

Studying user's digital practices
and needs in Archives and Libraries
Final Report of the MADDLAIN project



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2017

The Partners of the MADDLAIN Project

- State Archives : www.arch.be
- Centre for Historical Research and Documentation on War and Contemporary Society (CegeSoma) (OD4-State Archives) : www.cegesoma.be
- Royal Library of Belgium : www.kbr.be
- Département des Sciences et technologies de l'Information et de la Communication (Université Libre de Bruxelles) : <http://mastic.ulb.ac.be/>
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The research underlying the results presented in this report was funded by the Belgian Science Policy Office in the context of contract number BR/153/A5/MADDLAIN.

Table of Contents

1. Introduction	4
1.1. The Digital Revolution	4
1.2. The Need to Engage with the Audiences	4
1.3. A Protean Study.....	5
1.4. Methodology	5
1.5. Structure of the Report	6
2. ICT and Digitization in the Institutions.....	8
2.1. CegeSoma	8
2.1.1. Websites	8
2.1.2. Digital Catalogue	9
2.1.3. Digital Collections	10
2.2. State Archives	13
2.2.1. Websites	13
2.2.2. Digital Catalogues.....	14
2.2.3. Digital Collections	14
2.3. Royal Library.....	16
2.3.1. Website	16
2.3.2. Digital Catalogue	16
2.3.3. Digital Collections	19
3. The General Public.....	21
3.1. Audience	21
3.1.1. Who are the Institutions' Visitors?	21
3.1.2. User Habits.....	24
3.2. Findings.....	26
3.2.1. Access to the Collections	26
3.2.2. Communication about the Collections.....	35
3.2.3. The Valorisation of the Collections	37
4. Conclusions and Tracks for the Future.....	39
4.1. Access to the Collections	39
4.2. Communication.....	43
4.3. The Valorisation of the Collections	44
4.4. Studying User's Digital Practices and Needs in Archives and Libraries.....	44
5. Bibliography.....	46

1. Introduction

1.1. The Digital Revolution

For several years now, the cultural institutions have definitely entered the digital era. From the outset, digital technology has created huge expectations. Technological progress has not only brought new opportunities for managing and valorizing the collections, but has forced the institutions to rethink their work processes, to gain new competences, to secure supplementary budgets and to reconsider some of their missions. Today, thousands of documents have been scanned and new technologies form an integral part of each stage of the production of knowledge: accessibility of sources, content analysis, conservation and valorization. Furthermore, the transition to digital meets a global mutation towards a more connected society, where access to knowledge becomes easier and where tools and sources are increasingly virtual. The huge changes that have come about through the digital era have been compared with those brought about by the invention of writing and printing.

1.2. The Need to Engage with the Audiences

In 2015, the Belgian State Archives, the Centre for Historical Research and Documentation on War and Contemporary Society (CegeSoma) and the Royal Library have engaged in a partnership with the aim of carrying out a totally new project. The three institutions hold an important part of the Belgian federal heritage collections: more than 7 million documents in the Royal Library and nearly 300 kilometer of archives in the State Archives and CegeSoma. Over the last decades, the public visiting these institutions has changed considerably, both in its composition as in its practices. Apart from academic researchers and amateur historians, genealogists, notaries and government officials now visit the Archives. More and more students visit the Royal Library and often use the reading rooms as places for studying as well as a means to access the collections. CegeSoma finally has received more media attention, as well as an increased interest from editors and exhibition venues within the context of the numerous commemorations organized over the last years around the two world wars. In each of these cases, digital technology has made the collections of these institutions accessible to a larger and connected public, possibly located further away, and certainly more demanding. A public also that has, in this era of new technologies, undergone a profound change in its way of life, of thinking, producing, distributing, consuming, discussing, working or travelling. With the aim of defining a plan of action and strategy that will meet as well as possible the ongoing changes in the practices and expectations of their readers with regard to digital access to information, the State Archives, CegeSoma and the Royal Library have, for the first time, given the users the opportunity to express their views.

1.3. A Protean Study

The study organized by the State Archives, CegeSoma and the Royal Library was carried out within the framework of a two-years research project financed by the Brain Programme of the Federal Science Policy between 2015 and 2017: the MADDLAIN project. This project was coordinated by CegeSoma, which since 1 January 2016 is the fourth operational direction of the State Archives. Two university partners were also associated : the department of Science and Technologies of Information and Communication at the ULB and the Ghent University through imec. The MADDLAIN project has made it possible to gather a panel of experts and researchers with an expertise in IT, archive management, librarianship, data management, historical research and mediation tools. The goal of the study has not only been to provide data on the practices and needs of the users in terms of access to digital information, but also to move the institutions forward in the management of methods and tools that will help them to acquire a more in depth knowledge of their audiences. Apart from the general study, two lines of research have been analysed: on the one hand the question of the mediation tools to facilitate the access to the collections and on the other the expectations of the university researchers who constitute an important target group of the three institutions. The popular and pseudoscientific discourse on big data and web analytics gives the impression that online tracking tools and shiny dashboards now make it extremely easy to gather objective facts concerning how people interact with online content and that trends emerge magically by themselves through the use of simple statistical methods. But one of the main lessons of the MADDLAIN project is the advantage of combining both approaches : quantitative and qualitative methods. This is why two types of data have been used for the overall project: the navigation data of the users in the catalogues and websites of the institutions, and the non-structured or semi-structured data gathered via survey questionnaires and interviews. The users have collaborated extensively to our research. Nearly 2,300 of them have participated in our online survey in the spring of 2016. That the project has produced useful and relevant results is due in large part to their contribution. The aim of the study was to blend all this information to get a perfect feedback cocktail giving to the institutions the opportunity to better meet the needs of their users.

1.4. Methodology

The MADDLAIN project was created with the aim of analysing the behaviour and the needs of different audiences with regard to the digital access to the collections offered by the aforementioned institutions. The research corpus on which this report is based was gathered between July 2015 and June 2016. It contains quantitative as well as qualitative data.

The qualitative side of the project (interviews with the staff members of the institutions and a user survey) was taken care of by a researcher at the CegeSoma for the part about the general public and by two other researchers at the State Archives and the Royal Library for the questions about virtual

research environment and the mediation tools. This qualitative side was spread over the entire duration of the project. The interview phase took around eight months to complete (1 month for the preparation stage, 1 month to conduct the interviews, 3 months to do the transcriptions and 3 months to make the analysis) and the user survey phase around five months (2 months for the preparation stage, 1 month for the post-processing of the data and 2 months for the analysis). Two specific surveys were also realised in the second year of the project on a smaller sample of people to study more thoroughly the question of virtual research environments as well as the one of mediation tools.

For the quantitative side, the corpus consisted of web logs acquired by making use of Piwik during the whole period. Goals were added in Piwik from January 2016 onwards. The researchers of imec were responsible for the integration of Piwik (a free open source software that allows to extract navigation data¹) in the websites analysed by the project. The researcher associated with the Université libre de Bruxelles made use of web analytics to analyse the collected data. The web analytics phase of the project was completed in eight months (1,5 months to develop the global methodology and to define the goals, 2,5 months to set the goals, 1 month to collect data and to perform quality control and 3 months for the analysis).

For a detailed presentation of the methodology followed by the MADDLAIN project, we refer to the article written by Anne Chardonens and Jill Hungenaert and published in 2017 in the journal "Archives and Libraries of Belgium".² It provides an accurate description of the methodological 'Goals' approach and the different steps required to collect interviews as well as to conduct a consumer survey.

1.5. Structure of the Report

The following report presents the overall results of the MADDLAIN project, all types of audiences combined. It is based at the same time on the interviews with the staff of the institutions, the general public survey, the Web Analytics data and the conclusions of the two other reports respectively dedicated to the specific needs of the researchers through the virtual research environments and the tools of digital mediations in libraries and archives centers.

This report is structured in two main parts. The first one describes the digital context of the three institutions studied: CegeSoma, the State Archives and the Royal Library. It provides an overview of

¹ More information can be found on <http://piwik.org> (accessed 28 August 2016).

² Hungenaert, J., & Chardonens, A., "Combining Quantitative and Qualitative Methodologies to Analyse User Behaviour and Access Paths to Digital Content: Case Studies from Three Belgian Federal Scientific Institutions", in *Archives et bibliothèques de Belgique*, 87(1-4), II. Varia (2017), 325-361.

the evolutions that took place at the institutions over the past 30 years as they gradually adapted to a world that continually became more digital oriented. It also describes the main digital tools available to users in the institutions. The second part of the report presents the results of the project through 4 distinct topics: the audience profile, the access to the collections, the communication and the valorisation of the collections. The last part proposes as conclusions some lines of thought and concrete actions for the future.

We hope that reading this report will encourage other institutions to engage in a constructive dialogue with their audience, that sharing experience and feedback on the methodology of the MADDLAIN project will be useful for others responsible for managing digital collections or responsible for the development of the communication policy.

2. ICT and Digitization in the Institutions

The three institutions studied within the MADDLAIN project all have valuable collections that they wish to make available through digital innovations but unfortunately they all have the same problem, namely a lack of structural financing. Consequently, they have to rely on the digitisation programme of the Federal Science Policy Office (currently DIGIT03) and research projects that include a budget for the digitisation of the sources that form the subject of the research efforts. The digitisation departments of the institutions were created over the past decade and they are constantly working to professionalise the way in which they function.

The following sections will present an overview of the evolutions that took place at the institutions over the past 30 years as they gradually adapted to a world that continually became more digital oriented. Not all topics touched upon in the summaries below were studied extensively in the MADDLAIN project. The focus was placed on the three institutional websites, the main digital catalogues (Pallas for the CegeSoma; 'Search archives' for the State Archives; the OPAC for the Royal Library) and the institutions' efforts to valorise their collections online (The Belgian War Press for the CegeSoma; two virtual exhibitions for the State Archives; Belgica and BelgicaPress for the Royal Library).

2.1. CegeSoma

2.1.1. Websites

At present, the CegeSoma has three websites: an institutional website (www.cegesoma.be), a website concerning the Journal of Belgian History (www.journalbelgianhistory.be) and a website which offers access to the institution's collection of digitised newspapers (warpress.cegesoma.be).

The **institutional website www.cegesoma.be** was launched in the year 2000 and in 2005, descriptions concerning the institution's photo collection were placed online. This caused a spectacular rise in the website's visitor numbers as well as the institution's sale numbers for reproductions of photographs. In 2006, the visitor numbers augmented again considerably, this time due to the fact that inventories were made available online. The institution felt it needed a website that was more user-oriented and this new site was launched in 2007 and adapted by an external company called Vertige in 2009. In 2013, the CegeSoma launched its electronic newsletter (in Dutch, French and English), which contains links to articles on the institutional website. Around the year 2014 the institution decided that it should consider a new structure and content management system for the website. The current CegeSoma website should indeed be replaced in order to offer visitors the user

experience people have come to expect of modern websites. The reflexion for a new website was started in 2015 but as of today no new website has been developed due to several reasons including the integration of the CegeSoma into the State Archives in January 2016, which changed the context of the institution. At present, the reflection process concerning the website of the CegeSoma is still ongoing.

The CegeSoma preserves many different collections but its newspaper **collection** is especially rich. In 2006 the institution launched a project together with the Royal Library in order to digitise its clandestine and censored press dating from both World Wars. It was decided that the focus should lie on presenting users with a collections that was as complete as possible so other heritage institutions were asked to participate by making their own collections dating back to both wars available for digitisation. The actual digitisation process commenced in 2008 and the goal was to make use of OCR in order to enable full text searches for the users. In 2012, the digitised clandestine newspapers were made available through the **Belgian War Press website** (warpress.cegesoma.be) while the censored press was only made available in the reading room of the CegeSoma due to copyright issues. The censored press of the First World War was eventually placed online in 2014 but the censored press of the Second World War is still only available in the reading room.

The CegeSoma is an institution that not just preserves collections but also actively conducts research with those collections in its capacity as federal research institution. It publishes an international journal, which at present is called the **Journal of Belgian History**. In 2003, the creation of a website for the journal's predecessor³ was first suggested. The idea was that each new issue would be made available online to improve the visibility of the journal. A separate website was, however, at the time not created and the journal was added to the institutional website of the CegeSoma. Gradually all articles were made available online. In 2011, a fusion between the CegeSoma's journal and another concerning Belgian history took place and a separate website was presented in 2012 at the time of the launch of the new journal: www.journalbelgianhistory.be. A new version was launched in 2016 in order to make the website more user-friendly and to offer users more possibilities to search the journal's archives.

2.1.2. Digital Catalogue

The CegeSoma has a digital catalogue, called **Pallas**, which also serves as a digital library since it contains a small number of digitised archives and posters as well as almost the complete photo collection of the institution (more than 300.000 photos). The staff of the CegeSoma requested an automated system to make archives accessible as early as 1991 but Pallas was only taken into

³ Bijdragen tot de Eigentijdse Geschiedenis / Cahiers d'histoire du temps present.

operation in 1996. At the time, it contained only a module for the photo collection. In 1997, development accelerated and it became possible to add descriptions of archives and manuscripts while for the photo collection scanned photographs as well as descriptions could be added. The archives could also be represented in a hierarchical way. Pallas was made available to reading room users in 1998 by means of two computers and users could search for archives and photos. The CegeSoma had a VUBIS system for its library and in 1999 all the data it contained was transferred to Pallas so that all collections were being managed by the same system. In 2000, the IT department started the development of an OPAC so that it would become possible to consult Pallas online. A year later an important functionality was added as it became possible to conduct a search within multiple types of sources at once. In 2004, the possibility of browsing the archives by means of an archival tree structure was also added to the digital catalogue. The year 2005 saw the arrival of two other new functionalities: it became possible to search for photographs by means of the collection number assigned to a particular photo and a manuscripts module was added, which meant an additional type of source could be accessed through Pallas. From 2006 onwards, the staff members started attaching inventories created in Word to the corresponding descriptions in Pallas so that consulting them would become easier.

Pallas has a 'nineties' look and feel, and its development was completely halted in 2008. The digital catalogue therefore lacks modern functionalities and confuses users. After development was halted, one improvement was introduced, namely an online reservation system for the sources that are being preserved in the 'Belgrado' depot of the institution: users can within Pallas click on a link for the documents in question and are then presented with a reservation form. The original idea was that this option would also be introduced for the documents that are being preserved in the main depot of the CegeSoma but as of 2017 there are no signs of the reservation system being expanded in the near future. At present, all requests for sources located at the main CegeSoma located are still made on paper. The separation between the main depot and the 'Belgrado' depot is artificial from a user standpoint as the 'Belgrado' depot has no reading room and users have to consult documents from both depots in the reading room of the main depot. Nowadays, users of libraries and archives expect an online reservation system so introducing a system for the sources of the main depot would improve the user experience in two ways: users can request all sources online and the confusion caused by having two different systems in place is removed. Ideally, the catalogue should be replaced completely and replaced by a new system that can respond to the expectations of current users.

2.1.3. Digital Collections

The CegeSoma has various collections and wishes to make as many as possible available online. The institution's digitisation programme commenced in the 1990s and in the year 2006 the institution created a separate scan lab in order to facilitate an acceleration of its digitisation efforts. At present,

the scan lab consists of 5 professional scanners. The CegeSoma has over the years digitised many sources in the context of larger projects, especially with the Royal Library and the State Archives.

The first collection the CegeSoma selected for digitisation was its **photo collection**. The scanning began in 1997 but the managed pace was slower than anticipated and the institution started considering solutions such as outsourcing and partnerships with other institutions. In 1998 and 2000 the CegeSoma could count on the support of the National Lottery, which led to a much bigger volume of photographs being digitised that year. In 1999, the institution had some bad experiences with external digitisation firms and it was decided that all photographs would be scanned internally. From 2002 onwards, the CegeSoma started expanding its collection by digitising the photo collections of private citizens who did not wish to transfer their collection to the institution but who were willing to let the institution digitise their collections as long as all photographs were returned to them once the digitisation process was completed. By 2009, all photographs that had been catalogued were available in digital format. Unfortunately, however, not all photographs were accompanied by descriptions and the adding of descriptions is still ongoing today.

A second collection considered for digitisation was the **poster collection**. The CegeSoma received money from the National Lottery to improve the condition of the posters, which is a prerequisite for digitisation. However, by 2002 the accessibility of the poster collection had not yet been improved: no posters have been digitised and the collection could even be found in the digital catalogue Pallas due to the lack of a module specifically developed for posters. In 2004, some headway was made since the posters that were available on slides were scanned. The CegeSoma intended to create photographs of all new posters internally but in 2007 the institution start preparing the outsourcing of the digitisation process since an internal approach did not seem possible due to practical reasons and the required quality of the created images. In 2009, a portion of the collection was entered into Pallas even though a specific module for the posters had still not been created. The descriptions were adapted so that they could be entered into the photo module. To this day, users have to consult the Photo Library in Pallas to search for posters. This procedure is explained on the CegeSoma website but visitors who access Pallas without having knowledge about the different types of collections offered by the institution are given no clue within the catalogue that the CegeSoma has a substantial poster collection.

Another of the CegeSoma's collections suffers from the same issue: the **pamphlet collection**. In 2010, there was a lot of interest for this collection due to exhibition 'Gekleurd verleden' and the CegeSoma decided to digitise the complete collection. An additional reason for this decision was the fact that the collection's accessibility was very limited, which meant users had to request multiple reference numbers in order to locate the document that interested them. By 2012, all pamphlets had been digitised and made available online. The collection was added to the Photo Library in Pallas

because additional information about the sources could then be included. However, this poses the same problem as with the poster collection: only users who read about the collection on the institutional website will know that they have to enter the search word ‘vlogschriften (in Dutch) / ‘tracts’ (in French)’ and select ‘Photo Library’ in order to access the collection. Within Pallas no indication of the collection’s existence is given.

The CegeSoma also conserves a **collection of interviews** conducted by its own researchers, journalists and people involved in an academic project concerning the occupation of Belgium. Because some of the audio tapes were in bad condition, the institution started with the digitisation of the collection in 2004 by transferring interviews from tapes to CDs. With the support of the National Lottery, the institution continued its digitisation efforts over the following years and by 2008 the complete collection of the interviews conducted by the CegeSoma’s own researchers had been transferred to digital carriers. The digitisation of the other interviews continues to this day and small audio files can be digitised for users upon request. In 2011, the digitisation of interview transcripts was started and by 2013 about 75% had been digitised.

The situation of the metadata concerning the interviews, however, is complex: Pallas does not have a separate module for interviews although staff members responsible for the collection have been requesting its development since 2002. Before 2011, the metadata associated with the interviews could only be found in an Excel list on the CegeSoma website. In 2011, however, the institution started introducing the metadata into Pallas even though there was still no dedicated module available. This entails that it is not possible to select ‘Interviews’ as a document type and that users who are not familiar with the collection of the CegeSoma might have no idea they can have access to interviews since in the catalogue itself there is no indication given that the CegeSoma conserves interviews.

Finally, the institution’s most substantial collection consists of **paper archives** but very little of them have been digitised. The archives concerning von Falkenhausen and Canaris form a notable exception. The CegeSoma started the preparatory phase in 2006 and by 2012 the digitisation process of these two sources was finalised and all files were made available through the computers in the institution’s reading room. The communication about the existence of these digital files, however, is almost non-existent. In Pallas no mention is made of the digitisation project in the descriptions of archives related to von Falkenhausen or Canaris. On the website an undated article makes mention of the CegeSoma’s intention of digitising the archives concerning von Falkenhausen or Canaris, but no other articles are found when one uses the website’s search engine to search for either ‘von Falkenhausen’ or ‘Canaris’. A brief mention of the archives can be found, however, if one clicks on ‘Digitised documents’ and then selects ‘Archives and manuscripts’.

The CegeSoma is constantly working on enlarging the number of sources that can be accessed in digital format and continues to carry out digitisation in house as well as in collaboration with external companies.

2.2. State Archives

At present, the State Archives have an institutional website (www.arch.be) and a website through which users can access multiple search engines (www.search.arch.be), namely ‘Search archives’, ‘Search archives producers’, ‘Search persons’ and ‘Search library’. Additionally, the State Archives have over the years launched multiple virtual exhibitions: ‘Archives and democracy’, ‘Archives I presume? Traces of a colonial past in the State Archives’, ‘GOAAAL! One century of Belgian football’ and ‘The Great War in Wallonia’. In the following sections a number of topics related to the ICT and digitisation efforts of the institution will be discussed.

2.2.1. Websites

The State Archives ventured on the internet at an early stage as they launched the website **www.arch.be** in 1998.⁴ In 2004 an analysis of the website was carried out in order to determine possible enhancements and in 2005 the State Archives started considering how it could improve its online services by making metadata concerning its archives available through databases. These two concerns were addressed in 2007 launching a new version of the main website and the institution’s multiple search engines that are still offered today (on search.arch.be). In the same year the State Archives also started sending out electronic newsletters to interested users. From 2011 onwards, all new publications of the State Archives were made available through the institutional website. The current website was developed in 2014.

The State Archives preserve rich collections and wish to valorise these on the internet. In the period 2009-2010 the institution launched two virtual exhibitions, one concerning archives and democracy (**www.archief-democratie.be**, **www.archives-democratie.be**, **www.archive-demokratie.be**) and another about the colonial history of Belgium (**www.expocongo.be**). In 2011, a virtual exposition concerning a century of Belgian football (**goaaal.arch.be**) was launched. In 2014, the State Archives created a virtual exhibition concerning the World War I archives preserved in the Walloon depots (**14-18-wallonia.arch.be**).

⁴ 1998 is the first year for which an archived version of www.arch.be can be found in the Wayback Machine of the Internet Archive.

2.2.2. Digital Catalogues

One of the first steps of the State Archives into the digital world was the creation of the **archival management system Archeion**, which was used at the National Archives of Belgium from 1994 onwards. The system was subsequently introduced in the State Archives' depots located in Flanders in 2004, and by 2006 all depots across the country were using it and almost all archives were listed in the system.

As mentioned in the previous section, the State Archives launched multiple search engines in the year 2007. These search engines are: 'Search archives', 'Search archives producers', 'Search persons' and 'Search library'. '**Search archives**' provides access to information about the archives preserved by the State Archives as well as to digitised documents, in particular genealogical sources. '**Search archives producers**' contains the names of people and organisations who were responsible for the creation of archives. '**Search persons**' gives access to a database containing more than 28 million names that appear in genealogical sources. '**Search library**' contains the reference works that are available at the various depots of the State Archives.

In 2016, the State Archives tested a new form of digital mediation with regard to its Search Engines: short instruction movies in Dutch and French. At the writing of this report, the video tutorials had been online for eight months and had a combined total of almost 19.000 views. Also in 2016, the institution made activity reports of the National Aid and Food Commission (World War I) available online and a portion of the 19th century photo collection became accessible in digital format in the reading rooms. Finally, in 2017 the State Archives made records concerning war damages of enterprises and association (World War II) available online.

2.2.3. Digital Collections

The State Archives took their first steps in the world of digitisation with small projects from the year 2000 onwards. In 2005, the State Archives bought digitisation equipment in order to be able to carry out digitisation projects internally but certain projects continued to be outsourced. The same year the institution joined the DIGIT project of the Federal Science Policy Office, which aimed to make digitised sources available online. In this period the State Archives also started to reflect upon the introduction of '**digital reading rooms**' that would give users access to all digital sources in the institution's physical reading rooms spread around the country. The State Archives had hoped to have their 'digital reading rooms' ready by 2008 but the launch had to be delayed to 2009. In order to be able to carry out quality digitisation within the institution, the State Archives took into operation a new scan lab (which included an A0 scanner and a microfilm scanner) the same year. In 2010, the State Archives purchased a document scanner intended for the digitisation of cards and loose leaf

documents. The electronic depot Digistore was also put into operation, which meant the institution's storage capacity increased to 200 TB.

Over the past decade, the State Archives had four priorities with regard to digitisation: Parish Registers and Registry of Births, Deaths and Marriages; Maps and Plans; Statistical Sources from the 19th Century; Collection of Seal Castings. In 2002, the State Archives set up their first ambitious digitisation project: the digitisation of the **Parish Registers** of all the municipalities of the province of Antwerp. The same year a similar project concerning the province of East Flanders was launched together with the Genealogical Society of Utah (GSU), which carried out the digitisation of the sources on their premises in Beveren. From 2004 onwards, the GSU and the State Archives decided to stop creating microfilms of the Parish Registers and to switch completely to digitalisation. In 2007, the institution decided to give full priority to genealogical sources with regard to its digitisation efforts. Linked to this decision was the launch of 'Demogen', an application users can download to their personal computer so they can enter data of genealogical sources into the database 'Search persons'. At present, the database contains more than 28 million names. Additionally, users can consult more than 23 million pages concerning Parish Registers and the Registry of Births, Deaths and Marriages.

In 2008, the State Archives commenced work on two other digitisation priorities: the Seal Castings Collection and Maps and Plans. The **seal castings** were digitised in the institution's own scan lab and a first batch of 7000 items was made available online in 2011. By 2015, the complete collection of almost 38.000 seal castings could be accessed online. A different approach was taken with the **maps and plans** as these were digitised with the support of the National Lottery as well as the DIGIT project of the Federal Science Policy Office. The digitisation was carried out within the context of the Cartesius project, which consisted of a partnership between the State Archives, the National Geographic Institute, the Museum for Central Africa and the Royal Library. By 2013, more than 20.000 digitised maps and plans were made available for consultation in all reading rooms of the State Archives. In 2015, the website associated with the Cartesius Project (www.cartesius.be) was launched so that users can now browse through maps and plans of multiple institutions at once.

The fourth digitisation priority of the State Archives seems to have changed throughout the years as in 2016 the institution made **statistical sources** of the 'Mouvement de la Population et de l'Etat Civil' online available not just for the 19th century but for the years from 1841 to 1976. Besides the four mentioned priorities, the State Archives also made progress with regard to digitisation in other ways. For example, the institution started in 2004 with the retro conversion of inventories as well as access points, and initiatives were taken to create digital versions of handwritten access points. Besides the institution wide focus on the subject of genealogy, from 2007 onwards individual depots also started

small digitisation projects concerning frequently consulted sources as well as fragile and valuable documents. In the period 2009-2010, the State Archives joined the APEnet-project that unites European national archives and aims to develop a European portal so users can access metadata and digital collections belonging to multiple institutions from one central access point.

In 2010, two digitisation projects were finalised, i.e. circulars of the Ministry of Justice and files concerning Jewish foreigners who were deported to Germany during World War II. In 2011, additional digitisation projects were concluded: the individual files of foreigners from 1835 to 1943 and the files of the International Tracing Service became digitally available in the reading rooms of the State Archives, although the latter only upon demand. The Minutes of the Cabinet Meetings 1918-1979 were made available through the website. In 2014, Parish Reports from 1914-1918 and the St. Vither Zeitung were published online while a portion of the Diplomatic Archives of 1914-1944 were digitally made available in the reading rooms.

2.3. Royal Library⁵

2.3.1. Website

The institutional website of the Royal Library www.kbr.be was launched in 1995. A new website was launched in 2004 and the most recent version of the websites dates from 2016. Unfortunately, this last update took place during the MADDLAIN. Financial resources are not always available at the right time and sometimes institutions have to take advantages of certain opportunities even though it would actually be more beneficial to be able to wait until the time is right, i.e. in this case until the report of the MADDLAIN project is finished so that all results can be taken into account.

In order to broaden its online presence, the Royal Library launched an electronic newsletter in 2007. Originally, the newsletter was sent out once every three months but from 2011-2012 onwards the newsletter was distributed monthly. In the same period, the institution also became active on Facebook and Twitter.

2.3.2. Digital Catalogue

The Royal Library's first **Library Management System** was a NEWWAVE database but from 1992 onwards, a VUBIS system was implemented in order to make performing searches easier and faster, and the results more complete. The first iteration of the **OPAC** was conceived in 1988 and the system became available to the visitors of the general reading room in 1990. From 1994 onwards, users were

⁵ The annual reports of the years 1999, 2000 and 2001 were unavailable at the time of the MADDLAIN project so information for those years is lacking.

also offered the option of consulting the catalogues of 'VUBIS-Antwerpen' and the 'Vrije Universiteit Brussel' as well as the database of the Library of Congress. A year later the OPAC was updated to improve the user experience: it became possible to filter on the basis of publication year and geographical location, and various indexes were created in order to aid users in their search process. With the launch of the website www.kbr.be in 1995, the OPAC also came available online.

The Library Management System was reworked in 1995 in order to improve the search procedure for cataloguers as well as users. However, in 1996 a member of staff noted in the annual report that the way in which key words and search options per subject were presented in the OPAC was too complicated and frustrated the users. As early as 2002, staff members of the Royal Library held meetings concerning the necessary harmonisation of the cataloguing rules used at the institution, but during the interviews conducted during the MADDLAIN project a staff member involved with the management of the various databases expressed dismay at the fact that there was no central policy for cataloguing sources and that all departments used their own rules.

Over the years, the metadata creation at the Royal Library seems to have suffered from a lack of personnel assigned to the task. In the annual report of 2004, for example, it was indicated that the external firm responsible for the digitisation of paper records provided the Royal Library with lists of records that need to be improved. The report, however, points out that due to a lack of personnel only a portion of the records could be corrected. In the same report In 2005, it was decided that the cataloguers of the Belgian Bibliography would temporarily enter less metadata per source in the digital system (e.g. subjects are no longer listed) because the department had lost multiple staff members.

Interviews conducting within the context of the MADDLAIN project revealed that there used to be a retro conversion team at the Royal Library but that its members were gradually transferred to the digitisation department. A sampling of the paper records in the general reading room revealed that around 20% of the records could not be found in the main digital catalogue. While digitisation has become more and more important over the last decade and requires a lot of personnel, good and digitally available metadata is also crucial for the functioning of a library. Not only the user experience suffers when not all collection items can be found in the digital catalogue but since metadata is also indispensable for digitisation projects, the Royal Library should consider investing in the basis of any quality library: the metadata concerning the collection.

The Library Management System itself is also an essential element for any modern library. In 2003, staff members of the Royal Library started reflecting upon the creation of a system and they started

drafting the required specifications of a new system. The document was finished in 2006⁶ and in 2007 the VIRTUA system of a firm called Ineo was chosen. The aim of the Royal Library was to have the new system operational in 2009. In the annual reports of the years 2009 and 2010, however, a short section discusses the importance of having a quality Library Management System but no information is provided concerning the implementation of a new system. Furthermore, the reports from 2011 to 2014 do not mention a Library Management System at all. It appears the Royal Library ran into trouble with the creation of a new system, but what exactly happened remains unclear. In 2015, the library was awarded financial resources for the creation of a new library management system in the context of the ‘additional investments for the Federal Scientific Institutions’ of the Belgian Science Policy Office. The specifications for the new system were finalised in 2016 and at the writing of this report an external firm had been selected to develop the new Library Management System.

An important functionality of modern digital catalogues is the possibility of requesting items online. In 2003 the library studied this topic and there was a system that could possibly be tested in 2004. In 2006, this functionality was implemented in the Common Catalogue of the Federal Libraries. The current digital catalogue of the Royal Library also has this option but it was only introduced in 2015⁷. However, contrary to, for example, the national libraries of the Netherlands and France, it is not possible to request sources online and consult them the same day. Even a request for the next day is not possible: sources only become available for consultation two days after the request was made. From a user standpoint, it is difficult to understand why it is possible to enter the Royal Library and consult sources the same day if one makes a request for consultation by filling out a paper form while someone who makes a digital request (which should be easier to process since illegible handwriting and wrong reference numbers are not an issue) has to wait more than a day to be allowed to consult sources.

The Royal Library became a partner of UniCat in 2002, which is a collective catalogue of several Belgian Libraries. The aim of the catalogue is to let people search multiple library collections at once, but the MADDLAIN User Survey revealed that some users of the Royal Library use the catalogue in order to avoid having to use the Royal Library’s own digital catalogue.

⁶ In the annual report of 2005, it is mentioned that the Royal Library, the Royal Belgian Institute of Natural Sciences and the Royal Museum for Central Africa had decided to work together for the creation of a collective library management system. The report added that a staff member of each of the other two institutions joined the Royal Library working group concerning the new system. In later annual reports, however, this collaboration is not mentioned so it is unclear when and why the institutions decided to go their own way.

⁷ This statement is based on two facts: 1) in the Summer of 2015 a staff member responsible for database management at the Royal Library explained that users could only request sources on paper in the reading rooms and not through the digital catalogue. 2) When the MADDLAIN User survey was being prepared at the end of 2015/the beginning of 2016, it was possible to request sources online by means of the digital catalogue.

From 2005 onwards, publishers were offered the possibility of depositing their digital publications voluntarily in the electronic depot of the Royal Library. In 2008, a new law required publishers to deposit electronic publication that were diffused on material carriers (floppy disks, CDs, CD-ROMs, DVDs ...) but unfortunately no provision was made for electronic publications that are only distributed via the internet. The Royal Library sees an expansion of the law as a top priority since nowadays many publications exist solely in digital format and are never transferred to material carriers.

During the late eighties the Royal Library started a database for journal titles and from the mid-nineties also the titles of the articles includes in those journals could be found in a database. From the year 2005, electronic journals became accessible inside the Royal Library. Other databases were gradually developed within the institution and by 2004 there were also databases for prints, coins, manuscripts, letters and photographs.

2.3.3. Digital Collections

Over the years, various digitisation projects were launched at the Royal Library and as early as 1994, the Royal Library saw the creation of a digital library as one of its missions. However, the library only started reflecting seriously on the actual creation of a digital library in 2004. The development of **Belgica** platform commenced in 2008. It was decided that Belgica would initially only contain digitised materials that without a doubt form part of the public domain, which entails they can be made accessible online. Belgica was officially launched at the beginning of 2009.

The Royal Library took its first steps in the world of digitisation long before it had its own digital library. In 2002, the Royal Library started the digitisation process of **historical atlases**. 2006 was an important year for the department of Maps and Plans as it managed to reach an agreement with the National Geographic Institute for the digitisation of the Ferraris map and with the KU Leuven for the digitisation of Popp's cadastral plans. The Royal Library was involved in the Cartesius project from 2008 until 2015 in order to digitise valuable maps and plans from its collection. The Cartesius website was launched in 2015 and was a collaboration with the State Archives, the National Geographic Institute and the Museum for Central Africa.

By the year 2003, the Rare Books department had digitised its complete collection of **incunables** and the Prints department had digitised its collection of **19th century photographs**. The same year, the Maps and Plans department developed a digitisation project concerning its collection of **Ortelius maps**. In 2005, the digitisation of **medals** from the regions that form present day Belgian from 1789-1830 was started. One of the most important collections of the Royal Library is formed by its

newspapers. The library had been microfilming its newspaper collection since 1990 and switched to digitisation in 2006. From that year onwards, the institution worked together with the CegeSoma on a digitisation project concerning its newspapers. The institution digitised within the context of the project 40 newspaper titles that appeared between 1830 and 1950. The result of the institution's efforts can be consulted through **BelgicaPress**.

The Royal Library is also involved in Europeana, the EU digital platform for cultural heritage that was launched in 2008. The Royal Library contributed digital documents to the platform from the beginning. In the period 2011-2014, the institution was also involved in the 'Europeana Collections 1914-1918', which brings together digital material concerning the First War World from the collections of ten partners.

3. The general public

3.1. Audience

3.1.1. Who are the Institutions' Visitors?

Geographical location

The institutions' audience is predominantly Belgian. At the Royal Library the reading room public consists between 70 and 75% of Belgians and at the CegeSoma and the State Archives Belgians make up almost 90% of the public. The institutions' online audience is similar for the three institutions: around 75% of the audience of the institutional websites and the digital catalogues lives in Belgium. The second most frequently identified country of origin is France, followed by the Netherlands. Especially at the State Archives there is a large portion of the audience that originates from France and this group consists predominately of genealogists, who take advantage of the institution's digital efforts concerning genealogical sources. The institutions also have digital libraries (Royal Library: 'Belgica', CegeSoma: 'WarPress') as well as valorisation projects (State Archives: 'Goaaal!' and 'ExpoCongo', CegeSoma: 'Journal of Belgian History') and for these the situation is slightly different as they attract more foreigners. For 'Belgica' and 'Goaaal!' around two out of three visitors are located in Belgium, while for 'WarPress' this is only the case for slightly more than half of the visitors and for 'ExpoCongo' for only one in four. The French are for all of them the second largest group, but their share varies from less than one in ten for 'Belgica' and 'Goaaal!' to around one in four for 'WarPress' and 'ExpoCongo'.

The aforementioned data clearly indicates that making collections available online can greatly expand an institutions' reach. Similarly, Belgian users access digital collections made available by foreign institutions and get influenced by the possibilities those institutions offer with regard to making use of digital sources. In the User Survey participants sometimes referred to the efforts of Dutch or French institutions to explain which types of functionalities they are looking for in an online system. For example, Delpher of the National Library of the Netherlands and Gallica of the National Library of France were mentioned as systems with which the participants had positive experiences.

The website of the Journal of Belgian History differs from the other valorisation websites in that the distribution of its audience more closely resembles that of the institutional websites: more than 75% of the visitors originate in Belgium. This indicates that while the journal aims to be international in scope by accepting articles in Dutch, French, German and English, its public stays largely confined to its home country, most likely because mostly Belgian historians study the history of Belgium.

Publishing in English might help attract more foreigners but if the subject matter does not appeal to non-Belgians, the language used is of lesser importance.

With regard to the distribution amongst the different parts of Belgium, it has to be pointed out that the distribution differs significantly from the institutional websites studied: almost 70% of the Belgian visitors are located in Flanders. This is remarkable since the institutional websites attract more French speakers than Dutch speakers. If the editors of the Journal of Belgian History would like to attract more French speaking users, they might consider investigating the following topics: the affiliation of the authors included in journal (i.e. are they mostly associated with Flemish institutions and universities?), where the communication efforts are directed (i.e. is a Flemish audience targeted most of the time?), which topics are covered by the journal (i.e. do these topics appeal more to Flemish researchers?) and whether the website contains the same information in both Dutch and French (i.e. might French speakers find the presented information confusing?).

Age, educational level and reasons for consulting sources

The institutions do not have solid statistics concerning the educational level of their visitors or their reasons for consulting sources (personal or professional). This information can, however, be valuable since the institutions are generally regarded as being academically oriented. If a large part of the public uses the collections for personal reasons or has not completed higher education, the institutions should take this into account when launching new websites, digital catalogues or valorisation projects. The participants of the User Survey predominantly used the collections for personal reasons: almost 60% of the CegeSoma participants, 70% of the Royal Library participants and 80% of the State Archives participants indicated that they make use of the sources for personal reasons. With regard to the use for professional reasons there is a large difference between the CegeSoma and the Royal Library on the one hand and the State Archives on the other. Of the CegeSoma and Royal Library users between four and five out of ten indicated that they consult sources for professional reasons. At the State Archives, however, only one out four claims the same. The reason for this is that many genealogists participated in the survey and this group is a key public of the State Archives. Since random sampling was not used in the selection of the participants of the User Survey, it cannot be concluded that indeed only 25% of the users of the State Archives consult the collections for professional reasons since it is possible that a very large part of the genealogical subgroup participated and only a fraction of, for example, the academic world. However, what cannot be denied is that the State Archives attract many genealogists as well as users who wish to consult the collections for personal reasons.

The age of the participants to the User Survey can also give the institutions some clues as to how to proceed in their digital endeavours. An interesting observation is that for the State Archives a

'staircase' is visible in the distribution of the users per age group: the youngest age group 18-25⁸ has the least amount of participants (7,5%) and each consecutive group has more members, with the group '65 or older' having the highest number of participants (28%). A similar distribution cannot be observed in the data for the CegeSoma and the Royal Library. The CegeSoma participants are quite evenly distributed across the different age groups as there is only a 3% difference between the least numerous age group (18-25) and the age group with the most participants (45-54). At the Royal Library the participants are distributed in a similar way and the difference between the age groups is even slightly less than for the CegeSoma, with the exception of the group 18-25. This group is 5% smaller than the second smallest group (55-64) and 8% smaller than the largest group (65 or older).

The participants were subdivided into two groups (professionals and users who consult collections for personal reasons) for the CegeSoma and the Royal Library. Since the State Archives attract many genealogists, they were separated from the 'personal reasons' group and their answers were treated as a third group. For the State Archives the age distribution of the groups differs drastically from the distribution for the whole population. For the genealogists, the 'staircase' distribution is retained, but the differences between the age groups have become much more pronounced. 65% of the participants who claimed to be genealogists are over the age of 55. The two youngest age groups together (18-25 and 26-34) now only make up 6% of the total. In the professional group, more than 70% of the participants are between 26 and 54 years old. In the group of the users who consult the collections for personal reasons the two largest groups are the people older than 65 and those in the age group 18-25. These results correspond to what one would expect to find: the youngest age group uses the State Archives mostly for personal reasons (85% for their degree course) while the older users are mostly interested in genealogical sources and the groups in between use the State Archives for professional reasons.

For the CegeSoma and the Royal Library the difference between professional users and those who consult the collections for personal reasons is very similar to the difference observed for the State Archives. It is therefore more interesting to discuss the differences between the three institutions with regard to the two groups. One observation is that for the CegeSoma and the State Archives the age groups 18-25 presents around 20% for the users who consult for personal reasons, while for the Royal Library this group only accounts for 13%. This difference might be due to the fact that the CegeSoma and the State Archives have a clear student base (i.e. history students) who are given assignments they have to complete with archives of the institutions. The Royal Library, on the other hand, also attracts many students but according to the staff members of the library they are only interested in the institution because of its quiet reading room, which serves well as a study place. The students who

⁸ The option 'Younger than 18' was also available in the survey but since only 6 participants (i.e. 0,3 % of the participants) chose this option, it is disregarded in the discussion of the data.

study in the general reading room are generally not interested in the collections the Royal Library offers. Some staff members see this as a problem and would like the library to take action in order to convince the students to consult the collections. One such an example is the small exhibitions that are organised in the general reading room. Others members of staff feel it is positive that those students buy a library card and fill reading rooms that would otherwise be empty, but that trying to interest them in the collections is a futile endeavour. It was even suggested that the library should try to generate more revenue by catering to the students' needs, e.g. by bringing the cafeteria closer to them. With regard to the professional group, it should be noted that for all three the institutions around half of the participants are between 26 and 44 years old. There are small differences between the institutions with regard to the exact distribution across the age groups, but none that warrant discussion or additional research.

Finally, the education level of the users of the institutions can help the institutions assess how much research experience their users have, which can be useful when deciding which types of digital mediation to create or how much information to provide with regard to a new digital catalogue. In general, a Master's degree is the most frequent highest obtained qualification for the users of the three institutions. It seems, however, that the users of the State Archives are slightly less highly educated than those of the CegeSoma and the Royal Library. For the latter two institutions, more than 55% of the users have at least a Master's degree, while for the State Archives this only holds true for 45%. The difference can be attributed to the fact that in the genealogists group only a little more than 30% of the participants hold a Master's degree or higher. Additionally, in this group, another 30% has only completed secondary education. When developing tools or services aimed at genealogists, the State Archives should keep in mind that this user group is less highly educated than the rest of the public. This entails that they have fewer research skills since they did not, for example, have to carry out independent research for course assignments or learn how to distil the essential pieces of information out of a large amount of data, as students have to do when they are preparing their thesis. Additionally, they will be less familiar with different digital catalogue systems of archives and libraries. It is entirely possible that they are only accustomed to e-commerce systems and that the systems offered by the State Archives are the first heritage ones they attempt to use. These users might therefore need more guidance and additional explanations with regard to terminology than the average user of the three institutions.

3.1.2. User Habits

All three institutions have an institutional website and the visitor statistics can reveal interesting insights. The CegeSoma is the smallest website and this is also visible in the statistics. On a monthly basis around 3.000 users access the website www.cegesoma.be and together they account for between 4.000 and 5.000 visits. During the analysis period, the website of the State Archives (www.arch.be)

had each month between 16.000 and 21.000 unique visitors while the website of the Royal Library (www.kbr.be) attracted between 13.000 and 19.000 unique visitors. The difference between the State Archives and the Royal Library with regard to the number of different users who visit the website therefore seems unremarkable. However, the situation changes drastically when the number of visits is analysed. The website of the State Archives was each month visited between 28.000 and 39.000 times while the website of the Royal Library only attracted between 17.000 and 26.000 visits. Since during its best month the Royal Library website was visited less times than the State Archives website during its worse month, this indicates that the State Archives have a much more loyal public that sees more reasons to return to the institutional website than the users of the website of the Royal Library. A reason for this difference might be that the State Archives offer news items on their homepage, which was not the case for the website of the Royal Library at the time the web statistics were collected. Since then a new institutional website has been launched, which also offers news items. It could be interesting for the Royal Library to investigate whether or not the change in website has caused users to return more often. If this is not the case, the Royal Library might want to

About 1 in 10 users arrive at the websites by clicking a link but the majority access the website either through direct entry⁹ or by means of a search engine. For the Royal Library the users are more or less evenly split between the two options but the majority of the CegeSoma users arrive through search engines while the majority of the State Archives visitors arrive by direct entry. This hints at a more loyal public for the State Archives but might also indicate that there is room for improvement with regard to the Search Engine Optimisation of the institution's website.

The website and catalogues of the institutions are most heavily consulted during office hours. They all receive around 65% to 70% of their traffic between 9 am and 6 pm, with one exception: Search. Office hours only account for 56% of traffic on Search. A little over a third of the traffic on Search is produced between 6 pm and midnight. In the user survey various participants mentioned that they felt the server was very slow and that this hindered them in their research. Some even indicated that they make use of the system at night because they feel it is too slow during the day. It is hard to know if most users who are active on Search during the evening hours do so because that is their preferred time of day to make use of the system or if they are looking for a time of day when

The results of the User survey suggest that the State Archives have the most loyal public of the three institutions since almost half of the respondents for the State Archives indicate that they use the

⁹ 'Direct entry' entails one of the following situations: the user has added the website to the browser's bookmarks, the user has set the website as the browser's homepage, the user has typed the website's address (or the beginning of the address, which was then automatically completed by the browser) in the address bar of the browser.

institution's sources (digital and/or physical) on a weekly basis. For the Royal Library and the CegeSoma only approximately 20% of the respondents made the same claim. However, the difference can entirely be attributed to a specific subsection of the State Archives' audience, namely genealogists. Of this group, 70% consults sources on a weekly basis. In contrast, only 20% of the respondents who make use of the State Archives for reasons unrelated to genealogy consult sources on a weekly basis, which brings the State Archives in line with the other two institutions.

3.2. Findings

3.2.1. Access to the Collections

Access to the digital catalogues and digital collections of the institutions

The introduction of digital catalogues did not lead to the destruction of paper catalogues and paper inventories in the institutions studied within the MADDLAIN project. While most paper catalogues and inventories are no longer being updated, visitors can still consult them to locate information about sources that were processed before the advent of the digital catalogues. The goal of the institutions is to transfer all metadata contained in paper search instruments to their digital catalogues but large parts of the collections of the State Archives and the Royal Library have not yet been introduced into the digital catalogues¹⁰. Users who wish to have a complete overview of the collections of these two institutions therefore need to consult the available metadata in both digital and paper format. However, neither of the institutions communicates this fact to the users of the digital catalogues.

Users might employ five different search strategies to locate descriptions and reference numbers of physical sources: consulting digital catalogues only, examining exclusively paper inventories/catalogues, making use of digital catalogues as their main source and consulting paper search instruments when necessary, consulting paper inventories/categories as their primary source and digital catalogues when needed, employing digital and paper resources as equally important search instruments. The user survey was used to discover which strategy is chosen by the institutions' users. The results for the State Archives differ considerably from those for the CegeSoma and the Royal Library.

¹⁰ Interviews with staff members revealed that the CegeSoma is already very advanced in its endeavors to make all metadata available in digital format. In 2015 there was only one sub collection (the sound archives) for which not all metadata present in paper inventories could be located in the digital catalogue Pallas; 10% still needed to be processed. In contrast, for multiple depots of the State Archives more than 50% of the collection could not be found in the digital catalogue 'Search archives' and at the Royal Library multiple departments still needed to add more than 20% of their collections to the main digital catalogue.

Almost all participants who responded for the CegeSoma and the Royal Library make use of the institution's digital catalogue and almost 40% do so exclusively while 35% to 40% use both paper and digital search instruments but regard the digital catalogue as their main resource. Respondents of the State Archives attach much more importance to the paper inventories as only one in five consults the digital catalogues exclusively. A little over 10% regard the paper inventories as their main resources and the digital catalogue as an additional resource. Almost 5% even declared that they only make use of paper search instruments to locate information about the collection. The MADDLAIN User Survey was only available in digital format so this indicates that a portion of the State Archives' public is computer literate but does not make use of the digital catalogue. Participants who selected this option were asked to clarify why they do not consult the digital catalogue and the general sentiment of the answers is that the catalogue is too complicated and does not work properly.

Users who did make use of the digital catalogues of the institutions were given the opportunity to explain what they liked or disliked about them. The three catalogues were often described as not being user-friendly due to their unclear lay-out, their complicated structure and the fact that they are difficult to use. Users of the State Archives and the Royal Library also indicated that they had the feeling not all sources preserved by the institutions could be found in the digital catalogues. The users of the three institutions were critical of the quality of the metadata present in the descriptions in the digital catalogues and claimed that they often came across incomplete or inaccurate descriptions. Users of the State Archives and the CegeSoma also lamented the fact that it is not possible to reserve (all¹¹) sources online before heading to a reading room to consult physical sources. Many other issues were only addressed by one or two users but those comments should nonetheless be taken into account when the institutions develop their new digital cataloguing systems, which are intended to be taken into operation within the next few years.¹² If the institutions wish to develop catalogues that cater to the users' needs, it is advisable that they involve the users in the process from the beginning, for example through focus groups or usability testing sessions.

The main function of these catalogues is informing users of the physical sources that are being preserved by the institutions. However, the institutions have over the past few years been confronted with dwindling visitor numbers for their reading rooms and a rising demand for digital access to sources. The tension between paper and digital is therefore an important topic. Approximately half of the respondents of the user survey indicated that they consult the physical sources of the institutions. As mentioned before, genealogists are the State Archives' most loyal public but their loyalty seems to

¹¹ It is possible to reserve a portion of the CegeSoma collection online, namely the part of the collection that is preserved in the Belgrado depot instead of at the main location of the CegeSoma.

¹² Since the CegeSoma forms part of the State Archives since January 2016, the metadata concerning both institutions' collections will be integrated into a single system.

concern the online sources and not the reading room as only four out of ten consult physical sources. In contrast, a little more than six out of ten people who use the sources for personal reasons consult physical sources and in the group of professional users almost seven out of ten do so as well. A similar discrepancy is visible at the Royal Library where less than one in two of those who access sources for personal reasons consult physical documents while in the professional subgroup almost seven out of ten do so. At the CegeSoma the difference is negligible: a little more than four out of ten for the personal reasons group and a little less than five out of ten for the professionals.

All respondents who indicated they did not consult physical sources were asked to clarify why they did not visit the institutions. The responses for the three institutions were fairly similar, with the top answer being 'I feel the institution is located too far away', which was selected by around half the CegeSoma and State Archives respondents and a little less than 60% of the Royal Library respondents. It is unexpected that the result for the State Archives is similar to that of the CegeSoma and the Royal Library since those two institutions are located exclusively in Brussels while the State Archives have at least one depot in all Belgian provinces. The State Archives in Brussels mostly house governmental sources while the depots in the provinces contain sources concerning local history and genealogical records. Consequently, professionals will mostly make use of the sources located in Brussels while genealogists and people who use sources for personal reasons should usually be able to find the sources they are looking for in a depot in their own province. Contrary to what one would expect, the percentage of professionals who answered 'I feel the institution is located too far away' was lower than that of genealogists and people who consult sources for personal reasons.

If we break down the numbers per province, the province of Hainaut has the worst result, with a little less than 55% of the respondents indicating that they feel the reading rooms of the State Archives are located too far away. This is surprising since there are two depots in this province, limiting the distance users have to travel to arrive at a depot. The best scoring province is Luxembourg with only 20% of respondents indicating they feel the State Archives are located too far away but since only five respondents indicated they lived there, this information might not be representative for the population as a whole. For East Flanders and Namur the option attracted around 30% of the answers and for Brussels-Capital Region, Antwerp and Flemish Brabant between 35 and 40% of the respondents selected this answer. Further research concerning this topic might be worthwhile if the State Archives would like to attract more users to the reading rooms. A communication campaign on the Search website might convince users that the reading rooms have much more material to offer than the website currently is able to do. The State Archives could also consider playing up the emotional side of consulting physical sources since a large portion of their audience performs research surrounding their family history.

Another possible answer option to the questions ‘Why do you not consult physical sources’ was ‘All sources I wish to consult exist in digital format’ and this option was selected by 24% of the State Archives respondents. It seems reasonable to assume that the 52% who indicated that the distance to the reading rooms was their main reason for not consulting physical sources, do not feel that the online sources suffice for their research endeavours. It might therefore be possible to attract these respondents to a reading room by convincing them that the trip to the State Archives is worth their while. However, multiple staff members of the State Archives mentioned during the interviews that they think the general public sees archives as institutions where only academics are welcome. This might be an additional hurdle the State Archives need to overcome if they want to attract more visitors to their various reading rooms.

The practices of the participants who do make use of the physical sources also warrant some attention. Almost all respondents who consult physical sources make use of the digital catalogues of the institutions in order to find descriptions and reference numbers. Of those respondents, however, only between 60% and 75% also accesses digital sources through the digital catalogue. For almost half of the respondents of the State Archives and the Royal Library the reason for this is that they simply do not know that the digital catalogues offer access to digital sources. The CegeSoma respondents are even less well informed: 65% does not know that Pallas doubles as catalogue and digital library (mainly for the photograph collection). The reason for this difference might be that in the catalogues of the State Archives and the Royal Library there is a visible option for searching in the digital sources.

The digital catalogues of the three institutions all operate at web addresses that exist separately from the institutional website. Interesting differences can be observed between the ways in which visitors gain access to the catalogues of the three institutions. The most remarkable finding is that seven out of ten users access the Search website, which contains the digital catalogue of the State Archives, by direct access. This is twice as many as for the digital catalogue of the Royal Library and four times as many as for the digital catalogue Pallas of the CegeSoma. In contrast, 60% of CegeSoma catalogue users and 70% of Royal Library catalogue users arrive at the catalogue by clicking a link on the corresponding institutional website. For the State Archives this is the case for a little more than 5% of the catalogue users. It is tempting to conclude that the website of the State Archives does not function as an adequate gateway to the digital catalogue. This is, however, not supported by the data. The real issue here is that a large portion of the users of the State Archives’ Search website access it directly. If we look at the statistics of the institutional website and Search, we see that each month Search is accessed by twice as many unique visitors as the State Archives institutional website. This entails that at least 50% of the visitors of Search does not visit the institutional website. Consequently, the information present on the institutional website does not reach a large number of the users of Search.

The fact that so many users enter the Search website directly also indicates that the State Archives have a loyal public that knows where it can find the information it wishes to consult. It would therefore be a good idea to adapt the Search website so that it also displays the news items that are regularly published on the institutional website of the State Archives so that this loyal public is also brought up to date concerning the operations of the organisation.

The CegeSoma offers users access to digital contents in two ways: through Pallas (especially the photo collection and to a lesser extent the archival collection) and through War Press. Since Pallas also serves as the digital catalogue to find information about physical sources, one would expect it to attract a higher number of visitors. However, it has about 10% less visitors than War Press. A possible explanation for this situation can be found in the way in which visitors arrive at either Pallas or War Press. About 70% of Pallas' visitors arrive at the catalogue by clicking on a link on the CegeSoma website. Links only account for a little more than 10% of the traffic to the War Press website and of those links only about 40% originate from the CegeSoma website, which entails that various other sources promote the CegeSoma's newspaper collection. The traffic from search engines is almost a complete reversal of the data concerning external websites: a little more than 10% of the visits to Pallas originate from a search engine while almost 60% of the War Press traffic can be attributed to search engines. By performing a small test with Google one can easily see where the problem lies. The CegeSoma has a large photo collection concerning the Second World War but if one enters 'foto's tweede wereldoorlog' or 'photos seconde guerre mondiale' in Google, one has to click through to the fifth page of the results to find the first reference to the CegeSoma, namely the page on the institution website that explains which documents are included in the 'Images and Sounds' department. In contrast, if we enter 'kranten tweede wereldoorlog' or 'journaux seconde guerre mondiale' into Google, the War Press website is the first result on the first page in Dutch and the third as well as fourth result on the first page in French.

A well-known joke within the field of information science claims that 'the best place to hide a dead body is the second page of Google search results'. According to Digital Synopsis, the first page of Google results attracts 95% of all search traffic. With regard to results on the first page (excluding ads), a third of all clicks goes to the first result, less than a fifth to the second result and the seventh result receives less than one twentieth.¹³ It therefore seems extremely unlikely that someone who enters 'foto's tweede wereldoorlog' into Google will arrive at the photo collection of the CegeSoma. Only a small portion of the keywords used to arrive at Pallas is available since Google hides most data related to keyword use, but of those that are accessible more than 80% contains 'Pallas' and/or 'CegeSoma'. This hints at a situation in which Google only leads users to Pallas who are already

¹³ <https://digitalsynopsis.com/tools/google-serp-design>

familiar with the CegeSoma and its digital catalogue. One of the goals of search engines, however, is enabling users to find information they did not know existed. The CegeSoma should therefore reflect on how it can make its photo collection more visible online, for example by encouraging other organisations to link from their website to information about its photos and by investigating how the ranking of the photo collection in Google can be improved through Search Engine Optimisation.

Like the CegeSoma, the Royal Library has a digitisation project concerning its newspapers. It offers access to the digitised sources through a platform called BelgicaPress, which is linked to the main digital catalogue. The same problem as in the case of Pallas can be observed: most traffic comes from the Royal Library's website (about 6 in 10 visitors) and very little visitors (less than 3%) are being referred by a search engine. Performing a similar test with Google as with Pallas, reveals some interesting insights. The search terms 'belgische kranten' and 'journaux belges' do not yield a mention of the Royal Library's collection on the first search page. For the Dutch search terms one has to scroll to the bottom of the second page to find a page on the website of the Royal Library that links to BelgicaPress and for the French search terms it is necessary to scroll to the middle of the second page. Interestingly, the Dutch search term gives a link to War Press towards the top of page 2. The Royal Library should ask itself how it is possible that its large scale digitisation project receives a worse ranking than a specialised project of a much smaller institution. The situation improves when the search terms 'gedigitaliseerde belgische kranten' and 'journaux belges numérisées' are entered: the search in Dutch yields three results at the bottom of page 1 that refer to pages on the Royal Library's website that contain a link to BelgicaPress and the search in French also has three such pages but these actually have a good ranking as they are results 1, 2 and 3 on page 1. However, it is important to note that all results found in the test link towards information on the Royal Library's website and not the search interface of BelgicaPress itself. This entails that users who click on these results have to locate a link within the result in order to arrive at the interface.¹⁴ In contrast, the results discussed for War Press do lead to the actual platform.

The most important page of a website is the homepage and one of its goals is to convince visitors to advance to other parts of the website where they can find specific information. If many visitors leave the homepage without clicking through to other pages this might be an indication that the homepage should be reworked. According to Tribal Internet Marketing, the bounce rate for a homepage should not exceed 35%.¹⁵ The bounce rates for the CegeSoma website (www.cegesoma.be) in French and Dutch are slightly lower than this threshold while for the English language version it reaches 40%.

¹⁴ While the percentages related to the referrers concern the old website of the Royal Library, the test with the search words was conducted on 10 February 2017, 5 months after the new website of the Royal Library was launched.

¹⁵ <https://www.tribal.nl/blogs/wat-is-een-goede-bounce-rate-en-exit-rate>

For the website of the Royal Library (www.kbr.be) the bounce rate is for both Dutch and French also around 40%. The website of the State Archives (www.arch.be) exhibits a linguistic divide: the French language side has a bounce rate that comes in 10% lower than the proposed threshold while the Dutch and English language versions have a bounce rate almost equal to the threshold. The data indicate that the institutions could benefit from rethinking and restructuring their homepage in order to convince more visitors to click through to the contents presented on the rest of the websites.

Web analytics revealed that during almost 40% of the visits to the institutional website of the State Archives the users click through to the digital catalogue. For the CegeSoma this is only during a little less than one in four visits and for the Royal Library the result is remarkably low as only 5,5% of the visits result in the catalogue being consulted. The Royal Library did, however, launch a new website during the MADDLAIN project and introduced the option of performing a simple search in the digital catalogue by making use of a search field on the homepage. It would be interesting for the institution to investigate whether the bounce rate for the website has been lowered and more users click through to the digital catalogue.

User-friendliness of the digital catalogues

The three institutions each offer a main catalogue through which users can access metadata concerning the collections: Pallas (CegeSoma), Search archives (State Archives) and a nameless OPAC (Royal Library). The user survey revealed that the user-friendliness of these digital catalogues in many aspects leaves to be desired. However, most users are relatively satisfied with the catalogues since it allows them to prepare their visits to the institution at home, which means they can make optimal use of the time they spend in the various reading rooms.

When users arrive at one of the digital catalogues, they can enter a search term and launch a ‘simple search’ without changing or adding any parameters or they can opt to conduct an ‘advanced search’ by, for example, indicating in which types of documents they wish to search (Pallas and OPAC of the Royal Library) or add date limits (Search Archives). The requests conducted through Pallas and Search Archives are almost perfectly split between ‘simple’ search’ and ‘advanced search’. The requests in the OPAC of the Royal Library, however, consist predominantly of ‘simple searches’ as less than 15% of them contain any form of personalisation.

In Pallas there are two types of parameters that can be changed: ‘Search on’ and ‘Search in’. The first lets the user indicate if the search term should appear in the title, if it is the name of a person, ... while the second lets the user limit in which document types the search will be performed. Around 10% of all searches contain a modification for both types of parameters while 20% contain one for ‘Search on’ and 20% contain one for ‘Search in’. The ‘Search on’ parameter has an option ‘All (combined)’

and six other categories. The results of the web analytics analysis indicate that the CegeSoma should reflect on whether some categories should be removed in order to make the search interface less complicated since there is one category that gets selected in 12% of the performed searches, ('Nr. Image'), while all the other five combined only make up 16%. The reason why 'Nr. Image' gets selected much more frequently than the other might be that, contrary to what the simple search op claims ('All (combined)'), this type of metadata cannot be accessed by conducting a simple search. Additionally, this category is very useful for users who wish to locate a particular photo they saw in a publication. Also users who make a list of interesting photos while performing thematic searches can easily locate them again by searching through image number. The other categories offered by Pallas do not offer the same level of additional value and might therefore be considered for removal.

Visitors of the website of the State Archives who wish to consult the search engines of the institution can click through to the general Search website or to a specific search engine. The majority of those who continue to the search engines websites select a specific engine. The search engines 'Search archives' and 'Search persons' are by far the most popular engines but the number of visitors that advances to each of them is virtually identical. It has to be noted, however, that there is a divide along linguistic lines: 40% of Dutch speakers click through to 'Search archives' and 60% to 'Search persons'. For the French speakers the ratio is inversed: 60% to 'Search archives' and 40% to 'Search persons'. Since the search engine 'Search archives' has a double function, i.e. acting as the digital catalogue for physical sources and providing access to digital sources, two possible explanations are that a larger percentage of French speakers visits the reading rooms or that there are more digital sources online that are of interest to French speakers. Unfortunately, neither hypothesis is supported by the data. Less than half of the French speakers who responded to the State Archives part in the user survey visit a reading room compared to a small majority of Dutch respondents. The French speakers also lamented of a lack of digital sources for certain Walloon provinces (Namur in particular).

Belgium is a country with a complex linguistic situation, which entails that Federal Scientific Institutions need to decide in which languages they make information available to the public. At the CegeSoma, the State Archives and the Royal Library most sources are at present only being described in either Dutch or French due to a lack of financial resources and personnel. In some cases, keywords are added to the descriptions in both Dutch and French but because the institutions do not have an active metadata policy, there is no systemic quality control of the assigned keywords. A small test¹⁶ conducted in the main digital catalogues with the search terms 'Brussel' and 'Bruxelles' illustrates the situation well.

¹⁶ The test was carried out on 3 November 2016.

	Brussel	Bruxelles
CegeSoma	10.361	19.420
Royal Library	166.539	421.296
State Archives	2.228 (Preservation location: Brussels: +- 13% Flanders : +- 76% Wallonia : +- 11%)	2.227 (Preservation location: Brussels: +- 27% Flanders: +- 3% Wallonia: +- 70%)

For the CegeSoma and the Royal Library it is immediately clear that there is a very large difference between the search results received when performing a search with ‘Brussel’ or with ‘Bruxelles’. For the State Archives the results at first sight seem almost exactly the same but further investigation reveals that they are not. One of the filters offered by the catalogue is ‘preservation location’ and when the results per location are analysed, it becomes clear that the search term ‘Brussel’ predominantly yields archives preserved in Flemish depots while ‘Bruxelles’ primarily gives access to archives preserved in Walloon depots. A Dutch speaker and a French speaker would thus receive an equal amount of results but not the *same* results.

The above example clearly shows that the language used to query a digital catalogue has a tremendous impact on the results that will be returned. However, the institutions do not communicate to the users that sources are generally only described in either Dutch or French. The user survey revealed that 50% of Dutch speakers never enter French search terms into a digital catalogue while 80% of French speakers never employ Dutch. These results show that the institutions need to reflect on their metadata policies and communication strategies with regard to the languages used to make information available through their digital catalogues. Linked Data, for example, could be used to ensure that users receive the same search results no matter which language they employ to query a database.

Besides the already discussed digital catalogue Pallas, the CegeSoma also offers a website that serves as a catalogue and digital library for its newspaper collection: the Belgian War Press. The War Press website has a high general bounce rate of a little more than 50%. However, the fact that a user ‘bounces’ does not entail that the user did not find the page useful: it is possible that someone arrives through a search engines and finds the exact information they are looking for on the single page they access. This seems a plausible explanation for the high bounce rate of War Press since it has the highest percentage of visits obtained through ‘search engine’ referrers (a little less than 60%) and 60% of those visits ‘bounce’. Unfortunately, only a small number of the search terms people entered to

arrive at War Press are visible through web analytics but a significant portion of those that are available give the impression that people are looking for information about e.g. censored newspapers instead of the newspapers themselves. It is therefore plausible that a large number of the users who ‘bounce’ actually had a satisfactory experience with the War Press website.

Users who are looking for factual information might actually also be interested in looking at original newspapers but the War Press website does not do a good job of making it clear to users who arrive at an informational page that the website does not just offer textual information but also scans of the types of sources that are being discussed. At the top of the pages that give information about the different types of press that existed during the wars, three buttons are present: ‘This website’, ‘To consult online’ and ‘On war press’. If one wishes to have access to the scanned newspapers, one has to click on ‘To consult online’ but if one does not know that looking at original sources is a possibility, one might simply think that the link will lead to more information about the press, since it has not been specified *what* one can consult online. Changing this heading to something clearer, for example ‘Consult digitised newspapers’, might lower War Press’ bounce rate since users who arrived at one of the information pages would then also get informed that the website has much more to offer than texts about the press. At present, War Press comes across as a website ABOUT war press while it needs to communicate on all pages that it is a website that CONTAINS war press.

3.2.2. Communication about the Collections

The annual report of the State Archives of 2007 makes reference to a user survey concerning the services of the archives, which had as general conclusion that the users required more transparency, more content and more clarity with regard to the information that is made available through databases. This statement still holds true ten years later and is as applicable to the State Archives as to the CegeSoma and the Royal Library. During the MADDLAIN project staff members as well as users expressed their frustration with the general lack of communication concerning the collections and the catalogues. For example, the institutions do not mention on their websites that not all their sources have already been described in their digital catalogues. A question posed in the MADDLAIN user survey addressed this topic by requesting participants to indicate which percentage of the collection they thought had already been described in the digital catalogue of an institution. Users varied widely in their assessment of the institutions’ efforts with regard to describing their collections in the digital catalogues, with some people thinking almost all sources could be found in the digital catalogues while others indicate they assumed only a small portion of the collections had already been processed.

This situation is problematic as users need clear and accurate information about what can and cannot be found in the digital catalogues in order to be able to decide which search strategy is most appropriate for their research efforts. One of the main missions of libraries and archives is providing access to the collections they preserve. While it might not seem appealing to them to broadcast that a substantial part of their collections has not yet been described in their digital catalogues, they are doing their users a disservice by not informing them properly. The information concerning this topic does not necessarily have to be brought to users in a negative way. Institutions can be honest about the present situation of their digital catalogues and at the same time highlight the progress they are making. Frequent updates about newly added descriptions would have the double function of informing the users about the catalogue's contents and showing them that the institution cares about improving their user experience. In this context, the way in which the National Archives of the United Kingdom communicate is an interesting example. They indicate what they have and what they do not have as well as what is online and what is not online.¹⁷ On the page concerning the digital material that is already available, they also indicate that at present around 5% of the collection has been digitised. Clear communication about the progress of the institutions concerning digitisation can help users acquire a better view on the situation in the institutions.

The institutions keep statistics concerning how many people visit their reading rooms and through tools such as Google Analytics they also know how many visitors their websites attract. However, the institutions do not know if the users who consult physical sources in their reading rooms also access digital sources through their websites since it is not possible to link the two types of data with each other. In the MADDLAIN user survey respondents were asked whether they consulted physical sources of the institutions and whether they accessed the digital sources the institutions make available through their digital catalogues or dedicated digital platforms. Around 60% of CegeSoma users, 70% of State Archives users and 75% of Royal Library users who consult physical sources also consult digital ones. This entails that the majority of the computer literate reading room visitors makes use of the digital sources offered by the institutions but also that a substantial part of those who consult physical sources indicated not to consult digital ones. When respondents to the MADDLAIN user survey indicated that they did not consult the digital sources offered through a digital catalogue or digital platform, they were always asked to specify why they did not do so. Around half the respondents of the State Archives and the Royal Library, and 65% of the respondents of the CegeSoma indicated that they did not know it is possible to gain access to digital sources through the digital catalogue. This entails that a part of the reading room visitors who make use of a digital catalogue to locate information about physical sources apparently has no idea that the same digital

¹⁷ See www.nationalarchives.gov.uk/help-with-your-research/start-here

catalogue can be used to consult digital sources. Clearly, the institutions need to rethink the way in which they indicate in their digital catalogues that users can also use them to consult digital sources.

The CegeSoma and the Royal Library also offer access to digital sources through their own digital platforms, War Press and BelgicaPress respectively. Around two out of three CegeSoma and Royal Library respondents claimed that they never made use of the sources offered through the platform. Of these respondents, a little more than 70% indicated that they did not know the platform existed. The results for both platforms might seem negative, with a majority of the respondents not consulting them and many even being unaware that they exist. However, the results are not bleak if one looks at them from the perspective of wanting to improve the user experience of visitors. If so many people have never heard of the platforms this entails that there is a huge pool of potential users for whom a world of opportunities could open if they are directed to the platforms. Some respondent indicated they do not consult the platforms because the available sources are not relevant to their research and even those respondents might in the future become users if the institutions continue to add content to the platforms. The key advice for the institutions is that they need to communicate clearly about their platforms: first of all that they exist but also what they offer and which expansions of the contents take place.

3.2.3. The Valorisation of the Collections

The valorisation of the collections is an important topic for the institutions since it is a way to bring the collections closer to the public. In the MADDLAIN User Survey the participants were proposed six forms of valorisation and asked which ones interest them the most. For the three institutions the ranking was as follows :

1. Catalogue with digital collections (catalogue which gives direct access to digitised original sources).
2. Publications (books, exhibition catalogues, scientific articles, newspaper articles etc.).
3. Virtual exhibitions (thematic valorisation of original sources by means of a website)
4. Audiovisual productions (documentaries, broadcasts etc.).
5. Workshops (training sessions in which participants can enter into direct contact with original sources).
6. Physical exhibitions (thematic valorisation of original sources in an exhibition space).

The list clearly shows that the options for which participants have to visit the institutions are the least popular ones. The catalogue with digital collections is by far the most popular option and whether or not a participant visits the institutions to consult physical documents does not affect their preference

with regard to valorisation efforts. Even people who consult physical sources have a preference for digital valorisation options.

The user survey was only available in digital format but it seems improbable that we missed a large part of the actual audience. People older than 65, for example, make up more than 25% of the participants. It would therefore be incorrect to assume that the older generation is not interested in technological advancements since older people were clearly capable of participating in an online survey.

4. Conclusions and Tracks for the Future.

« Access » and « Communication » are the two key words that emerge from the results of the study carried out by the MADDLAIN project. The tools and means of communication used by the readers of the three institutions may have progressed considerably in the digital era, but the users have not basically adapted their needs in relation to the fundamental missions of the institution. Access to the collections is undoubtedly the first reason why users come to the State Archives, CegeSoma and the Royal Library. Activities such as workshops, publications, exhibitions or audiovisual productions only come second in the priorities of the persons interviewed.

4.1. Access to the Collections

In the survey, the question of « Access » has been considered for the paper collections as well as for digitized documents. In both cases, it would seem that the users combine several methods to access documents, by searching the digital catalogues as well as the paper inventories. The professional researchers specify that they apply several strategies in their search for information: key words, hierarchical tree, quotes, cascading research, information updating, contacts with experts, etc. The majority of the users profess satisfaction with the digital catalogues. The search engines are indeed used extensively: 20.000 single visitors each month for the State Archives, 10.000 for the Royal Library and 2.000 for CegeSoma.

Web analytics analysis and tests conducted by the MADDLAIN research team revealed that the access to the collections through both the institutional websites and search engines leaves to be desired. The website of the State Archives scored best with regard to the website functioning as a gateway to the different catalogues of the institution. However, the fact that there are four catalogues on offer (the main digital catalogue ‘Search archives’ and three more specialised catalogues: ‘Search archives producers’, ‘Search Persons’ and ‘Search library’) creates a confusing situation because it is not always clear to users in which of the catalogues they can locate the information they need. One suggestion is to remove the catalogue ‘Search archives producers’ from the main menus since an ‘archives producer’ is a term taken from archival science and largely meaningless to the general public. Users wonder what the difference is between the two catalogues with the word ‘archives’ in their names. The information in ‘Search archives producers’ contains information that is useful to archivists but not to the average user so the catalogue could be relocated to a specialised section of the

website. The three remaining catalogues are less likely to confuse users since their names make clear which types of information they contain: ‘archives’, ‘persons’ and ‘library’.

The website of the Royal Library scored abominable with regard to its function of serving as a gateway to the collections. The new website introduced in 2016, however, has tried to remedy this issue by placing a text field to search the main digital catalogue at the top of the homepage. It will be interesting to see to what extent this change will improve the Royal Library’s score with regard to users finding their way from the homepage to the digital catalogue. The CegeSoma’s website scored in between the State Archives and Royal Library with regard to guiding users to the digital catalogue. Until recently, users had to click three times in order to access the digital catalogue from the homepage of the institutional website. In March 2017 the institution changed the website so that the pathway to the digital catalogue Pallas (as well as other catalogues in the form of Excel lists) became more clearly indicated and could be accessed from two locations instead of one. However, users still need to click two times in order to access the digital catalogue Pallas. The same approach as the one taken at the Royal Library, i.e. a search field on the homepage, would greatly benefit the users of the CegeSoma. Unfortunately, this is at present technically not achievable with the current digital catalogue.

As discussed previously, the photo collection of the CegeSoma and the newspaper collection of the Royal Library are practically invisible in Google. Unfortunately, the same hold true for these two institutions metadata contained in their main catalogues. Ideally, it would be possible to find records present in the catalogues by performing a search in search engines such as Google. This is, for example, the case for commercial websites such as Amazon as well as the digital catalogue of the State Archives. A portion of the metadata relating to the collection of the CegeSoma can only be found in Excel lists and this is also not beneficial for their findability. Ideally, all metadata would be accessible through the digital catalogue Pallas.

The MADDLAIN project revealed another element concerning the access to the collections : the descriptions concerning the collections leave a lot to be desired. Staff members explained that in the past retro-conversion projects have taken place that were not always completed satisfactorily as there was not enough personnel to perform a quality control of the scanned index cards and to correct any errors. Participants of the user survey also indicated that they often come across mistakes in the digital catalogues and that when these mistakes are signalled they are not always corrected. Since the institutions still suffer from a lack of personnel, they should look into other options to improve the quality of their metadata. One way is to engage the general public through ‘crowdsourcing’.

Crowdsourcing projects are projects in which institutions request the help of the public in order to improve the accessibility of their collections. Users can help online by adding keywords/comments to descriptions in a catalogue or by completing specific tasks set by the institution (e.g. comparing a digital description with a scanned index card). A third of the user survey participants indicated they were interested in both types of crowdsourcing and a further 15% found one of the types appealing, so almost half of those surveyed were interested in contributing their time in order to improve the institutions' collections. Almost 30% of participants claimed to have no opinion on the subject so if the institutions launch interesting projects it might be possible to also persuade those respondents to participate.

At present, only the State Archives have a crowdsourcing project, i.e. Demogen¹⁸. This project focuses on genealogical sources and leads to the creation of an enormous database containing personal names and dates, taken from birth certificates, marriage certificates, death certificates etc. Participants need to download a software package in order to be able to contribute to the project. Demogen was launched in 2007 and since then a little over 400.000 certificates have been analysed, which accounts for around 2 million names in the database 'Searching persons'. In total, the database contains around 28,5 million names. This entails that around 7% of all the names in the database have been added by people participating in the crowdsourcing project. The large majority of names, however, was contributed by the volunteers of the various depots of the State Archives. Since the system has been running for 10 years, this entails that per year around 40.000 scans are treated by people working at home through the Demogen application.

Comparing Demogen with other initiatives can shed light on the success of the State Archives' application. A popular crowdsourcing platform in the Netherlands is www.velehanden.nl. Its first project was launched in 2011 and a year and a half later the project was finalised, with more than 300.000 archive records treated and more than 1,5 million person names indexed.¹⁹ On the website, other successful projects can be seen and in some (e.g. 'Tot uw Dienst!', 'Volgende Patiënt!' and 'Glashelder!') more than 10.000 scans were treated per month. This entails that there are projects that process more than 120.000 scans per year, which is three times as much as Demogen. Most projects on 'Vele Handen' originate from city archives so as a national institution, the State Archives should have a much larger pool of possible participants.

What is interesting in the user survey results is that there is a difference between the three institutions: of the State Archives users around half wish to participate in crowdsourcing projects while at the CegeSoma and the Royal Library the amount of users who are claim to be open to this kind of

¹⁸ http://demogen.arch.be/info_demogen.php

¹⁹ <https://picturae.com/nl/nieuws/creator/1320-eerste-project-velehanden-afgerond>

projects is around 8% higher. When we look at the results for the State Archives split into three groups, genealogists, professional users and people who make use of the sources for personal reasons, we see that the last two groups have a percentage similar to the CegeSoma and the Royal Library, while the genealogists have a much lower percentage, i.e. only 43%. This is striking as the Demogen system was specifically created for genealogical sources. The user survey does, however, suggest that this group is the last likely to participate in such endeavours. A possible reason for this situation might be that genealogists make use of various other websites (e.g. Family Search) where a lot of quality information can be found without the users having to contribute in any way (no payment system and no crowdsourcing system).

Around one in three genealogists indicated they had no opinion on the matter, which seems to suggest that they are not familiar with what crowdsourcing entails. For the CegeSoma and the Royal Library only one in five participants indicated that they did not have an opinion and for the users who use the State Archives for either personal or professional reasons, the percentage was even lower. It is therefore particularly notable that the group for which a crowdsourcing system is currently in place, does not have an opinion on the practice. This seems to suggest that the current Demogen system does not reach the intended audience. Analysis of the data collected through Web Analytics seems to confirm this hypothesis: in a six month period the webpages presenting Demogen was only consulted during 680 visits. In contrast, the webpage that explains the contents of the name database and provides a link to the database was consulted during more than 20.000 visits.

Last point but not least : the policy of digitization of the institutions. When cultural institutions and commercial companies such as Google started digitising collections it was thought that it was possible to eventually digitise all human knowledge that was ever produced. Nowadays, however, it is clear for information professionals that this goal cannot easily be attained. The digitisation department of the State Archives, for example, calculated that if the institution continues its digitisation efforts at the same rate as today, it will take 9000 years to digitise the current collection completely. It is therefore important that users realise that a very large portion of the collections of cultural heritage institutions cannot be accessed through digital technologies. The sources that have been digitised are also not all freely available online. There are various reasons for this: institutions might wish to charge for the consultation of the sources they digitised, the metadata of the sources might be insufficient and cause them to be impossible to find, there might be copyright issues that prevent the sources from being placed on the internet or the sources might contain information of a sensitive nature, which entails privacy laws prohibit their distribution. The average user of heritage collections, however, does not realise that many sources are only accessible inside the institutions that preserve them.

The institutions studied in the MADDLAIN project attempt to digitise substantial parts of their collections but unfortunately they suffer from a lack of structural funding. The institutions largely have to rely on subsidies from the Belgian Science Policy Office (currently within the context of DIGIT03) and other projects that contain a budget for digitisation, for example because their aim is to study a particular part of the collection and having digital access to the sources makes it easier to conduct research. This entails that the institutions can almost never work on long term projects and can only digitise their collections in small increments. Consequently, choices with regard to which sources will be digitised have to be made and the institutions have to accept that they will be able to make their full collections digitally available. Additionally, they are confronted with the fact that most projects only contain financial resources for the digitisation of sources and not for their storage valorisation or transfer to other digital storage media in order to guarantee durable storage.

4.2. Communication

The question of communication is also a key question in the results of the survey. The institutions are used to communicate extensively through their websites, social media profiles and press releases about events (exhibitions, workshops, conferences...) but the collections are much less frequently placed in the spotlights. When the institutions do communicate about their collections it is usually about the master pieces of their collections. It be beneficial to the users if the institutions would more clearly communicate about which metadata can be found in their digital catalogues and which items of their collections are also available in digital format. The way in which the National Archives of the United Kingdom communicate about their collections could serve as an example. On their website they make clear which sources they preserve and which they do not as well as what can be found online and what not. The institutions are continuously trying to add metadata and digitised documents to their catalogues as well as new digitised documents. The communication concerning these efforts could be greatly improved towards both staff members and external users. It would also be a good idea to explain clearly to users which steps have to be taken in order to digitise documents so that they will better understand why making collections available online is very time consuming. The user survey revealed that certain users are unaware that the institutions have to follow copyright and privacy legislation when they make information publicly available. A remarkable example is the fact that quite a few genealogists who participated in the survey were unaware that personal details can only be made available after 100 years have passed. The State Archives might consider communicating more clearly about the consequences of the applicable legislation since that might prevent users of getting frustrated because they cannot find certain information. F

4.3. The Valorisation of the Collections

The User survey revealed that the user public that consults the institutions' collections regards digital access to those collections as the top priority. For all three institutions the option of a catalogue that offers direct access to digitised original sources was by far more popular than all other options. It seems that the public that consults the collections essentially wishes a better access to the collections and regards other types of valorisation as nice additions. The institutions should, however, not stop the development of all other forms of valorisation. The User Survey mostly attracted answers from people who actively make use of the institutions and not the general public. Over the past few years the institutions have organised exhibitions, for example the one about king Albert and queen Elizabeth, that were well received by the wider public. Also publications aimed at a wider public, for example Knack Historia, remain popular.

4.4. Studying User's Digital Practices and Needs in Archives and Libraries

In addition to the results presented above, the MADDLAIN project also allowed the institutions to question the most appropriate way of communicating with different types of audiences in order to improve the user experience. At the end of a 2-year process that involved 6 different researchers, attracted the participation of 2,300 external users, resulted in dozens of hours of interviews and the analysis of millions of data, two essential questions arise : how to transform the results obtained into concrete actions and how to continue the dialogue started with the public outside a specific research project?

If it is essential to communicate with your audience, listen to its grievances, create a dialogue to establish a relationship of trust, it is even more fundamental to perform actions that meet its expectations and that shows that the institution really takes account of its needs. This proactive approach requires that operational teams are aware of the improvements to be made to the various digital tools and services offered by the institution as well as the opportunities for their future development. This means being able to get out of the scientific reports of the project, to draw the substantive marrow of the results, to identify the priority actions of others, those which can be easily realized from those which require more investments of time and money.

The first concern of the institutions was therefore to organize in-house information sessions on the results of the project both for the managers of the various departments and for the staff responsible for encoding, scanning or having relations with the visitors in the reading rooms. Collective workshops on the model of the World Café were also organized, offering everyone the opportunity to react on the results presented and to share their ideas. The final goal is to write a general policy note on digital development in each institution.

In addition to internal communication, the dissemination of the results to the general public also appeared as a key element. Not only to inform the public about the findings of the survey, but also to underline the importance of its participation. A poster and a brochure summarizing the results of the survey have been produced.

In parallel with the communication work on the project, initial actions have been undertaken. The aim of the institutions was to respond quickly and effectively to grievances concerning easily-resolved issues in a relatively short time and with an investment of time and money that remained realistic. As examples, the Belgian State Archives have produced a small explanatory video on the functioning of their search engine while CegeSoma has improved access to the collections on the home page of its website by modifying certain terms or adding access points.

The second essential question that arises when a project such as the MADDLAIN project is concluded is that of continuing the dialogue with the public after the end of the research carried out for two long years, and therefore with the teams present in the institutions. Conducting field surveys, collecting structured data and analyzing them requires indeed both time and skills that are sometimes lacking. The priority of the researchers was therefore to be able to propose simple and adapted solutions that could be easily followed by the staff concerned, particularly through an article detailing the methodology applied during the project.²⁰

²⁰ Hungenaert, J., & Chardonens, A., "Combining Quantitative and Qualitative Methodologies to Analyse User Behaviour and Access Paths to Digital Content: Case Studies from Three Belgian Federal Scientific Institutions", in *Archives et bibliothèques de Belgique*, 87(1-4), II. Varia (2017), 325-361.

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