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Further information on ERPANET and access to its other products is available at <http://www.erpanet.org>.

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (<http://europa.eu.int>).

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ELECTRONIC RESOURCE PRESERVATION AND ACCESS NETWORK



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Executive Summary

While the retail sector is generally aware of the importance of digital preservation, there are different opinions about the priority it should be given. Where there is legal requirement to keep data it is usually only for then years. This is the main reason for the low pressure and the different approaches to the issue, with some companies having far-reaching preservation programs and policies in place, while others postpone developing solutions towards digital preservation to a later date.

Sales transactions data and common business data form the bulk of the preserved information. In addition, some companies also preserve data connected to their corporate image, including advertising materials. Among the reasons for preservation, legal compliance and business processes are prominent.

Companies that do address digital preservation can claim to have in place detailed policies, best practices, and systems that use standard formats. The policies cover not only selection criteria but also issues of access. Responsibility for preservation is generally divided among different departments and agencies, which hampers the general overview. The benefits of metadata tend not to be exploited fully.

Chapter 1: The ERPANET Project

The European Commission and Swiss Confederation funded ERPANET Project¹ (Electronic Resource Preservation and Access Network) works to enhance the preservation of cultural and scientific digital objects through raising awareness, providing access to experience, sharing policies and strategies, and improving practices. To achieve these goals ERPANET is building an active community of members and actors, bringing together memory organisations (museums, libraries and archives), ICT and software industry, research institutions, government organisations, entertainment and creative industries, and commercial sectors. ERPANET constructs authoritative information resources on state-of-the-art developments in digital preservation, promotes training, and provides advice and tools.

ERPANET consists of four partners and is directed by a management committee, namely Seamus Ross (HATII, University of Glasgow; principal director), Niklaus Bütikofer (Schweizerisches Bundesarchiv), Hans Hofman (Nationaal Archief/National Archives of the Netherlands), and Maria Guercio (ISTBAL, University of Urbino). At each of these nodes a content editor supports their work, and Peter McKinney serves as a co-coordinator to the project. An Advisory Committee with experts from various organisations, institutions, and companies from all over Europe give advice and support to ERPANET.

¹ ERPANET is a European Commission funded project (IST-2001-32706). See www.ermanet.org for more details and available products.

Chapter 2: Scope of the Case Studies

While theoretical discussions on best practice call for urgent action to ensure the survival of digital information, it is organisations and institutions that are leading the drive to establish effective digital preservation strategies. In order to understand the processes these organisations are undertaking, ERPANET is conducting a series of case studies in the area of digital preservation. In total, sixty case studies, each of varying size, will investigate awareness, strategies, and technologies used in an array of organisations. The resulting corpus should make a substantial contribution to our knowledge of practice in digital preservation, and form the foundation for theory building and the development of methodological tools. The value of these case studies will come not only from the breadth of companies and institutions included, but also through the depth at which they will explore the issues.

ERPANET is deliberately and systematically approaching disparate companies and institutions from industry and business to facilitate discussion in areas that have traditionally been unconnected. With these case studies ERPANET will broaden the scope and understanding of digital preservation through research and discussion. The case studies will be published to improve the approaches and solutions being developed and to reduce the redundancy of effort. The interviews are identifying current practice not only in-depth within specific sectors, but also cross-sectorally: what can the publishing sector learn from the aeronautical sector? Eventually we aim to use this comparative data to produce intra-sectoral overviews.

This cross-sectoral fertilisation is a main focus of ERPANET as laid out in its Digital Preservation Charter². It is of primary importance that disparate groups are given a mechanism through which to come together as best practices for digital preservation are established in each sector.

Aims

The principal aims of the study are to:

- build a picture of methods and match against context to produce best practices;
- accumulate and make accessible information about practices;
- identify issues for further research;
- enable cross-sectoral practice comparisons;
- enable the development of assessment tools;
- create material for training seminars and workshops; and,
- develop contacts.

Potential sectors have been selected to represent a wide scope of information production and digital preservation activity. Each sector may present a unique perspective on digital preservation. Organisational and sectoral requirements, awareness of digital preservation, resources available, and the nature of the digital object created place unique and specific demands on organisations. Each of the

² The Charter is ERPANET's statement on the principles of digital preservation. It has been drafted in order to achieve a concerted and co-ordinated effort in the area of digital preservation by all organisations and individuals that have an interest and share these concerns.

http://www.erpanet.org/www/content/documents/Digitalpreservationcharterv4_1.pdf

case studies is being balanced to ensure a range of institutional types, sizes, and locations.

The main areas of investigation included:

- perception and awareness of risk associated with information loss;
- understanding how digital preservation affects the organisation;
- identifying what actions have been taken to prevent data loss;
- the process of monitoring actions; and,
- mechanisms for determining future requirements.

Within each section, the questions were designed to bring organisational perceptions and practices into focus. Questions were aimed at understanding impressions held on digital preservation and the impact that it has had on the respective organisation, exploring the awareness in the sector of the issues and the importance that it was accorded, and how it affected organisational thinking. The participants were asked to describe, what in their views, were the main problems associated with digital preservation and what value information actually had in the sector. Through this the reasons for preserving information as well as the risks associated with not preserving it became clear.

The core of the questionnaire focused on the actions taken at corporate level and sectoral levels in order to uncover policies, strategies, and standards currently employed to tackle digital preservation concerns, including selection, preservation techniques, storage, access, and costs. Questions allowed participants to explore the future commitment from their organisation and sector to digital preservation activities, and where possible to relate their existing or planned activities to those being conducted in other organisations with which they might be familiar.

Three people within each organisation are targeted for each study. In reality this proved to be problematic. Even when organisations are identified and interviews timetabled, targets often withdrew just before we began the interview process. Some withdrew after seeing the data collection instrument, due in part to the time/effort involved, and others (we suspect) dropped out because they realised that the expertise was not available within their organisation to answer the questions. The perception of risks that might arise through contributing to these studies worried some organisations, particularly those from sectors where competitive advantage is imperative, or liability and litigation issues especially worrying. Non-disclosure agreements that stipulated that we would neither name an organisation nor disclose any information that would enable readers to identify them were used to reduce risks associated with contributing to this study. In some cases the risk was still deemed too great and organisations withdrew.

Chapter 3: Method of Working

Initial desk-based sectoral analysis provides ERPANET researchers with essential background knowledge. They then conduct the primary research by interview. In developing the interview instrument, the project directors and editors reviewed other projects that had used interviews to accumulate evidence on issues related to digital preservation. Among these the methodologies used in the Pittsburgh Project and InterPARES I for target selection and data collection were given special attention. The Pittsburgh approach was considered too narrow a focus and provided insufficient breadth to enable full sectoral comparisons. On the other hand, the InterPARES I data collection methodology proved much too detailed and lengthy, which we felt might become an obstacle at the point of interpretation of the data. Moreover, it focused closely on recordkeeping systems within organisations.

The ERPANET interview instrument takes account of the strengths and weaknesses from both, developing a more focused questionnaire designed to be targeted at a range of strategic points in the organisations under examination. The instrument³ was created to explore three main areas of enquiry within an organisation: awareness of digital preservation and the issues surrounding it; digital preservation strategies (both in planning and in practice); and future requirements within the organisation for this field. Within these three themes, distinct layers of questions elicit a detailed discovery of the state of the entire digital preservation process within participants' institutions. Drawing on the experience that the partners of ERPANET have in this method of research, another important detail has been introduced. Within organisations, three categories of employee were identified for interview: an Information Systems or Technology Manager, Business Manager, and Archivist / Records Manager. In practice, this usually involved two members of staff with knowledge of the organisation's digital preservation activities, and a high level manager who provided an overview of business and organisational issues. This methodology has allowed us to discover the extent of knowledge and practice in organisations, to understand the roles of responsibility and problem ownership, and to appreciate where the drive towards digital preservation is initiated within organisations.

The task of selecting the sectors for the case studies and of identifying the respective companies to be studied is incumbent upon the management board. They compiled a first list of sectors at the very beginning of the project. But sector and company selection is an ongoing process, and the list is regularly updated and complemented. The directors are assisted in this task by an advisory committee.⁴

³ See Appendix 1. We include the questionnaire to encourage comment and in the hope that other groups conducting similar research can use the ideas contained within it to foster comparability between different studies.

⁴ See www.erpanet.org for the composition of this committee.

Chapter 4: Introduction to Sector

By its size retail is a key economic sector for every national economy. It counts among the largest sectors both according to number of employees and number of establishments. Furthermore, retail is one of the business sectors most directly involved with the public. Assuring continued customer satisfaction and a good profit margin is a prime motivation for companies and to do this there is a demand for effective logistics and high company presence in the customers mind.

The retail sector has been a model example of economic globalisation during the last years. In order to optimise their costs and to gain market share away from saturated internal markets, many retail companies have searched to expand throughout Europe and the world. While some retail companies were successful in opening subsidiaries in other countries, others encountered difficulties that were due to local particularities or again to saturated markets. In such cases, the takeover of an already established company proved to be the most efficient way to extension.

Thus, a few companies are active all over Europe and even beyond, including Latin America and Asia⁵. The big players' activities are particularly important in Eastern Europe at this point of time, where they occupy significant market shares. Unfortunately, none of these wished to participate in the present study.

On another viewpoint, as alluded to above retail companies tend to occupy a very prominent role in their respective country of origin, which is more difficult to achieve in other countries. They usually belong to the best-known companies, while their sponsoring, advertising campaigns, and involvement with the population put them in a major public role. Take Switzerland as an example, where the wholesale retail leaders Migros and Coop are organised as cooperative societies with more than a million member households each that weekly receive their customer journals, while both companies play an active role in different fields of sponsoring.

⁵ To name but a few, France-based Carrefour has grown to be Europe's biggest and the world's second-largest retailer, pursuing activities in 30 countries under different brands. Other companies that are active throughout the continent include Delhaize, Leader-Price, and Géant.

Chapter 5: Details of Interviews

This study focused on food and wholesale retail, targeting large- and mid-scale companies. Depending on the country, small retail companies, sometimes belonging to central purchasing organisations, still play a considerable role. It has been assumed that these companies approach digital preservation in a very different way, given their size and budgets, and they have therefore been excluded from this study.

The choice of companies to be included attempted to reach equal coverage of Switzerland and the European Union, including the Candidate countries. Direct contacts were sought with 19 companies throughout the continent. Of these, eight declined participation, namely Spar International (Netherlands), Sklavenitis (Greece), Hakon-Gruppen (Norway), Globus (Czechia), Skala (Hungary), Delhaize (Belgium), Axfood (Sweden), and Swiss Internet retailer LeShop (which went out of business shortly after that). Six more companies did not give us a definitive response or did not respond at all to our call for participation, namely Carrefour (France), Sainsbury's (United Kingdom), Dia (Spain), Marinopoulos (Greece), Géant (Poland), and Leader Price (Poland).

A further attempt to gather contacts has been the newsletter of the retail sector at the Association of Records Managers America (ARMA). The responsible kindly agreed to publish a call, which, however, did not yield any responses.

The study thus encompasses five companies: Migros, Coop, and Loeb (all Switzerland), Kesko (Finland), and AB Vasilopoulos (Greece).

Migros (Switzerland)

<http://www.migros.ch/>

Migros is Switzerland's largest retail company, with sales totalling over 20 billion Swiss Francs in 2001. The company's stores range from small retail stores to supermarkets, as well as specialised stores, do-it-yourself stores, gas stations, and others, spread over the whole country, and totalling more than 1 million m² of shop surface. Migros is a cooperative society, consisting of 10 regional cooperatives and a central management. The visions of its founder, Gottlieb Duttweiler, a liberal mind engaging for a "social capital" and responsible governance, still animate the company. This can be seen from the commitment to ecological leadership, from its adult education centres, or from the "cultural percent": half a percent of the regional cooperatives' sales, and one percent of the central sales must be invested to foster culture and social relationships. In 2001, 120 million CHF have been spent to this goal, which makes Migros one of the most important players in the furtherance of Swiss culture.

The ERPANET Case Study gathered information at the central management level, where we talked with those responsible for economic politics, the head of documentation and information, the head of the audio-visual media archive, and an external consultant.

Coop (Switzerland)

<http://www.coop.ch/>

Coop has been number two in the Swiss retail business for many years. Not unlike Migros, it is also organised as a cooperative society (whose regional cooperatives have merged in 2001) and comprises small stores as well as supermarkets, department stores, gas stations, adult education centres, and others. Its annual sales exceed 13 billion CHF, while it operates 1600 stores with more than 50000 employees. Coop has been growing in recent years, at the same time sharpening its profile as leading ecological and fair trade retailer.

Coop's origins lie in the consumer cooperatives of the 19th century that merged into a national association in 1890. They originate in workers' self-help, as well as in philanthropic efforts. This accounts for the variety of activities, like education centres, banking services, tourist agencies, and so on, many of which are still part of Coop today. The Coop Journal is distributed weekly to 2.5 million households and thus is the most widespread journal of Switzerland.

ERPANET interviewed four people from the IT projects, central company archives, and the SAP business software support departments.

Loeb (Switzerland)

<http://www.loeb.ch/>

With Loeb AG we have chosen an important, family-run department store based in Bern to contrast the large, nationwide or multinational retail companies. The firm was founded by the Loeb brothers in 1881 in Bern, soon expanding to other Swiss cities. Loeb currently runs 11 subsidiaries in the canton of Bern and neighbouring cantons, and the main establishment in Bern is a city landmark, famous for its shop windows, and the best-known meeting point in the city centre. The Loeb group further encompasses a fashion store chain, as well as the local retailer for the Smart automobiles and a music store. In 2002 the Loeb Group totalled 210 million CHF in sales.

The company's CIO and the chief accountancy officer took part in the ERPANET interview.

Kesko (Finland)

<http://www.kesko.fi/>

Kesko came into existence as a merger of four regional wholesaling companies in October 1940. The company now encompasses divisions spanning a wide range of trade, from groceries to cars. It has spread its activity to Sweden and the Baltics. In 2002, Kesko employed more than 12,000 personnel and totalled 6.5 billion EUR in sales.

ERPANET talked to Kesko's Chief Information Officer.

AB Vasilopoulos (Greece)

<http://www.ab.gr/>

Greek retailer AB Vasilopoulos plc was founded in 1969 in Athens and since 1992 belongs to the Belgian company Delhaize. AB owns 104 shops throughout Greece, 93 of which are retail stores of different size (including the TROFO Super Markets), and 11 cash-and-carry stores. More than half of the shops and supermarkets concentrate in Greater Athens, while most of the rest are located in Southern and Middle Greece. Expanding their shops network over the whole country is one of AB's major aims. The company totalled 262 billion Drachmas (770 million EUR) of sales in 2001.

ERPANET was awarded a short interview to the company's CIO.

Chapter 6: Circumstances

Several experiences help explain the background of this report. First, the study met with limited interest at the companies we contacted. The research process lasted for several months and involved frequent attempts to find suitable contact persons. A number of companies declined to even answer repeated inquiries, or progress was jammed between the press office and the responsible departments. Where a formal denial of participation was expressed, this was mostly justified with lack of interest, of capacities and time limits, or with a general policy to avoid involvement in third-party research. Some companies declined participation because they do not have any digital preservation solutions in place, but were kind enough to briefly detail the reasons for this.

As experienced with previous case studies it is difficult to identify relevant contact persons. ERPANET was often directed to the IT department, and this proved to be a fairly useful starting point, since digital preservation is often mainly viewed as a technological problem. A broader view of the issue could be reached, however, with companies that have an archive as an independent department or with those where management were involved into digital preservation and agreed to take part in the study.

Finally, while ERPANET generally conducts telephone interviews to collect information, the companies involved preferred other methods. For Coop and Loeb it proved ideal to go through the questionnaire at an on-site visit, while Migros undertook to fill in the questionnaire in a joint effort of the different stakeholders of digital preservation. Only the short interviews with companies without digital preservation solutions have been conducted on the phone.

Chapter 7: Analysis

This section presents an analysis of the data collected during the case study. It is organised to mirror the sequence of topics in the questionnaire.

- Perception and Awareness of Digital Preservation
- Preservation Activity
- Compliance Monitoring
- Digital Preservation Costs
- Future Outlook

Perception and Awareness of Digital Preservation

All companies contacted in the course of this case study are aware of digital preservation and at least partly recognise its importance, with some departments (legal, accounting, audiovisual archive) being more sensitive to the issue. Opinions differed about how urgent a matter it is: most business data need to be legally retained for comparatively short periods. As a result, the organisations contacted here do not feel that digital preservation is a key issue, and some of them do not even envisage implementing specific digital preservation solutions at all.

While most of the interviewed companies in fact have solutions in place, two exceptions are encountered. AB Vasilopoulos stated that, although they are aware of digital preservation and its implications, they do not see any need for the time being to develop and implement a digital preservation solution. Currently, it is rather a wish than a must-have, and has not been accorded high priority. However, this is likely to change should changes in national legislation require a different approach. Also, the company plans to embark on a digitisation programme and expects to address digital preservation concerns in this framework. In a similar vein, Finnish retail company Kesko declared that for the time being there are no major risks involved if digital preservation is not given first priority.

Asset Value and Risk Exposure

There are very diverse categories of data in the retail sector, but there is nothing unexpected or very particular. Data to be preserved digitally includes accounting and legal data, marketing and communications records, textual and audio-visual data. There are no digital data that are very characteristic for the retail sector, even if it is clear that sales transactions data play an important role. These form the basis for accounting and analysis. Legal requirements determine their retention, while the main value besides this is the business value they may have: through data mining, value can be added to sales transaction and customer data, allowing for market analysis, targeted advertising, and others⁶. No data need to be retained beyond the legally binding retention times (usually 10 years), and there is no major risk involved in these data.

⁶ A short overview on data mining is provided by the Wikipedia at http://en.wikipedia.org/wiki/Data_mining. The interviewees did not expand on data mining and data trading.

An interesting point stems from the above-mentioned fact that retail companies tend to be very present throughout a city, region, or country, playing an important public role. Where companies actively foster this role (as is the case in Switzerland), this can lead to their advertising efforts and corporate image acquiring cultural and historical value as part of the national heritage. Companies like Migros who use this public role for their corporate imaging are ready to expend digital preservation efforts on these materials, including posters and audio-visual materials, recognising their historical, marketing, and corporate identity value.

Preservation Activity

Policies and Strategies

Digital preservation is for the most part approached in a systematic way. Companies without a proper digital preservation solution in place reported that they assessed the risks involved and considered the prioritisation of digital preservation. Here it is usually the information technology department that is in charge of the matter, and it is therefore this department's resources, both financial and personal, that contribute to the prioritisation decision regarding to digital preservation. On the other hand, companies that already approach the problem usually have policies at different levels of detail. This chapter focuses on the responsibilities for digital preservation, on the policies in place, and on the sources for advice.

Usually, responsibilities for digital preservation seem to rest with different departments within a single company. Large companies with their own corporate archive (or even a number of archives) put most of the responsibility onto this department. As a general rule, IT is always involved as well, sometimes in close connection with accountancy. The concept of all-in-one solutions with a centralised responsibility has not been encountered among the analysed companies. However, Coop is now trying to overcome this diversity. Up to now, the company's central corporate archives has been responsible for archiving management level records and those of certain other departments, while the remaining departments have taken care of their own archiving needs, and all business data from the SAP business suite have been archived by the responsible IT support. The company-wide archiving project that Coop is now beginning will undertake a survey of the company's records and documents, which will finally lead to centralised archiving.

At large, companies with distributed responsibility for digital preservation state that the delimitation and distribution of responsibilities is well defined, but acknowledge that central preservation institutions like the corporate archives are unaware of the preservation policies of smaller or less important business units.

Each company follows a policy with a slightly different stance. Take as an example the "MGB-Archivkonzept", the preservation policy for Migros central management. This has been developed in cooperation with state archives and external consultancy and advised by the Swiss Archivists Association⁷, while at the organisation's interior different levels of staff and task forces were involved. The policy is based on a requirements analysis and is being applied throughout the organisation. A reorganisation of the corporate archives goes hand in hand with this process. A special strategy for the digitisation of audio-visual media resulted from the process,

⁷ VSA-ASA. <http://www.staluzern.ch/vsa/>.

and Migros is expecting to update and renew their preservation policy after 5 to 10 years.

Coop follows a different strategy. While relevant business data are archived with the aid of IXOS, the dedicated SAP archiving tool⁸, digital preservation at the central corporate archives follows a very concise archiving policy. Materials are selected for digitisation following a few basic rules, and digitised documents and records are preserved indefinitely. This facilitates the handling of the digital archive, allowing the archives personnel to avoid sophisticated retention schedules. However, it is acknowledged that this solution, in place for a few years now, may need to be changed over the years.

All these policies are treated as internal documents, and no detailed information is disclosed.

All companies acknowledged that they employed external support for the development of their digital preservation policies. As has been alluded to above this could either come from archival institutions such as state archives or archival associations, or from consultants. Especially mentioned was the assistance offered by software vendors. This assistance even included legal advice to help comply with legal requirements.

Selection

The preservation policies in place in the companies to a certain extent also provide for appraisal and selection. Thus a simple form of prospective appraisal is in place, insofar as appraisal decisions are made from the outset and for a records schedule as a whole. Appraisal is heavily influenced by legal requirements on the one hand and capacity on the other hand; some companies stated that they intend to preserve further digital information in the future, while others acknowledge that they still need to refine their selection policies.

The appraisal and selection policies and retention schedules are classified as internal documents and have not been available to ERPANET. However, it has become clear that they provide for easily implementable selection rules and that responsibilities for preservation are well stated.

Preservation

Due to the limited scope of digital preservation in the participating companies it is difficult to identify best practices. However, some remarks can be made:

The use of standard formats is generally acknowledged to be a basic strategy. While some companies stick to basic, open formats such as ASCII text or TIFF (for digitised images including bills and contracts), others use quasi-standard formats such as PDF or the JPEG format for pictures⁹.

⁸ For the SAP business suite see <http://www.sap.com/>, for the IXOS archiving tool see <http://www.ixos.com/>.

⁹ ASCII: American Standard Code for Information Interchange. TIFF: Tagged Image File Format. PDF: Portable Document Format, <http://partners.adobe.com/asn/tech/pdf/specifications.jsp>. Some shortcomings of the PDF

Data are stored on optical and magnetical media, including CD-ROM, DVD, WORM (Write Once Read Many) disks, and DAT (Digital Audio Tape). Reasons for the choice of media are mainly cost and capacity: thus a company using WORM disks told us that this is viewed as a more compact solution compared to CD-ROMs due to their higher capacity. When asked about refreshing strategies companies gave different answers, depending on their view of long-term preservation: while for companies who merely need to meet the legal requirements refreshing is no real issue, those who acknowledge the historical value of their information assets and commit themselves to preservation for decades have to address the refreshing problem. Given the novelty of the problem and the respective approaches, no standard practice or refreshing policy is in place yet. One company told us that they intend to migrate their digital information every 5 to 10 years; but again, no standard practice has been established so far.

All of the companies concerned rely on redundancy for data storage. This includes a backup copy of the data stored at a different location. Additionally, there exist particular storage areas for preserved digital information, such as archival vaults for WORMs no longer active in jukeboxes.

As for metadata, their use and details vary according to the complexity of data. Most companies, however, accorded little importance to metadata, with a small set of access keys sometimes being the only kind of metadata in use. Migros specified that they use the International Standard Bibliographic Description for Electronic Resources (ISBD[ER])¹⁰ standard to record metadata, providing a set of 23 metadata entries.

Access

Access regulations are very much linked to the usage control of active data. Access is generally restricted to persons responsible for data. By this way, issues like copyright, privacy, and security seem to be under control. Depending on the archiving method this is controlled by the very system that manages the active data as well or by the digital archives' automatic rights management. The Coop archivist, while acknowledging the possibilities offered by current systems to manage very detailed access privileges, argued in favour of defining a restricted number of access groups to facilitate access management and to prevent possible access violations. General access policies independent from the respective systems, however, are not in place at the participating organisations.

Compliance Monitoring

According to the interviews conducted for this study, there are no practices for monitoring preservation policies specifically in place. However, this does not mean

format are expected to be addressed by the forthcoming PDF/A standard, complementing it with archival elements. See http://www.aiim.org/pdf_a/ for details. JPEG: Joint Picture Expert Group, <http://www.jpeg.org/>; JPEG is based on a lossy compression algorithm and for this reason cannot be considered a preservation format. For graphic file formats see the Technical Advisory Service for Images' File Format and Compression page, <http://www.tasi.ac.uk/advice/creating/format.html>, as well as Murray, J.D.; van Ryper, W.: Encyclopedia of graphics file formats. 2nd ed. Sebastopol Calif.: O'Reilly & Ass., 1996. ISBN 1-56592-161-5.

¹⁰ See <http://www.ifla.org/VII/s13/pubs/isbd.htm>.

that no monitoring is done. This is generally part of corporate-wide audit, if it does not fall into the responsibility of the concerned departments themselves.

Digital Preservation Costs

As a result of this study, it seems that the cost issue is judged very differently among the retail companies involved. While companies that do not have any solution in place refer to the potentially high costs the implementation of a solution would cause, others seem to estimate the digital preservation costs as negligible. For them, cost benefit analyses do not seem to be a prerequisite for implementing their current solution. Rather, digital preservation costs are covered by the normal archive and IT budgets. Since they are often interwoven with the regular budgets of various departments, it is even difficult to give a clear number of preservation costs. Their dimension can be different, according to the size of the company. It is evident that major investments in storage technology and software are costly; but companies that did undertake such investments stated that this was no decisive factor and that indeed these costs are very small when set against the IT budget as a whole. Some companies thought it not even possible to detail digital preservation costs, while agreeing on the fact that these are somewhat negligible.

It can be concluded that the organisational and conceptual effort to approach digital preservation and the possible initial investments may seem daunting, while the ongoing costs of digital preservation are marginal, once a preservation policy is designed, approved, and implemented. This no doubt depends on the nature of the digital data to preserve and on the benefits and risks involved. Since in the retail sector neither very specific data nor any major risks are encountered, digital preservation solutions do not need a high degree of sophistication.

It therefore becomes clear that assistance for digital preservation needs to focus on policy building, while the low financial commitment for the long term should be highlighted. It may be advisable to adopt the practice of companies such as Coop and Migros that addressed the question in a broader context with the assistance of external bodies – either when working out their archival concept or in the course of similar projects like reorganisation of the corporate archives.

Future Outlook

The companies involved in the case study generally declared themselves satisfied about their present solutions and confident that these will meet the requirements at least for the medium term. When asked about what further issues should be addressed, companies were nevertheless able to name some desirables.

On one hand there is a certain need to expand the scope of the present solutions. Several organisations expect to preserve more data and additional data types digitally in the future. This may be triggered by important suppliers that are planning to deliver their transaction data digitally in the future, as Loeb stated. Additional data mentioned include the data inside the company's document management system, the workflow, and all the incoming postal mail. On the other hand, interviewees pointed to certain flaws in current functionalities. In this context, access issues have been prominently named. They are sometimes not resolved to the personnel's satisfaction, and improvements in the finding aids and access technologies are a desideratum.

Besides that it is clear that current systems need to be scaled to meet future need, and will also need to be adjusted and supplemented on an ongoing basis.

Chapter 8: Conclusions

This study's results can be summarised as follows:

Retail companies are aware of digital preservation, but without attributing it a high priority. This explains differences in the interviewed companies reaching from no digital preservation solution at all to some well-implemented solutions in place. Digital preservation can lie in the responsibility of different business units within retail companies. Corporate archives often play an important role, but the IT department is always involved as well, often in a leading role.

There are no data specific to the retail business that would demand enhanced attention for long-term preservation. The digital information that is subject to preservation includes transaction and sales data together with usual business data.

Retail companies have not developed their own, original preservation solutions. While some of them do have their preservation policies in place, the technical solutions they adopt are known ones, ranging from strategies like migration to standard formats to fully implemented solutions for parts of their business. It has become evident that offers by important technology suppliers meet the retail companies' needs fairly well.

Most companies that took part in this study pay little attention to metadata. They might enhance the effectiveness of their preservation approaches by exploiting the benefits of metadata.

The most important parts of the implementation of a digital preservation solution are the initial steps, namely setting up a policy and investing in the hard- and software needed. However, digital preservation costs do not reach very high values and are estimated to be bearable. To know this might help raise awareness among reluctant companies to undertake efforts towards digital preservation.

Appendix 1: Resources

Besides the information gathered at the interviews and information exchanges with companies, the main source for this study was the Internet. Companies' websites provided useful background. Some further insights were gained at information portals for the retail sector (like <http://www.ukbusinesspark.co.uk/bpreta.htm> or <http://www.theretailbulletin.com/>).

Appendix 2: Interview Instrument

ERPANET Case Study

Administrative Section

Interview Details

Organisation Details

Disclosure/Privacy Information

Tracking of Activities



Perception and Awareness of Digital Preservation

We would like to begin by asking you a few questions about your general impressions of digital preservation, and the impact that it has on the retail sector. We will use the term 'digital information' throughout to refer to all forms of digital data, records and information.

1. Is there a general awareness in the retail sector that the long-term preservation (more than five years) of digital information is an important issue?
2. To what extent does the sector recognise the importance of preserving digital information in the long-term?
3. What are the main problems associated with digital preservation in the retail sector?
4. From what sources have you heard about the issues surrounding digital preservation?
5. What values does digital information have in the retail sector beyond the original purposes for which it was created?

Understanding How Digital Preservation Affects Your Organisation

We would like to focus on how some of these digital preservation issues affect your own organisation

6. What type of information is digitally preserved in the short and the long term in your organisation?
7. What are the reasons that digital information is preserved in your organisation:
 - Legal requirements
 - Financial requirements
 - Business requirements (e.g. document important decisions and activities)
 - Historical value
 - Other (Please specify)
8. What risks is your organisation under if digital information is not preserved in the long-term?
 - Legal risks
 - Financial risks
 - Business risks
 - Historical value
 - Other (Please specify)
9. Has the organisation conducted a risk analysis and/or business needs analysis with regard to the preservation of information? If yes, can you indicate the main results?

Actions Taken: Policies, Strategies, Standards and Practices Developed

The questions in this section aim to explore some of the actions that the organisation has undertaken to deal with the preservation of electronic records. It will examine the above as well as selection, preservation, storage, and access activities.

Policies, Strategies, and Standards

10. Is there any collaborative effort across the retail sector to tackle common digital preservation issues?
- Conferences
 - Newsletters
 - Journals
 - Common Institutions
 - Collaborative Projects
 - Other (Please specify)
11. Has your organisation attempted to find information external to the sector regarding preservation?
- If yes, please indicate the sources
- Government agencies
 - Higher education institutions
 - Archives
 - Libraries
 - Museums
 - IT Specialists
 - Other (Please specify)

Please specify the kind of information provided and how useful it proved to be.

12. Do you cooperate with other institutions in the research and development of policies, strategies, and standards? In what way?
13. How useful is this common effort in applying it to your organisation's own needs?
14. Do you have any specific organisational policies that relate to the preservation of information?
15. Who (and what) was/is involved in the creation of these policies?
- Management
 - Employees
 - Special task force in the organisation
 - Results of internal analyses (e.g. risk analysis)
 - External sources, models, advice
 - Other (Please specify)
16. Do these policies apply across the entire organisation?
17. How are these policies implemented?
18. Has your organisation developed preservation strategies, standards, and practices and implemented them?
- Yes
 - No
- If YES, Please specify.

19. How were they introduced and implemented (e.g. by department, with training)?

20. How, and under whose responsibility have these been established?
- External Advice/Sources/Models

- Survey of information resources
- In-house solutions developed
- Other (Please specify)

21. How often are your preservation policies and strategies updated and renewed?

Selection of Digital Information for Preservation

22. Do you have a selection policy, or classification and retention policy that determines what information in your organisation is to be preserved?

- Yes
- No

If YES, Please specify.

23. Is your classification and retention schedule linked and implemented across the organisation?

24. Who is responsible for the maintenance and implementation of these schedules?

25. How do you ensure that selected information is complete, accurate and identifiable?

Preservation of Digital Information

26. Does your organisation take care of its preservation activities itself, or are these outsourced?

- Outsourced
- In-house

If outsourced, what reasons were behind this decision, and who carries out the preservation activities?

27. Are there specific individuals in your organisation responsible for the preservation of digital information?

28. What positions do these people hold in the organisation, and what are their responsibilities and competencies?

29. What type of training or advice is available for them?

30. Is your organisation aware of any external standards, best practices, and guidelines available on preservation?

- Yes
- No

If YES, Please specify.

31. Are these specific to your sector?

32. Where did you learn about them? Please specify your sources.

33. Which of these standards, practices and guidelines do you use?

34. What technologies do you use for preservation? For the following list of current techniques, please specify which ones you use and for what kind of information.

Technique	Specify Type/Technology Used	Information Preserved
Print to Paper		

Scanning		
Save on Disk		
Save on Other Media		
Emulation		
Migration		
Microfilm/Microfiche		
Other		

35. On what grounds were these techniques chosen? Please specify your answers.

- External Advice
- Trials and Evaluations
- Recommendations
- Intra-sectoral standards available
- Other

Please provide as much information as possible about why these decisions were taken.

36. What data formats do you use for preservation?

- Standard data formats
- Others

Please specify for both answers

37. Do you convert the information to be preserved into other data formats for technical (or other) reasons?

38. What metadata do you use to describe both your digital information and the processes of storage and preservation? Does it follow any standards available (Dublin Core or others)? Can you provide a copy of the metadata set?

39. Is the collection and production of metadata automated?

40. Who is responsible for the transfer of information into long-term storage?

41. How often (if undertaken) does digital information migrated or refreshed?

Storage of Digital Information

42. Do you have a particular storage area for digital information to be preserved?

- Yes
- No

If Yes, how is this organised and equipped?

43. Do you keep redundant copies of the digital information to be preserved for safety (or other reasons)?

Access to Digital Information

44. How is information protected from inadvertent or unauthorised access and manipulation?

45. Does your preservation solution allow direct access to the digital information stored (i.e. are they stored in an executable format)? If no, how is the access provided?

46. What access issues does your organisation face?

- a. Copyright

- b. Privacy Issues
- c. Access Security and Privileges
- d. Others (Please specify)

47. How does your organisation intend to provide access to digital information into the future?

Digital Preservation Costs

48. Did your organisation attempt to undertake a cost benefit analysis concerning its investments in preservation?
49. Has this analysis been assessed in light of your actual preservation activities? Did it prove to be accurate?
50. To which section of the budget are the economic resources for your preservation programme allocated?
51. What percentage of the organisation's budget is spent on preservation? Can you compare that to some other area of the organisation's activity?
52. Is the organisation attempting to address amortisation issues in the preservation budget?
53. Are there available sources of funding within the retail sector allocated for digital preservation issues?
- Yes
 - No
- If Yes, please specify
54. Are you satisfied with these cross-sector services?
55. If no, what would you like to see available? [i.e. what would you think could best be solved in common in your sector?] Would you be willing to engage financially in such information?
56. Are there other external sources available for digital preservation activities, (e.g. government grants, cross-sector funds)?
- Yes
 - No
- If Yes, please specify

Monitoring of Actions

After having identified what has been undertaken in your organisation with regard to preservation activities, we would like to find out about how these efforts have been monitored.

57. Is the preservation process audited on a regular basis?
58. Is compliance to policies, standards, and strategies audited on a regular basis?
59. Is compliance to other requirements (legal, business etc.) audited on a regular basis?
60. How often are checks made to the preserved material, (e.g. for signs of deterioration)?
61. Please specify the criteria used for these audits.

62. Who performs these audits? (e.g. Internal/External)

Future Requirements

We would like to ask about the areas in which there is a need for additional attention in your organisation and the sector as a whole.

63. How long do you predict that your current preservation policies, strategies, and solutions will meet your organisation's preservation needs?
64. Is the amount of money allocated for preservation going to change in the future? Will it need to be changed?
65. If more funds were available, what could/would they be used for?
66. What conclusions has your organisation come to about its preservation efforts? Are these satisfactory?
67. What preservation efforts are remaining to be addressed within your organisation?
- Further data to be preserved
 - Revision and adjustment of preservation policies and strategies
 - Additional resources dedicated to preservation
 - Technological solutions
 - Other (Please specify)
68. Would you like to see more cross-sectoral or intra-sectoral activity with regard to preservation?
69. Are there any other areas in which you would like to have more information made available on digital information? Where do you expect this information to come from?

Thank you very much for your valuable contribution.

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