder. The designers of the NAP believe, contrary to what I believe, that this would provide a higher level of social utility than current services can provide

It is not clear to me from the current concept of the NAP how this system would differ from the MaNDA DB aggregation database, as the MaNDA DB has, in my opinion, all the features that the NAP should have. It is able to store different types of digitised cultural heritage items from different types of cultural heritage institutions in EDM (Europeana Data Model) standard and it is also able to link back to the data host. According to my information, it has not yet been decided whether NAP should store digital objects or only link to the data host. In the case that links will point to the original data host, my experience so far is that there is a risk that the service will produce many incorrect results as the links change. The former National Digital Data Archive (NDA) service had similar problems. Furthermore, in the event that the NAP would also perform a national aggregator function towards Europeana, the current accredited services would also need to be repositioned.

With regard to MaNDA, which has a national aggregator function, it has often been argued that its medium mapping (43 metadata) and EDM data structure are not suitable to represent all

cultural heritage elements of all public collection branches. This, among other factors, has contributed to the institution's failure to fulfil its intended national methodological core role during its lifetime. For the time being, it is not clear to me why the NAP system should be of greater interest to the managers of national public collections. The Distributed Systems Department of HUN-REN Institute for Computer Science and Control has developed an OAI (Open Archives Initiative Protocol) search service, which allows searching, browsing and reviewing the content of OAI archives together. HUN-REN Institute for Computer Science and Control's Scientific Document Common Search Service is another service with similar functionality to the NAP's integrated search concept.

#### **4.2. Summarizing review of the results of the dissertation**

A summary and evaluation of the state strategies and related programmes established over the past 30 years for the digital preservation of Hungarian national cultural assets, and the institutional framework they have defined, will provide useful lessons for future strategic planning. The evolution of the strategies and programmes related to the digitisation of our cultural heritage in an international context is missing in the Hungarian literature, so the thesis can be seen as a gap-filling, summarising paper.

I consider it an important achievement that I assessed the five main points of the EC Recommendation 2011/711/EU *on the digitisation and online accessibility of cultural material and digital preservation*, which has been in force for an extremely long period of time, between 2011 and 2021, and described what Hungary has done to comply with the Recommendation over the last ten years along the individual points of the Recommendation.

The dissertation includes a quantitative analysis of social media in the light of international literature on the role of social media in the sharing of cultural heritage elements. In the light of the precise data, it clearly shows how social media have been used to increase the number of users of the MaNDA DB aggregation database through online marketing activities, coordinated by me, linked to the Forum Hungaricum Kultúrkincs Facebook page. The results of the analysis can serve as a guideline for the professionals responsible for online marketing activities in the cultural heritage institutions in Hungary.

My thesis provides an accurate overview of the digital preservation of Hungarian cultural assets (mainly from a library perspective) that can serve as a guide for both Hungarian and foreign library and information professionals. The thesis analyses in detail current digitisation practices and technologies, presenting the advantages and challenges of the methods used. It also presents, through various analyses, national and international good practices and lessons

learned. The dissertation provides a vision for the future and makes suggestions for the development of our digitisation strategy for public collections, taking into account the latest technological innovations and international trends.

In addition, the thesis draws attention to the importance of the long-term sustainability of digital preservation, conservation and development of digital archives. Furthermore, it is hoped that the thesis will contribute useful insights to the preservation of Hungarian cultural heritage in digital form, and will inspire and guide members of the library and information science community worldwide.

## **5. EXPLOITATION OF THE OUTCOMES**

The results of the dissertation also offer directions for the development of the digital preservation of our cultural heritage for the organisations responsible for the management of the cultural sector and for Hungarian cultural heritage institutions (especially the library system). Beyond the library aspect, the dissertation also provides new results and further research directions for professionals dealing with the digital preservation of Hungarian national cultural assets in general.

The progress reports of the Member States on the implementation of the 2021 Recommendation *on a common European data space for cultural heritage* for the period 2021–2023 are expected to be published in the second half of 2024, and the analysis and comparison of the different digitisation ecosystems revealed by the reports is certainly an interesting further research direction. The monitoring of new technological trends in various pan-European projects to build up data spaces and data warehouses, as well as further exploration of related disciplines such as AI, VR, AR, HTR, 3D modelling, cloud computing and blockchain, may also hold useful and forward-looking opportunities for cultural heritage institutions.

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