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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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Executive Summary

The Records Management and Archives of the World Intellectual Property Organisation (WIPO) are currently undergoing a major transformation. Until as recently as 2001 the organisation did not have an archives program and had not comprehensively implemented records management. In a general move towards digital information processes, senior management decided to look more closely at the organisation's information assets. An external consultancy proposed an archives policy and identified a series of action points that are now being implemented.

Two key features of these points, an archives and records management service and policies for records management and archiving, have been created. Currently, the service is introducing an integrated Electronic Document Management System (EDMS). This system also provides for records management and archiving functions. For preservation purposes, documents and records are being converted to XML. While the introduction of the EDMS does not follow any strict timeframe, several departments and units have recently expressed their need for better records management. This need is currently the major driving force for progress in records management and digital preservation at WIPO.

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,

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.erpamet.org/www/content/documents/Digitalpreservationcharterv4_1.pdf.

awareness of digital preservation, resources available, and the nature of the digital object created place unique and specific demands on organisations. Each of the 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 <http://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 <http://www.erpanet.org> for the composition of this committee.

Chapter 4: The World Intellectual Property Organization (WIPO)

Awareness of the importance of intellectual property and its protection grew in the second half of the 19th century. Two international conventions first tried to help people obtain protection of their intellectual creation in other countries: the Paris Convention for the Protection of Industrial Property, adopted in 1883, focusing on patents, trademarks, and industrial design; and the 1886 Berne Convention for the Protection of Literary and Artistic Works, focusing on copyright for art works. The two bureaux established through these conventions merged in 1893 to become the United International Bureau for the Protection of Intellectual Property (BIRPI), taking seat in Berne.

In 1960 BIRPI moved to Geneva to be closer to the international organisations residing there. In 1970, the organisation was renamed the World Intellectual Property Organization (WIPO), and four years later became a specialised agency of the United Nations system of organisations. The organisation's current headquarters are in and around the 1978 WIPO building in Geneva.

In addition to the Paris and Berne Convention the WIPO today administers 21 other international treaties. It is active in the development and harmonisation of international intellectual property law. Notably, through the Patent Cooperation Treaty (PCT)⁵, WIPO offers the possibility of filing one international patent application to obtain protection for a patent, trademark, appellation of origin, or copyright in more than one country or even worldwide. The organisation first examines the application based on patent criteria (i.e. is it innovative? Are there market perspectives?), then moves into the national phase whereby it passes the application on to the national patent offices concerned. Finally, WIPO communicates the result of the application to the applicant. This whole process takes around five years.⁶

⁵ On the PCT see <http://www.wipo.int/pct/en/index.html>.

⁶ The international intellectual property systems is organised on three levels, from national patent offices as the lowest level through regional agencies such as the European Patent Office (EPO) to WIPO. For more details on this see also the ERPANET case study on the EPO.

Chapter 5: Circumstances of the interviews

ERPANET established contact with Mr Milovan Mistic, head of Records Management and Archives, and Project Manager, EDMS. It was agreed that two interviews would be conducted, both prior to and after the introduction of the EDMS. Mr Mistic kindly invited the ERPANET researcher to the WIPO headquarters for conducting the interviews. Consequently, a first interview of four hours was conducted on 8 October 2003, focusing on an introduction to WIPO's current plans concerning digital preservation and electronic document management. A second interview of three hours took place on 25 March 2004 and was dedicated to assess the first experiences with the EDMS and to fill in some gaps.

In addition, parts of the consultancy report on records management and archives at WIPO (see below chapter 6) were made available to ERPANET.

ERPANET would like to thank Mr Mistic for his very valuable assistance.

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

Some years ago, there was no awareness of digital preservation at all at WIPO. Even more, no proper archiving and records management was in place. Responsibility for preserving corporate records lay with the chancellery. However, this involved neither a filing plan nor retention schedules. Rather, filing and retrieval procedures were the duty of the chancellery staff and were very labour intensive. The submission of records to be archived was regulated in a guideline, but this was not enforced, and consequently, the archives were very fragmentary. In addition to that, large parts of the chancellery's work were based on implicit knowledge of staff there.

WIPO senior management declared the move of internal business management and especially of patent applications management into the digital realm a major goal. In consequence, records management was given more consideration. In line with this strategic orientation a consultancy report was commissioned in 2001 to assess WIPO records management and archives needs and to propose the steps necessary for managing the information assets appropriately. This report has recommended building blocks for policies and a set of best practices, as well as a three-year action plan to guide the necessary measures.⁷ This plan spans the years of 2002 to 2004 and is currently being implemented.

The first action items that have been carried out are of an organisational and policy-building character. A Records Management and Archives service has been put in place at WIPO. This comprises 13 staff members and is part of the Conference, Communications & Records Management Division of WIPO's Administrative Support Services & External Relations Department.⁸ By hiring Mr Misic as head of this service, WIPO engaged a specialist with experience in digital preservation, thus bringing subject knowledge into the organisation. These are clear indications that senior management is aware of the importance of records management and digital preservation for WIPO business activities. It can also be estimated that there is today awareness of digital preservation among WIPO staff, but on rather a low level. Two main reasons for this have been identified: firstly, staff are rarely aware of any need or urgency for explicit digital preservation activities, since there have been no major disasters and the information needed has always been available. Secondly, the organisation is focussing on other, higher priorities right now, amongst which are new building projects, automation of finance and human resources, and the implementation of patent applications filing through the Internet.

⁷ A copy of the consultancy report's executive summary has kindly been made available to ERPANET.

⁸ See the WIPO structure chart at <http://www.wipo.int/about-wipo/en/pdf/org-en.pdf>.

Asset value and risk exposure

The studies and reports that preceded the implementation of a records management service and of an EDMS were based on the assumption that the organisation was taking care of the risks identified in prior investigations. No further risk analysis has been conducted recently. The following comments are thus summary remarks and not underpinned by a thorough analysis.

The most important value information has is the operational value for the organisation's core activity: patent request reviews. When a patent request is filed, it has to be checked against all existing patents. It must be stressed that an important part of the information needed for this work is implicit information, based on staff experience. Also, large parts of this information are in paper form, and only considerably small yet increasing parts of it are digital. In fact, digital information can mainly be found in the financial and human resources systems.

The risks involved if digital (or any) information is not preserved are not imminent. As will be detailed below, legal risks involving liability in court and financial risks are marginal. The main risks are therefore of a daily business character. In addition, the head of records management stresses the role of embarrassment. While direct legal consequences of the loss of information will be few, senior management always try to avoid public embarrassment. For instance, if a financial agreement with a member state cannot be retrieved from the archives, it is possible in most cases to obtain a copy from the state in question. While financial risks and consequences are therefore low, it is embarrassing to have to admit the loss of a document. Or if a member of the management board is not prepared for a meeting because important documents are missing, this will not have direct political consequences, but will be very uncomfortable for the person concerned. If possible embarrassment is involved, this may even be a major driving force towards investing on certain issues. In fact, several units of WIPO have lately expressed their interest in more up-to-date document and records management following situations of embarrassment. Along this line a rationale for implementing digital preservation solutions should include the avoidance of embarrassment.

Regulatory Environment

As an international organisation and part of the UN system of organisations, the WIPO is exempt from national law. In consequence, the organisation cannot be prosecuted legally. However, the law of the country of residence, Switzerland, applies for commercial contracts and similar documents.

WIPO is guided by the international convention that is the basis of its existence, namely the WIPO convention with its 180 contracting states.⁹ Internal and UN rules guide the day-to-day business of the agency, while the Patent Cooperation Treaty regulates legal and financial issues.

Preservation Activity

Currently it is the newly established archives and records management group that is responsible for the preservation efforts of WIPO. In addition to this, the head of the group is also project manager for the electronic document management system that is being implemented. External assistance has been used in different kinds. Besides

⁹ See <http://www.wipo.int/treaties/en/convention/index.html> for the WIPO convention home page.

the initial consultancy, two collaborations are especially noteworthy, namely those with the European Patent Office and with the group of UN agencies in Geneva for records management and archives. The latter works on standards, policies, data types, and data formats. Furthermore representatives of WIPO are active in the International Organisations section of ICA, the International Council on Archives. Besides offering benefits in coordination and development, these cooperation activities proved also very useful in convincing senior management of the importance of certain aspects of digital preservation.

The key decision leading to digital preservation was the introduction of an Electronic Document Management System (EDMS) at WIPO. The organisation has chosen the Documentum EDMS software.¹⁰ Under the heading “EDMS”, records management and digital preservation facilities have been implemented as well, all of which are accessible through a transparent user interface.¹¹ The project and the system are called Electronic Document Management System, this name having met with more sympathy than Electronic Records Management System. In fact, the new system includes both functions, and its name partly is a concession to some reservations among WIPO staff.

The move to electronic document and records management is not taking place synchronously across the whole organisation, but rather is carried out department by department. Also, there is no fixed time schedule. At present, several units are approaching the Records Management Service because they feel the need of better documents and records management. Consequently, it is this need that is driving the implementation of the EDMS across WIPO units.

Policies and Strategies

According to the action plan mentioned above, WIPO adopted a Records Management and Archiving Policy in 2001. This policy states WIPO's responsibility and accountability to manage and preserve its records, both paper-based and digital. It also helps the organisation take full advantage of the benefits of digital technologies. And finally, it provides the rationale for the promotion of a corporate, scalable, and adaptable digital record-keeping culture. Notably, the policy established the WIPO Archives and defined their function, position, and role. Both external consultants and the records management and archives group were involved in the creation of this policy, which then was approved by senior management.

Selection

Retention schedules are in place for paper and digital information alike. These are linked to the filing plan and specify security and confidentiality requirements, as well as the retention period and requirements. Responsibility for elaborating and maintaining these lies with the records management and archives service.

Preservation

Long-term preservation will be a part of the EDMS that is currently being implemented. WIPO has adopted the eXtensible Markup Language XML as its preservation file format and will convert documents into XML for preservation.¹² While

¹⁰ See <http://www.documentum.com/>.

¹¹ See the chapter on Access below.

¹² See the official website of the World Wide Web Consortium on XML: <http://www.w3.org/XML/>. In 2002, ERPANET has conducted a workshop on XML as a

documents such as reports from databases are automatically generated in XML, other documents such as MS Word files or HTML documents are manually converted into XML for preservation. This choice allows for easy handling of preserved information and includes a clear exit strategy: once XML is no longer be regarded as a sufficient format, it offers viable migration possibilities. The databases that form the backbone of WIPO's intellectual property administration are kept live on magnetic media and regularly backed up. These are not archived, but migrated to new systems whenever necessary.

The metadata set used in WIPO's EDMS was developed in April 2002 and is based on a United Nations system standard.¹³ This is basically descriptive metadata. The UN standard itself is derived from the Dublin Core Metadata Schema.¹⁴

Access

Access to preserved information is regulated by the existing Information Security Policy, which will soon be adapted to apply to a digital environment. Its main focus is confidentiality.

As a general rule, access to archived information is made possible through existing applications. For instance, the fax server can be accessed through the email client. The document management system offers integrated access to documents, records, and archived materials through Windows Explorer.¹⁵ Thus, the different kinds of materials are transparent to the user, who only sees the unified user interface. More information will be made accessible directly via the Internet in the future.

Compliance Monitoring

Up to this moment, no comprehensive monitoring of compliance to the archiving policies has been implemented. In fact, this is one of the most important remaining action points. This is related to the fact that the EDMS is not yet implemented organisation-wide, and that there is no strict timeframe for its implementation. For the time being, compliance monitoring is the responsibility of the records management section. Its staff also assists units in setting up the EDMS and provides basic training to staff.

The conversion of documents to the preservation format is monitored through automated systematic comparisons.

Digital Preservation Costs

Prior to planning and implementing the EDMS a cost benefit analysis has been conducted, comparing current costs and expected costs for the future. However, the head of records management reported problems in obtaining detailed figures for costs and possible savings. At any rate, it is not costs that have been the deciding

preservation strategy. The papers and report are available from <http://http://www.erpanet.org/events/2003/rome/>.

¹³ The United Nations Archives can be found at <http://www.un.org/Depts/archives/index.html>. Unfortunately, their metadata set is no longer available online.

¹⁴ Further information on the Dublin Core can be found at their website, <http://www.dublincore.org/>.

¹⁵ While Documentum is actually a document management system, it maintains a database of metadata for quick search and allows for indexed full-text search across documents.

argument for the move to electronic documents and records management, but rather the desire to improve processes and to provide more functions.

The budget for the preservation programme is allocated to the administration department (to which the Records Management and Archives group belongs). This does not include the costs for human resources and for software, as these are part of the normal budgets of the departments. The hardware costs, on the other hand, can be shown and set in relation to other budget items. As a raw comparison, they amount to around one percent of the organisation's yearly IT budget.

Future Outlook

At present, WIPO is still following the three-year action plan initialised by the consultancy report of 2001. This will drive preservation efforts until the end of 2004. The main interest for the immediate future is to proceed with the gradual implementation of the EDMS across WIPO's units and consolidate achievements so far. Since there is no fixed timeline for this, accurate predictions are difficult to make. At present, however, there is a high interest among the departments, actually a queue due to problems and weaknesses with the previous system that are becoming more obvious with increased system use.

There are other tasks that are being addressed or will be so soon. The records management and archives section is currently reorganising the paper archives. They are also investigating possibilities of fully automating conversion of documents to XML and plan to investigate information on security measures and policies, as well as improving monitoring and auditing procedures. Lastly, it is considered important to deepen subject knowledge among records management staff, in particular to have more people qualified in both IT and records management.

Chapter 7: Conclusions

Once the extent of its long term records management and archiving challenges were understood, the WIPO immediately began to address digital preservation in a fast-moving and pro-active manner. The transformation from a largely paper-based organisation with only rudimentary records management and archiving procedures to an organisation that is based heavily on electronic documents and records management has been undertaken with strength and decision.

A comprehensive approach to moving all business processes into the digital age has led senior management to carefully analyse the management of its information assets. This has been a major driving force of this offensive approach. The interaction between senior management, external consultants, and the newly established corporate archives proved beneficial to a rapid proceeding. Furthermore, it was crucial to consider staff reservations regarding this transformation. In general, the role of archivists and records managers tends to be feeble inside an organisation or company.¹⁶ By complying with certain wishes and reservations of staff members whilst remaining firm in the key points of his work, the head of records management at WIPO aligned himself to this situation.

While all international organisations share certain legal privileges and therefore are under less legal pressure than commercial companies regarding their records management, embarrassment is here seen as a strong possible trigger for action. Rarely before has this been depicted as such a effective impetus for action.

¹⁶ See for example the ERPANET case studies on the Council of Europe or the International Labour Organization, <http://www.erpanet.org/studies/>.

Appendix: References

The organisation's address details are:

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Fax +41 22 733 54 28

<http://www.wipo.int/>

The WIPO structure chart: <http://www.wipo.int/about-wipo/en/pdf/org-en.pdf>.

The WIPO convention: <http://www.wipo.int/treaties/en/convention/index.html>.

The Patent Cooperation Treaty: <http://www.wipo.int/pct/en/index.html>

Further information on WIPO can be obtained from the WIPO Information Center at information.center@wipo.int

The United Nations Archives and Records Management Services:
<http://www.un.org/Depts/archives/index.html>

Commercial products mentioned in the report:

Documentum: <http://www.documentum.com/>.
TripWire: <http://www.tripwire.com/>

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