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Internationales Archivsymposion/International Archives Symposium in Arnhem (2024)

Sind wir vorbereitet ? Zukunftsfähigkeit unserer Archive
Are we prepared ? Are our Archives future-proof ?

ANNALEN/PROCEEDINGS

REDAKTION - RÉDACTION - REDACTIE
Els Herrebout

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ALGEMEEN RIJKSARCHIEF
EN
RIJKSARCHIEF IN DE PROVINCIËN

ARCHIVES GÉNÉRALES DU ROYAUME
ET
ARCHIVES DE L'ÉTAT DANS LES PROVINCES

GENERALSTAATSARCHIV
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STAATSARCHIVE IN DER PROVINZ

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Quo Vadis archives?
What does our future look like?
Where will we be in 25 years?

Fred VAN KAN[1]

Futurology

The physicist, sociologist and futurologist Rolf Kreibich defines futurology as "the scientific study of possible, desirable and probable future developments and design options as well as their prerequisites in the past and present."[2] This definition includes the adjective desirable. On this point, Kreibich agrees with the ideas of the Dutch futurologist Fred Polak, known for his magnum opus *The Image of the Future*, who postulated in 1980:

"Futurology is: firstly, to explore the situation, secondly, to see whether the expected development is favourable, then to see what needs to be done to improve the coming situation, if necessary, and finally: what can we do, and how? The latter in particular - what lies within our power - is very exciting: creating a new and better future. That is the ideal of the old utopians. To inspire a society, that's the most beautiful thing of all."[3]

To be honest, I feel at home with Polak's approach, and I realize that I am also influenced by the idea of progress that has been so prevalent since the Enlightenment. This is definitely a different way of thinking from that of the 11th-century Bishop Adelman of Liège, who held: "Everything has been excellently ordered by the forefathers; nothing new can be made."[4]

In his model of the future, Ulf Pillkahn, Professor of Innovation and Technology Management in Munich, outlines a stratification of knowledge: the further from the present, the greater the uncertainty, progressing from knowledge, to informed opinion, to conjecture, and finally there is only

[1] Dr. Fred van Kan is the former managing director of the Gelders Archief, Arnhem.
[2] R. Kreibich: Zukunftsforschung. ArbeitsBericht Nr. 23/2006, IZT, Berlin 2006, S. 3.
[3] C. de Stoppelaar, 'Professor Fred Polak: "Alles wat ik heb voorspeld is uitgekomen." ' Interview in: NRC Handelsblad, 11-10-1980.
[4] A.G. Weiler, 'Hervormingswil en normatief verleden in het denken van Nicolaas van Kues', in: P. Bange (ed.), A.G. Weiler, De Middeleeuwen voorbij. Humanisme en scholastiek op de drempel van de nieuwe tijd. Verspreide opstellen, verzameld ter gelegenheid van zijn 65-ste verjaardag. Middeleeuwse Studies 9 (Nijmegen, 1992) 145.

speculation.[5] So, if we want to form a picture of the future of archives, we must realize that the reality of the year 2050 is difficult to achieve. On the one hand, it can be assumed that developments already underway will continue; on the other, there are also factors that will break with the past and lead to new paths. Pillkahn himself wrote in 2007: "Home workplaces - even if they are equipped with even more modern technology - cannot replace office workplaces. We know that today. That was just a temporary phenomenon during the internet boom."[6]

In 2024, we know better - Covid-19 has turned the world upside down. Another example: in 2015, the booklet *Op weg naar 2020 en verder* (heading towards 2020 and beyond) was published, offering scenarios for the future of the archival function in The Netherlands. In one scenario, in some years a rise of trust was expected in the government "because there is more openness and transparency within the government."[7] That is certainly not the practice in the Netherlands in the 2020s.

Despite all uncertainties, I still see opportunities to sketch out what I think the archival function will look like in 2050, based on what we know now.

One Government Information Desk

Let's jump to 2050. The archival function is now part of a fully-developped e-government in which, in principle, all communication between citizens and authorities takes place through the same digital desk. In 25 years, the archival function has developed into a comprehensive information function. The archivist manages all government information regardless of where it is stored and is responsible for its permanent preservation, but only after the files are closed. Until then, the relevant department or official is responsible for storage. The distinction between dynamic and static only exists here. One speaks of transfer when the boundary between dynamic and static is crossed. Legislation in our countries still provides for formal transfer periods of ten years, but early transfer is permitted and this option is utilized almost everywhere, resulting in the aforementioned boundary between dynamic and static.

[5] U. Pillkahn and V. Döricht, 'Zukunftsbetrachtungen und Prognosen im Unternehmensumfeld', in: O. Gansser and B. Krol, Markt- und Absatzprognosen. Modelle – Methoden – Anwendung (Wiesbaden, 2015) 56.
[6] U. Pillkahn, Trends und Szenarien als Werkzeuge zur Strategieentwicklung (Erlangen, 2007) 15.
[7] J. Nekkers and J. Plantinga, Op weg naar 2020 en verder … Het verhaal van de archieffunctie (2015) 18.

The involvement of the archivist does not mean that he is responsible for the content: Appeals against decisions or requests for clarification of decisions, etc. should be addressed to the relevant department. But this department then uses the same digital archives for its information.

At the beginning of the 21th century, the city of Stockholm led the way in the development of the one digital government desk. Already since 2010 the e-Arkiv in the Swedish capital existed for all digital records. All digital information created within the city's administrations, municipal companies, and foundations, e.g. from areas such as school, culture, environment, the port, Stockholm water, social services, finance and much more were stored in this e-Arkiv.[8]

In the past decennia the government's drive for transparency led to somewhat similar initiatives elsewhere. In Hamburg, for example, the first German state-wide transparency act was adopted in 2012 with far-reaching automatic publication obligations. This act enabled the Hamburg administration to provide all citizens with access to official information, data, and documents without having to submit an application. Already for many years now the Hamburg Transparency Portal exists and the archives are responsible for it. Data and documents from the Hamburg administration and many public companies can be researched and accessed via this portal. The Hamburg State Archives are responsible for the portal.[9]

Ten years later, in 2022, the city archives of Amsterdam developed the website "Open Amsterdam."[10] This was realized in response to the, by then, new Open Government Act of that year, which guarantees that everyone can find and access government information. Nowadays, in 2050, the Amsterdam website is the central hub for all urban government information. The public uses the same digital desk to consult records from medieval times as well as documents that were archived recently.

Inspired partly by the Amsterdam example, the association KVAN launched the whitepaper *Het archief als nutsvoorziening. Van centrale naar verdeelstation* (The archives as public utility. From power station to

[8] S. Naeslund Lems, 'E-Arkiv Stockholm: From vision to digital archives', Archivpflege in Westfalen-Lippe 74 (2011) 14-17.
[9] https://transparenz.hamburg.de (accessed on 28 March 2024).
[10] https://www.amsterdam.nl/stadsarchief/nieuws/woo-open-amsterdam/ (accessed on 28 March 2024).

distribution station) in 2023.[11] This paper argued to develop the archives into the central place for facilitating all forms of use and reuse of historical and current information, regardless of why that information had been formed. The user's needs were central to this concept. Here, the archive was explicitly seen as a distribution station. It also broke with the tradition of the archives as custodian of old information. Both current and historical information should be made available through the distribution station. This concept was widely followed.

The Storage: The Digital Repository

Currently, in 2050, a governmental repository takes various forms. It still includes the traditional physical storage for analogue documents, mainly on paper, but it also has one or more digital locations, collectively referred to as a digital archive or e-repository. These archives contain both data that arises from current work processes that needs to be stored temporarily as well as data that needs to be stored in the longer term or even permanently.

The digital archives continues to be defined as the totality of the organization, policies, processes and procedures, financial management, personnel management, data management, data security, and existing hardware and software that enables the sustainable management and consultation of preserved digital archive documents (the so-called OAIS model[12], ISO standard 14721).

The legal framework for the archival function is provided by the Information Act, which in The Netherlands includes three former acts: the Archives Act, the Freedom of Information Act and the Data Protection Act.

The Archivist as a Key Figure

As I pointed out, the key figure in public information management is the archivist. His influence extends beyond the e-repository and its functions. The archivist is involved whenever work processes change and the recording and transfer of information changes as a result. In fact, no applications can be implemented without an input of the archivist.

[11] https://www.kvan.nl/wp-content/uploads/2023/12/KVAN-Het-archief-als-nutsvoorziening-whitepaper-december-2023.pdf (accessed on 28 March 2024).
[12] https://public.ccsds.org/pubs/650x0m2.pdf (accessed on 28 March 2024).

The principle of "archiving by design"[13], introduced in the early 21st century, is now widely accepted: Applications are more or less unsaleable unless an archiving component is an integral part of the package and offers a good connection to the e-repository.

In the 2020s, there was a debate about archiving where the document is formed, i.e. about archiving at the source. The authorities were increasingly reluctant to transfer digital files to the digital archives. This resistance related in particular to extensive data stocks where it was difficult to distinguish between dynamic and static, and which could not be viewed by officials as they did before because the associated software was not available in the e-repository. Nowadays, however, with a repository that contains nearly all data, there is no resistance anymore.

Over the years, specialized software packages have become available in the e-repository in addition to the document management systems. As a result, even complex data sets can be viewed in the secure environment of this repository, such as i.e. GIS files. It is also possible to reset databases in time in order to see which combination of data was used in a particular case. It is worth noting that a strong joint approach by the EU has led to far-reaching standardization at the European level. Various software packages understand each other nowadays without any problems. This has also made it possible to realize the principle of single storage and multiple use, which remained a fine ideal for a long time.

Repository for Obsolete Software

What has not changed over the years is the almost daily switch in software packages, resulting in the archivist constant confrontation with obsolete software in the e-depot. This need not be a problem as long as the supplier makes new versions available, but if a package is no longer available, a problem can arise. Fortunately, the foundation Software Heritage, in co-operation with UNESCO, created a repository for antique software.[14] Thanks to this repository it is possible - for example by emulating these software packages - to keep accessible digital documents in formats that are no longer in use. As a result, it is not necessary for the various local, regional, and national governments to keep their own versions of software packages.

[13] https://www.nationaalarchief.nl/en/archive/knowledge-base/archiving-by-design (accessed on 28 March 2024).
[14] See: https://www.softwareheritage.org/ (accessed on 28 March 2024).

The archivist works with applications that are managed by the provider (of the SaaS solution) in the cloud, so that the archival institutions need not take care of application and technical management; functional management is sufficient. The physical location of the digital repository is usually not on the government's premises, but in one of its data centres. These data centres fulfil all legal security requirements, including protection against cybercrime.

Paper files are still transferred to traditional, physical archives. However, over the past few decades, the volume of paper documents produced has decreased to nearly zero.

Broadening What Should Be Preserved

The files to be retained permanently currently also include the algorithms used by government agencies. Earlier, not much attention was paid to the archiving of algorithms. However, this changed when information on how authorities used algorithms in various areas, e.g. in personalised preliminary investigations by the police or in investigations by tax authorities to prevent possible tax evasion, became public. This led to discrimination and profiling.

Government websites are also stored permanently, with the possibility of accessing older versions at different times. The same applies to text messages sent via messaging services. Originally, such messages were exchanged by the authorities in a relatively informal circle, but as they are in practice part of the authority processes, guidelines for the use of such services have been developed and the messages are checked for their archival value. However, the interpretation of these messages remains difficult, especially when emoticons are used. In these cases, it is not always clear in the long term what the sender of a message really meant. However, a ban on the use of messaging services by public authorities has proven to be untenable, partly because citizens have the right to use these media forms to communicate with their authorities.

Sustainability

Anno 2050 documents are still being destroyed, but this is done automatically and managed in the digital repository. Although there used to be a debate about whether destruction should actually be destruction or whether inaccessibility would be sufficient, this debate has been decided in favour of actual destruction for two reasons:

First to prevent documents that have been formally destroyed from becoming accessible again in any way and second to reduce the energy consumption.

In 2021, the EU-members agreed that the European Union should be climate neutral in 2050.[15] The archival sector has successfully achieved this goal. This required a substantial cut in energy consumption needed for data storage and data traffic. The sector has mainly succeeded in this thanks to the use of synthetically generated DNA as a storage medium.[16] This medium is much more energy-efficient than the large data centres used until recently. This is not surprising. After all, DNA molecules can store up to information a million times more compact than traditional storage media. Moreover, the usage of DNA hardly consumes any energy.

Private Archives

As in the era of paper archives, archives of private institutions and individuals are still being transferred to archival institutions. However, unlike government documents, which are transferred to the e-depot shortly after their creation, private institutions and individuals transfer entire archives, after agreed deadlines. These files go through a review process before they are included in the digital repository.

Backlogs

For many years, traditional cataloguing work by archivists continued. This was necessary because the archives were struggling with considerable backlogs in the cataloguing of paper archives at the time. At the *Gelders Archief*, for example, around 20% of archival records were not publicly accessible in 2020. Additionally, a survey conducted by the *Sächsischer Archivtag* in 2019 revealed that around two thirds of archives had not indexed more than half of their holdings.[17] Backlog processing prevented archival funds from falling into oblivion.

The creation of further access, usually in the form of indexes, was carried out by volunteers in many archives for many years, but the use of artificial intelligence (more on this later) has virtually eliminated their role today, in 2050.

One process that has not yet been completed concerns the meta dating of old, analogue files so that these files can be linked as Linked Open Data. This has

[15] https://climate.ec.europa.eu/index_en and https://eur-lex.europa.eu/legal-content/EN/TXT/-HTML/?uri=CELEX:32021R1119 (accessed on 28 March 2024).
[16] See: J.H.D. Brandao Gervasio et al., 'How close are we to storing data in DNA?', Trends in Biotechnology 42 (2024) 156-167.
[17] https://saechsischer-archivtag.vda-blog.de/2019/04/11/umfrage-zur-erschliessung-erschliess-ungszustaende/ (accessed on 28 March 2024).

turned out to be a mammoth task that many colleagues have been dreading for a long time. Initially, this also applied to the implementation of the ICA description standard Records in Contexts, but today many archives have converted their existing archive holdings with the help of special tools. The start of this migration was hesitant, but once key players, such as the Amsterdam City Archives in the Netherlands,[18] took the lead, the process got off to a good start.

Diversity and Inclusivity

Archives, much like society as a whole, explicitly strive for inclusivity and diversity when describing, re-describing and meta dating analogue archives as well as digital archives. This also applies to the acquisition of private archives, based on the idea that archives should serve as a source for the memory of all parts of society. However, the importance placed on inclusion and diversity does not mean that old descriptions and metadata disappear altogether. They tell the story of how archives were handled in the past and therefore deserve to be preserved. Even after 2050, existing metadata and descriptions will continue to change from time to time, because in the future there will always be shifts in language usage requiring changes.

Access / Relevance

The social relevance of archives is directly proportional to their use. All activities are geared towards access. The place where access is provided is the archives' website. Where more recent information is concerned, it is mainly the governmental administration that uses the information for its business operations and to a lesser extent the public seeking justice and looking for evidence. The older the information, the more the archives serve as a cultural memory.

In the past, reading rooms were very well attended. With the increasing digitization of documents, visitors' numbers dropped and the Covid-19 pandemic of 2020-2021 led to a complete collapse, which, with some exceptions, ensured that the numbers never returned to pre-2020 levels. Since nowadays all analogue documents have been digitized, there is hardly any need to consult them in reading rooms. They can be viewed together with the born digital documents via the same access point. If requested information is not public, or not yet public, documents can be made available upon request via the electronic identity card.

[18] See: M. Geerlings, Linked Data. Perspectieven op beschrijving en gebruik. Achtergrond, kansen, uitdagingen en actie! (Amsterdam, 2022).

A special service nowadays is the possibility to automatically transcribe scans of originally analogue documents into machine-readable text and then, if needed, translate these into modern language. Over the past twenty-five years, many digitized documents have already been automatically transcribed and converted into one of the modern languages. In the Netherlands this started thirty years ago, around 2020, when several large digitization projects were carried out: The Nationaal Archief completely digitized the archives of the Verenigde Oostindische Compagnie and the Stadsarchief Amsterdam did the same with the notarial archives from the period 1578-1915.[19] By uploading a large number of scanned pages into the computer and transcribing each page by hand, the computer was trained to read large files and subsequently convert them into text files. As a result of having fed an enormous amount of data into computers worldwide and exchanged via networks, the yield of computer-aided transcription is nowadays usually close to 100 per cent. Audio archives from radio stations have also been converted into searchable text. The more traditional OCR technology continues to be used to make typed and printed texts virtually available.

Furthermore, the description of images, such as photos, has been considerably simplified. For years, computers have been trained to use large quantities of photos in their metadata. This is now paying off: an environment, but also a person, can be recognized in an image, and sometimes the image can even be dated. Initially, the false acceptance rate (FAR) and false rejection rate (FRR) were still high, but this is no longer the case in 2050.

Q and A

At the beginning of this century, chat boxes were used to conduct research and answer simple questions. Here too, computers have been trained to such an extent that the vast majority of questions can now be answered virtually without human intervention.

The website of the archival institution is also the place where official, binding notices of the respective government can be found. These can also be accessed via the website for general announcements as designed by the respective national authorities. Citizens can request to receive an e-mail message when new announcements are added to the category they have specified. By merging the electronic publication page with that of the archives a few years ago, the double publication of e.g. municipal council minutes was

[19] See their websites.

eliminated. These records can now be found with just a click and are only saved in one place, within the digital archives.

It goes without saying that the governmental agencies, and thus the archives, offer their information open. As you know, open data is "data that can be freely used, re-used and distributed by anyone."[20] In this way, archives follow the FAIR data principle: the data are Findable, Accessible, Interoperable and Reusable. An important prerequisite for an open offer is the realization of open access, namely that the technical exchange of digital information is organized in an open way. Today, however, this is a matter of course. Rights of use are granted by means of Creative Commons licenses. The licenses that can be used for open data are: CC Zero = the copyright is in the hands of the archive; CC By = the name of the author must be mentioned, and CC BY-SA (Share Alike) = distribution under the same conditions. If there are no more copyright claims, you can add the Public Domain Mark (PDM).

Artificial Intelligence

Anyone looking for information, whether for historical research or to participate in the democratic process, has long since stopped relying on their own powers of reasoning. Artificial intelligence supports people in their searches. This happens in a very task-specific way when we use search engines, but also when we use computers to analyse big data. The artificial intelligence of computers has now expanded to become general artificial intelligence, or, in the words of futurologist Ray Kurzweil, the singularity has been reached. In his 2005 book *The Singularity Is Near*, Kurzweil[21] predicted the singularity for the year 2045. Human intelligence would then be surpassed, and this is actually happening in our time, including our field of expertise; Kurzweil saw it correctly.

Let’s look at our field of activity: The most complex search questions can be asked of the data in our digital archives and in many cases lead to interesting and useful results. It is then the researcher's job to present these results in a way that the interested reader can understand. It is a little frightening that computers suggest and develop new research on its own and that the historian is increasingly becoming the research coordinator; He is carrying out less and less of the research himself.

[20] For this paragraph see F. van Kan, ‘Vollständige Online-Dienste. Möglichkeiten und Unmöglichkeiten’, Archivar 71, Heft 1 (2018) 26.
[21] R. Kurzweil, The Singularity Is Near: When Humans Transcend Biology (New York, 2005).

Archives and libraries

In their public function, libraries have a lot in common with archives, especially when they also have a preservation function. In this context, the merger of the National Library and the National Archives in Canada in 2004 to form Library and Archives Canada was a logical step.[22] However, elsewhere, such mergers have hardly taken place. On the contrary, the functions of archives and libraries have become increasingly separate. Most archives, for example, no longer collect books or journals in digital or print form; this is left to the national libraries. The archives that do have libraries are now accessible via regional libraries. In practice, however, this is becoming less and less necessary, as most publications can be viewed digitally online after copyright expires, thanks to the efforts of national libraries in particular. Incidentally, government publications with an ISBN or ISSN code are not made accessible via the archives' website but are transferred to a library.

Archives as Museums

The original paper and parchment documents which are managed by the archives are hardly used for research anymore, as they have been completely digitized and the digitized copies are publicly available online. Therefore, archives nowadays only have a very limited number of study spaces.

However, this does not mean that the original documents have lost their value. It rather means that they have taken on a different role. You can say that archives has taken on the character of a museum. Documents of significance to a city, region, province or country are exhibited, as well as documents that have artistic value in addition to being informative, such as medieval manuscripts and special prints of photographs. Archives do not always fulfil this museum role. Sometimes this is left to a local historical museum.

Personnel

Due to the increasing complexity of legislation, the need for legal expertise within an archival institution is greater than ever. This does not mean that every archives has an extensive legal staff. Through an institutionalized national network, knowledge is shared and one can fall back on the specialisms of colleagues. To this end, reciprocal working agreements have

[22] M. Doucet, 'Library and Archives Canada. A Case Study of a National Library, Archives, and Museum Merger', RBM: A Journal of Rare Books, Manuscripts, and Cultural Heritage 8 (2007) 61-66.

been concluded and focal points distributed among the various archives. The same goes for IT expertise.

As the traditional repository also needs to be maintained, most archives have the necessary staff, such as archive specialists, repository staff, and technical staff to monitor the storage facilities.

Innovative minds are always important within the institution, for example for design thinking: the design of digital information management at the front end.

The use of AI in the cataloguing of old documents means that only a small number of employees with historical knowledge and knowledge of the holdings is needed. Although the collegial network is used here as well, most archives have decided to keep specialists in-house in order to maintain affinity with local and regional history.

In 2020-2021, administrative staff generally switched to working from home as a result of the Covid-19 pandemic. After 2021, a hybrid situation remained, with the average administrative employee working from home for as much as half of their working hours as possible. Currently, employees only work on site when the content of their work requires it. Thanks to the well-equipped digital working environment, virtual working from home has become the norm. Today, in 2050, colleagues still meet physically, but with a clear goal: to strengthen mutual bonds and team spirit. The same applies to the collegial network outside your own organization.

Finally, I summarize my lecture in a few statements:

1. In 2050, the archival function is part of a fully developped e-government in which, in principle, all communication between citizens and authorities takes place via the same digital access and will lead to transparency.

2. The archivist is the key figure in public information management.

3. The boundary between the dynamic and static archives is completely drawn forward and begins immediately after the close of filing.

4. Files to be retained permanently include governmental websites, text messages sent and received by public agencies, and the algorithms used by the government.

5. Inclusivity and diversity are strived for.

6. Artificial intelligence is used on a large scale.

My vision on the future is based on the developments that are currently, anno 2024, emerging. It is also an ideal picture, in the expectation and hope that our work will continue to develop in a strongly audience-oriented way.

In addition, I have some wishes. They concern the differences that exist worldwide due to different income levels. Although in our countries the archival world has become virtual and accessibility and transparency are of a good standard, this is still far from being the case everywhere else on the globe. In countries with low-income levels, the archival sector is still partly analogue and people rely on printouts of documents, which are then stored in poorly equipped repositories. Where it is possible to work digitally, power cuts regularly lead to work interruptions. So, there is still a lot to do worldwide. In this context, I hope that what is stated in the preamble to the 2009 "Universal Declaration on Archives" will become a reality everywhere:

“Archives are a unique and irreplaceable heritage passed from one generation to another. Archives are managed from creation to preserve their value and meaning. They are authoritative sources of information underpinning accountable and transparent administrative actions. They play an essential role in the development of societies by safeguarding and contributing to individual and community memory. Open access to archives enriches our knowledge of human society, promotes democracy, protects citizens’ rights and enhances the quality of life.”[23]

[23] See: https://www.ica.org/resource/universal-declaration-on-archives-uda/ (accessed 29 March 2024).