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ELECTRONIC **R**ESOURCE **P**RESERVATION AND **A**CCESS **N**ETWORK

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Executive Summary

Many companies are currently facing a major shift in the way they do business. The increase in the amount and admissibility of electronic documents in everyday business requires that people change the way they think about information management. BT Archives is no exception and are currently in the midst of implementing policies and procedures to foster this change of mentality with regards to the use, retention and destruction of digital information. The majority of records held by BT Archives deal with corporate memory and historical data and are, for the most part, irreplaceable. Digital holdings are relatively low in BT Archives at the moment but they are expected to grow exponentially in the near future. An organisation-wide electronic document management system is to be implemented across BT over the next year. This, in addition to newly developed polices and procedures should help to ensure that BT's electronic documents are readable and accessible for the long-term.

Chapter 1: The ERPANET Project

The European Commission and Swiss Confederation funded ERPANET Project[1] (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.

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[1] ERPANET is a European Commission funded project (IST-2001-32706). See www.erpanet.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,

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[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/charter.php.

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 instrument[3] 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]

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[3] See http://www.erpanet.org/studies/index.php. 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: BT Archives

BT Archives is responsible for preserving both the historical information of British Telecommunications plc and their corporate memory. The information is preserved and made accessible to assist BT's performance, and to "raise the company profile and support BT as one of the world's leading providers of telecommunications services".[5] The majority of the records held by BT Archives are paper documents, but staff are aware that electronic information, including emails, are becoming increasingly vital to BT's business records and corporate memory.

BT was privatised in 1984, and records held prior to this year are classified as public documents under the Public Records Acts 1958 and 1967. Therefore, in addition to internal use, the general public also makes use of the archive's holdings. The records in the archives date from the early part of the nineteenth century to the present day and effectively represent the history of telecommunications activities in the UK and from the UK to abroad. Materials range from research materials (journals, reference books and other printed sources), historical telephone directories, post office collections (papers documenting the development of the telegraph and telephone services up to 1980), and material donated from internal and external sources relating to telecommunications history.

The BT Archives moved to a purpose built repository at the Holborn Telephone Exchange in July 1997 in order to facilitate the preservation and access to its unique and priceless archival collections. The Royal Commission on Historical Manuscripts has approved the facilities at Holborn Telephone exchange as meeting the standard for archives repositories.[6]

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[5] http://www.btplc.com/Corporateinformation/BTArchives/index.CFM.
[6] http://www.hmc.gov.uk/advice/approval.htm.

Chapter 5: Details and circumstances of the Interviews

Due to time constraints, British Telecommunications were unable to participate in the telecommunications cross-sectoral case study produced in July 2003.[7] ERPANET is grateful that BT Archives has agreed to take part in this focused study during what is a particularly busy time for the company.

The participants in this case study included Lucy Jones, Group Archivist; David Hay, Head of Corporate Memory; and Ken Reid, Information Retention Policy Manager. Both Lucy Jones and David Hay are professional archivists. Interviews were held via teleconference with Lucy Jones who spoke on behalf of the group on December 3rd 2003. Further telecommunications with Ken Reid took place in December 2003.

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[7] *erpa*Studies – Telecommunications, ERPANET 2003
http://www.erpanet.org/studies/docs/erpaStudy_telecoms.pdf.

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

BT is aware of the value of electronic information and new technology in modern business. BT acknowledges that,

"Virtual markets, electronic commerce, broadband and mobility are now the watchwords which are changing radically the way companies and people do business'. BT has recognized that technical expertise and commercial acumen must be combined to ensure that they remain competitive in this changing environment. Indeed, BT acknowledges that 'successful companies of the future will be those which exploit their technology to underpin their business, generate revenues and minimise costs'".[8]

Electronic information is becoming progressively more central to BTs core business functions. In addition, recent changes to the Freedom of Information Act[9] in the UK mean that access to the public records held by BT Archives must be as efficient as possible. In response, BT is in the process of implementing an organisation-wide electronic document management system (EDMS) to aid with both management and access issues. The EDMS deals mainly with speed and ease of access to digital information rather than its long-term preservation. However, BT is currently developing a Use and Destruction of Electronic Information policy that will help to define how long material needs to be preserved.

While BT Archives do not consult any specific resources for digital preservation information, BT Archives staff actively communicate with other corporate archivists and attend workshops provided by the National Archives and Public Records Office on best practice. Previous collaborations on a benchmark study on staff and resources involved financial institutions, the Royal Mail, Guinness and Unilever. BT Archives are enthusiastic about collaboration and feel that a variety of perspectives can be of great benefit when approaching common problems such as digital preservation.

The Main Problems

BT Archives cite the management of the sheer volume of digital resources – specifically emails – as a major challenge. As BT employs over 105,000 people, ensuring that efforts are coordinated across the organisation can be challenging. BT

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[8] http://www.btplc.com/Corporateinformation/BTArchives/index.CFM.
[9] http://www.dca.gov.uk/foi/foiact.htm.

Archives also point to the variety of formats of the digital resources being created and acquired as an area that will be problematic in the future. There is also concern for the financial costs involved with updating hardware and software to avoid technical obsolescence. However, BT think that the biggest challenge lies in changing the way that staff members think about the use, retention and destruction of digital information.

Asset Value and Risk Exposure

As noted above, many of the records held by BT Archives are irreplaceable. Board records, historical information and public records all fall under BT Archives remit. In a shift from paper to digital information management, BT is also in the process of digitising Human Resources records. Board records must be retained permanently. For the bulk of business records, retention for seven years is adequate for legal compliance. To improve the management of electronic information, BT recently undertook an organisation-wide risk and cost-benefit analysis resulting in the plans to implement an EDMS. The recognition of the value of the BT web site for corporate memory has led to the periodic capture of snapshots for preservation. BT Archives follow a schedule for taking snapshots and, although BT Archives indicate that retaining functionality of the pages is desirable they did not elaborate on how this would be achieved.

Regulatory Environment

Since BT was privatised in 1984, they have been under the general statutory regulations affecting all public limited companies (plcs).[10] BT Archives is also aware of the importance of compliance with the Legal Admissibility and Evidential Weight of Information stored Electronically (PD0008) [11]. As a place of deposit for public records, BT Archives must also conform to the new access rights for public records under the Freedom of Information Act. Records produced before the date of privatisation are classed as public records under the Public Records Acts 1958 and 1967. BT Archives undertakes the company's statutory responsibilities under these acts to preserve and make available public records to members of the public after 30 years. For this reason, BT Archives have been appointed an official place of deposit for public records. BT plc must also comply with the regulations of all the countries in which it has a presence, however, this does not generally affect the BT Group Archives.

BT Archives must comply with internal organisation-wide policies on the selection, appraisal and retention of information. As the organisation does not differentiate between digital and paper documents, the material is judged on the merit of its content alone. Therefore, if something is deemed historically valuable for the corporate memory of BT, it must be preserved regardless of the format in which it was created or acquired.

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[10] http://www.bsi.global.com.
[11] Which defines that a company must demonstrate that the contents of a specific data file created or existing within a computer system have not changed since the time of storage (i.e., the file is authentic). http://thedocumentsite.co.uk/legaladmissibility.html.

Preservation Activity

Policies and Strategies

Currently, emails and electronically generated materials are the responsibility of the individual creator. Recognising the need for a proactive approach to managing their digital information, BT are in the process of establishing a policy on the Use and Destruction of Electronic Information. This will help to establish emails and born digital materials as archival resources and also to introduce strategies for selecting and retaining them. Ken Reid, Information Retention Policy Manager, is leading this initiative.

BT does not identify specific preservation activities in its policies for digital information (except for the new Use and Destruction of Electronic Information policy currently being developed). However, as mentioned above, all policies in place at BT are organisation-wide and selection of material is based on the value of the content rather than format, therefore digital materials are indirectly covered by all policies.

BT ensures that all staff are made aware of policies and procedures through mandatory training and testing. BT employs its intranet (one of the earliest corporate intranets to be implemented in the UK) to offer on-line training to its staff. The success rate for staff compliance to policies is currently measured by a number of criteria one of which is the numbers that have completed the on-line training module. However, the BT audit team also work to ensure staff take-up of policies.

Selection

BT retains documents primarily for their business and legal value, regardless of format. This has been applied to the corporate web site as well and BT Archives periodically captures snap shots of the site to enhance corporate memory. For the majority of business records, BT must retain them for 7 years. However, documents such as board records and personnel files must be retained for much longer periods. An Information Retention policy has been developed and is implemented organisation-wide. The Information Retention Policy Manager, Ken Reid, works with all other departments to ensure that the policy is meeting the needs of the organisation. In addition, all policies are reviewed on an annual basis and can be updated to reflect changing needs within the company.

As email is emerging as the primary mode of business communication within BT, a policy for the retention and disposal of emails is being developed (this will be covered under the Use and Destruction of Electronic Information policy). The amount of emails currently being retained is too great and the bulk impedes the efficiency of the system. By applying a selection, retention and destruction policy to emails this situation can be relieved. BT is currently implementing a pilot project that trawls staff email accounts and flags up anything that is over two years old. A message is then automatically sent to the staff member who then must decide whether to preserve the email or to dispose of it. Email is appraised based on the guidelines set out in the complex retention policy, which is applied organisation-wide. At this stage, however, destruction is still at the discretion of the individual. Therefore, success in reducing staff email holdings cannot be guaranteed at this point. The other major problem cited by BT Archives was changing the mentality of staff to adapt to these new ways of working. However, it is hoped that the development of the Use and Destruction of Electronic Information policy and the mandatory training that will accompany its implementation will help to consolidate staff activity in this area.

By the end of 2003, BT aim to have 40,000 staff using the EDMS. By the end of 2005, all 105,000 staff will be using this system. It is expected that the full impact of the implementation of the EDMS will only be revealed once all staff are actively using it.

Preservation

Generally, digital material comes to BT Archives in the form of CDs. At the moment, staff members deposit digital material with the archives on an ad-hoc rather than on a formal basis. Digital preservation activities are undertaken in house by the IT department. The IT department backs up organisation-wide systems to tape monthly or as often as necessary. Over the past three years, BT has made a move towards reducing its paper holdings. Whenever possible, paper files are digitised and the paper version is then destroyed. This means that BT has much at stake in ensuring that their digital records survive to meet business and legal requirements. However, it should be noted here that digitisation efforts are primarily aimed at improving access rather than preservation at this stage.

Access

Access to BT's digital resources is governed by user profiles and passwords controls to comply with the IT Security Policy. Access to public documents will need to be as efficient as possible once the Freedom of Information Act comes into effect in 2005. The EDMS is seen as the tool that will enable rapid responses to requests for information. Access to non-public information is made available once it is 30 years old. The EDMS can assist in this process by issuing automatic reminders when the document can be made publicly accessible.

Compliance Monitoring

BT has a dedicated internal audit team. Their sole role within BT is to ensure that all BT staff are complying with organisation-wide policies. Compliance monitoring is a continuous process within BT and as such, all staff must be prepared to demonstrate their awareness and adherence to corporate policies at any time. The audit team is responsible for monitoring the integrity of the digital information retained. BT will also need to comply with the new access rights for public records under the Freedom of Information Act by early 2005 and may be audited by external bodies.

Costs

BT Archives budgetary information is confidential.

Future Outlook

BT Archives expects their digital holdings to increase dramatically in the near future. The current policies and procedures are expected to meet the organisation's needs for the next five years. In addition, the implementation of the EDMS is expected to improve the management and access to digital resources. However, until the implementation is fully completed, the true impact cannot be ascertained. As all policies are reviewed on an annual basis, BT will be able to update and adapt their approach to their digital preservation activities as needed. BT will continue to work on implementing the cultural change among employees to facilitate the shift from paper-based to electronic business activities.

Chapter 7: Conclusions

By coordinating their efforts and ensuring that compliance is adhered to across the entire organisation, BT should avoid fragmented strategies and duplication of effort. The implementation of mandatory training and testing are also valid approaches to ensure that staff awareness and compliance is achieved.

The implementation of the Use and Destruction of Electronic Information policy should be a good step towards ensuring that archival practices are applied as rigorously to digital information as they are to paper documents. This will help to reaffirm BT's commitment to preserve information based on content rather than format.

Overall, the issues surrounding digital preservation are well understood by staff at BT Group Archives. The roles and responsibilities are clearly assigned throughout the organisation and adherence to policies is mandatory across the board. The strength of BT's internal framework will be of benefit in the long-term as new strategies and initiatives are undertaken to ensure that the irreplaceable holdings of BT Archives are safeguarded for future use.

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