



Information Society
Technologies

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a european
banking house

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ERPANET – Electronic Resource Preservation and Access Network – is an activity funded by the European Commission under its IST programme (IST-2001-3.1.2). The Swiss Federal Government provides additional funding.

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>).

ISSN 1741-8682
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Executive Summary

This study documents the state of digital preservation at a major European banking house. Its key features are a strict compliance to the legal rules and efficient access to the preserved documents through the company's intranet. A small but effective records management unit is responsible for maintaining two different preservation systems: an electronic document management system for some 70 million digitised documents, such as contracts and customer documents; and a record-keeping system that archives all transactions. Most documents and records are being kept for the compulsory period of ten years.

The company is currently working on a new directive for records management that would unify the previous ones, which were separate for paper and digital records. The solutions that are in place are recognised to meet the needs as regards performance, quality, and security. However, the costs involved are deemed rather high, and cost optimisations are one of the tasks that lie ahead.

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 Charter.² 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 www.erpanet.org. We have posted 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: The Company

ERPANET approached a major European banking house to take part in a focused case study on its digital preservation activity. Following internal consultation and discussion at both institutions it was agreed that interviews be conducted and a report produced, but that the name and additional identifying details of the banking house be withheld. Consequently, this report uses “the company” or “the bank” to design the banking house involved.

Chapter 5: Circumstances of Interviews

Contacts have been established to the company’s records management unit. The interviews took place on September 1, 2003. The interviewees included the head of the records management unit, the responsible for standards and policies, the responsible for projects, and a specialist for the digital archive.

Chapter 6: 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

Two years ago the bank established a records management (RM) unit. This grew out of the conviction that records management is a key component for successful business organisation, but also of some problems caused by flaws in records management beforehand. The new unit is now responsible for all records management issues through all business units in the bank's country of residence, covering the whole life-cycle of business documents and records. It also assumes a policy-making role inside the company. Since the unit is very young, it is still in development, and organisational changes can be expected.

As becomes clear from the above, awareness of the need for good records management is high throughout the company. Equally high is the awareness of digital preservation. As will be detailed below, the company's electronic document management system is heavily used on a daily basis by a large number of staff. This accounts for the acknowledgement of the system by staff.

Senior management is not only aware of the importance of digital preservation, but also commits financially and organisationally to this task, especially with the institution of the records management unit. However, financial questions always play a role, and justification of the money spent for digital preservation is key.

Asset Value and Risk Exposure

The RM unit administers two different systems. The first one is the "Transaction Archive", the archiving system for business transactions. This archives all transactions on all accounts the bank manages. The law stipulates their preservation for ten years after the end of the business year in which the transaction took place.

The second system is the "Electronic Archive", actually an Electronic Document Management System (EDMS), comprising around 70 million digitised documents and serving both as a filing system and as an archive for the legally stipulated preservation period of 10 years.⁵ Among these documents the customer contracts play a prominent role. These are made available company-wide at the front offices. The system enables consultants and other front office staff to have instant access to these documents, with response times ranging between 1 to 2 seconds. Up to now, the paper originals have been kept in addition to the EDMS for legal reasons. They have not been filed, but are uniquely stored in a centralised archival vault, sorted by scanning date, from where they can be retrieved with the aid of the EDMS. With the

⁵ For customer contracts, this means 10 years after the closure of the account.

recent change in national legislation that accepts digital versions as legal ones, this paper archive is planned to be dissolved, saving the company considerable costs for shelf space and administration.

In addition a separate system is in place for the company's basic documents like statutes and governing board minutes. These have to be preserved for the whole lifetime of the company. Besides being kept in a paper version, they are also digitised and preserved digitally. While currently these are on a dedicated system and platform, they will shortly be transferred to the same platform as the EDMS.

Different levels of training are available for these systems. All staff follow an initial user training for the EDMS, and there is additional ad-hoc training for those who require it because of their work tasks. As for the Transaction Archive, training is mainly limited to archival staff and those employees who ingest data into the archive.

It has become clear from the above that the main values of these information assets are of business and legal character. To fulfil the legal requirements the company has to guarantee authentic archiving. Many of today's business processes would be much more complicated without the EDMS; in particular it greatly facilitates work for front office staff. It is acknowledged that the systems in place assist the company in keeping its corporate history, but this alone would not have warranted the investments into the systems.

Regulatory Environment

As mentioned previously, the National Code of Law prescribes a retention time of 10 years for business data. These include transaction data and others. Company-relevant documents like statutes and board minutes have to be kept for all the company's lifetime.

Preservation Activity

Policies and Strategies

The bank currently has several company-wide directives for records management and archiving. They are in the form of guidelines and have to be implemented by the business units themselves. Currently a new directive is being worked upon that encompasses both traditional and digital records. It will address the necessity and basics of records management, the responsibilities involved, and list the different types of documents and their retention orders. At the time of the interviews this new directive had been passed out to the front offices for comments and consultation. Once this is definitive the RM unit plans to seek endorsement from upper management, ideally having the CEO's formal approval.

So far, the main problem in seeking acceptance for this directive seems to be the high effort involved in the pre-archival part of preservation, i.e. record-keeping itself. While this poses no problems for the customer files, interviewees reported that staff have some more trouble to match this effort against the benefits of record-keeping when it comes to administration files.

Furthermore, the responsible for the EDMS have decided to adopt the ISO 9001/2000 quality management standard for its electronic archive, but this is not certified, because the cost-benefit-analysis was not satisfactory.⁶

Preservation and record-keeping activities are essentially an in-house task. There is very little informal collaboration with external bodies. Questions about records management have been discussed in banking associations, but this has hardly influenced the company's work on records management.

Selection

The selection of material for preservation has been outlined, led by the RM unit. In fact, the directives for records management comprise a list of document types, with the respective responsibilities for preservation and retention prescriptions. The company's file plan is hierarchically structured and arranged according to the tasks company-wide.

As for the disposal of documents after their retention period has expired, this still has to be implemented. Since both systems are younger than the legally prescribed retention period of ten years, the disposal procedures have not been a top priority for implementation up to now. However, they are being worked on.

Preservation

All preservation work is being done in-house. Different products, and methods, are used.

The EDMS is preserved using the commercial software product IXOS.⁷ The bank had been involved in the development of this product before it became a commercial solution, and it is heavily adapted to their needs. The file format for the scanned images is the Tagged Image File Format (TIFF)⁸, and they are stored on WORM⁹ disks. An index is kept in an Oracle database.

The record-keeping system is running on the IBM application abacus. This is archived with the aid of the IBM on-demand application (based on the DB/2 database system). Support for this archiving system is outsourced to an external firm, but all facilities, computers, and storage systems are based at the bank's own premises.

These archiving solutions meet the legal requirements of accessibility through ten years.

Access

As mentioned previously, access is a key feature of the bank's digital preservation systems. Very short response times for enquiries company-wide are a decisive criterion for the RM unit. Access to archived documents in the EDMS is controlled through standard procedures. Access rights are defined according to employees' tasks, competencies, and responsibilities. Data security measures follow the most current requirements of IT security.

⁶ For the ISO 9001/2000 standard please refer to <http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=21823&ICS1=3&ICS2=120&ICS3=10>.

⁷ <http://www.ixos.com>.

⁸ Tagged Image File Format, Adobe. For the TIFF specification see <http://partners.adobe.com/asn/tech/tiff/specification.jsp>.

⁹ Write Once Read Many; see <http://en.wikipedia.org/wiki/WORM> for more information.

Descriptive metadata for enabling access are recorded in both systems. The bank does not follow any standards for data description, but rather develops its own set of metadata, according to business needs, and continues to develop it. This is an ongoing process that is fed back by experience.

Compliance Monitoring

Compliance to different standards and requirements is monitored regularly. These include prominently the ISO quality management standard 9001/2000. Performance results, such as error rate or access speed, are published on the company's intranet to foster transparency and direct comparison.

Internal audit is focused on systems and processes in the IT field. External audit is performed by the national banking supervisory authority, as well as an auditing firm. One of their focuses is the archival systems in a very detailed manner.

Digital Preservation Costs

There have been several assessments that led to and accompanied the implementation of digital preservation solutions. While extending on different aspects they focused among others on costs and access.

The preservation budget is attributed to the Archiving department, to which the Records management unit belongs, with the exception of the IT systems in use that are part of the company's IT budget. The unit then has concluded a service level agreement with its internal customers, i.e. the front offices. The preservation costs are thus broken down on the users, according to the amount of transactions they use. Therefore the bank ascertains that the units who benefit from the digital preservation and EDMS systems also participate in the costs. On the other hand this arrangement puts constant pressure on RM to optimise costs, since these have to be taken over directly by the users.

Future outlook

The team is currently working mainly on optimising its products. Cost issues are viewed as the most pressing point. On the other hand, as regards preservation little remains to be done at the moment on the quality side. Improving transparency is one of the key issues. Also, the records management system will need to be made more user-friendly, as it is viewed to be rather technical and requiring much specialist knowledge. Since access is key it should be optimised still further.

Following a huge effort during the last five years, the company's current state of digital preservation is viewed as very satisfactory. This also holds true compared with other financial institutions. The performance, access times, and quality are very good, but the costs are deemed too high. It is there that future work is urgently needed. As for security concerns, no urgent issues need to be addressed right now.

Chapter 7: Conclusions

A first conclusion of this study confirms an insight gained through other ERPANET case studies as well: the best and most efficient driver for any digital preservation solutions is need, as a consequence of legal pressure. While archivists and records managers at previously examined institutions acknowledged that decisive steps towards implementing a digital preservation solution might be postponed until their importance was publicly recognised through some loss or problem, interviewees at the bank in question stated that previous problems with records management led to the engagement and investment that is now in place. Also, the heavily digital-based business processes enhance the necessity for reliable digital preservation.

Policies and policy-like documents are key drivers of any digital preservation programme.¹⁰ The bank uses directives with a relatively low level of detail, but with exact specifications about responsibilities and retention schedules. While up to now separate directives have guided the preservation of conventional and digital records, the RM unit is now in the process of merging these to a general directive. Experience up to now suggests that addressing digital records separately before attempting to reach a common guideline for all kinds of records may be the most promising way. Compare this to the practice in other organisations, where with the arrival of digital records existing policies have been extended explicitly on all kinds of records, but where appropriate measures to cater for these records often lack.¹¹

Clearly defined responsibilities are one of the cornerstones of the bank's approach to digital preservation. Having a central unit responsible of records management throughout the company seems to pay out.

Costs have been revealed as a major issue. While the need and rationale for digital preservation are hardly contested, the high cost this involves causes frequent discussion. The solution the bank applies, namely breaking down the costs for records management onto the end users, is innovative, but accounts for a close scrutiny of digital preservation costs: users are directly made aware of what their preservation needs cost. It should be reminded, however, that the costs for preservation are hardly separable from those for access, and therefore both must be assessed together.

Finally, the formats used for preservation, such as TIFF, need to be constantly monitored. Should they get into danger of becoming obsolete, migration strategies will have to be envisaged.

¹⁰ See the erpaTraining Seminar "Policies for Digital Preservation", Fontainebleau (France), 29 and 30 January 2003. The seminar report is available at http://www.erpanet.org/www/products/Paris/ERPAttraining-Paris_Report.pdf.

¹¹ See, e.g., the ERPANET Case Study on the Council of Europe http://www.erpanet.org/php/studies/docs/erpaStudy_fcsCOE_final.pdf.

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