erpastudies

tessella support services plc

www.erpanet.org

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Executive Summary

Tessella is a mature software development house providing services and software solutions to clients in a wide range of market sectors and disciplines. Their digital holdings range from everyday office files such as text documents, emails and spreadsheets, to customised pieces of software and associated execution and compilation scripts.

Not bound by a specific regulatory environment, Tessella want to preserve access to their data for as long as possible. Their approach to this is based largely on effective records management, complemented by a high level of digital preservation awareness amongst staff that allows them to be aware of, and thus avoid, encroaching technical obsolescence.

Tessella's situation can be likened to that of many other small to medium sized enterprises: there is no mandate to preserve, but the company recognises the business value in retaining access to its digital assets in the future.

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, awareness of digital preservation, resources available, and the nature of the digital

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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/www/content/documents/Digitalpreservationcharterv4_1.pdf

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 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: Introduction to the sector

Commercial Software and Computer Services (S&CS) is a vast and multitudinous sector. The market is diverse, incorporating products and services such as systems infrastructure software, project services (including IT consulting, systems integration and IT training), tools, application software products and solutions, and outsourcing. The company featured in this case study offer almost all of these products and services.

The commercial S&CS sector currently has one of the largest and fastest growing markets in Europe and is one of the cornerstones of the digital information economy. It comprised approximately 31% of the worldwide market economy in 2003, 24% of which was occupied by the European market, and continues to grow in Western Europe at a greater rate than hardware and telecommunications.[5] The European Information Technology Observatory (EITO) predicts that in 2004, the worldwide market for ICT products and services will grow to €2,378 billion.[6] Nationally, the UK National Trade and Investment Office[7] estimates that there are between 70,000 and 125,000 companies supplying software and IT services.[8] Most of these are small to medium enterprises with annual revenues measured in tens of thousands of pounds. The sectors revenue is dominated by the big market players, with over half of the total revenues generated by just over 10 percent of the market.[9]

The commercial S&CS sector is not renowned for its digital preservation activities. Our interviewees noted that where digital preservation efforts do exist, they are usually customer-oriented. There are no specific regulatory requirements for IT companies in the UK and companies are not legally obliged to preserve technical files, including programmes and specifications; only administrative company data as required by UK business law.[10]

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[5] See UK Trade and Investment Office (Australia) website:
http://www.uktradeinvest.com.au/UKTI/level_three_content/strategic_partnerships/ICT_march_2004/software_computer_swervices_sector_brief.htm, and UK Trade and Investment Office (UK):
http://www.tradepartners.gov.uk/text/software/profile/index/overview.shtml.
[6] See the EITO report for 2003, available for purchase from the EITO website:
http://www.eito.com/.
[7] See: http://www.tradepartners.gov.uk/text/software/profile/index/overview.shtml.
[8] The UK Trade and investment website notes that the public sector is the fastest growing sector of the UK S&CS market, largely due to the drive for e-Government. Outsourcing is also a key driver for growth in the UK S&CS market as customers seek 'more for less', reflecting the common use and demand for software to raise overall levels of productivity, efficiency, and industrial competitiveness.
[9] UK Trade and Investment website, op cit.
[10] Programming languages are reliably maintained by external authorities and are not the concern of individual private companies. Likewise, the development of 'de jure' technical standards (eg XML, JPEG) is controlled by other, non-profit bodies.

Chapter 5: Details of the Interviews

Tessella Support Services PLC

http://www.tessella.com

Founded in 1980, Tessella Support Services plc is a mature privately owned software solutions development and support company based in the UK. The company head office is located in Abingdon, with five more branch offices in England and another two in the Netherlands and the USA. Recently awarded both the *Deloitte & Touche Fast 50* and *HgCapital* awards for fast growth, the company employs over 100 people and now has an annual turnover of almost 9 million pounds[11]. It continues to grow.

One of the leading suppliers of high quality software development and support services to the scientific and engineering communities, Tessella also develops and supports high quality precision software for the pharmaceutical, public, and transport sectors. The company has supported numerous client projects developing digital preservation technology in different sectors, including a Central Electronic Archive[12] for a major pharmaceutical company, and both the digital archiving system of the UK National Archive[13] and their PRONOM database system that supports file rendering[14]. They were partners in the three year Dutch Digital Preservation Testbed project, developing a purpose built Testbed system to investigate approaches to preserving records for the long term[15]. They also provide ongoing support for the JET digital archive of experimental data on nuclear fusion[16], migrating the system to a new platform on more than one occasion and developing additional functionality[17]. Due to this work and their policy of intra-company information sharing, they are relatively well informed on the challenges of preserving access to usable digital information.

This case study focuses not on their clients' digital preservation projects but on the internal workings of the company. Tessella's digital holdings include project documentation and source code for all of the software they develop, including compilation and installation scripts. This can range from CAD software using C and C++ to customised database applications with Java or XML or application plug-ins. Company data is managed within a document management system available to staff over a secure Internet connection, maintained by a dedicated internal IT systems team.

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[11] See http://www.tessella.co.uk/news/GrowthAwards.htm; awarded 2002.

[12] Tessella review: http://www.tessella.com/Services/CaseStudies/anonymous/e_Central%20Electronic%20Archive.pdf.

[13] Tessella review: http://www.tessella.com/Services/CaseStudies/approved/e_National%20Archives%20-%20Digital%20Archive.pdf. Digital Archive web pages: http://www.pro.gov.uk/about/preservation/digital/archive/default.htm.

[14] PRONOM complies with eGIF, the UK Government Interoperability Framework, for further information on eGif see: http://www.govtalk.gov.uk/schemasstandards/egif.asp. Tessella review: http://www.tessella.com/Services/CaseStudies/approved/e_National%20Archives%20-%20PRONOM.pdf. PRONOM web pages: http://www.pro.gov.uk/about/preservation/digital/pronom/default.htm.

[15] Tessella review: http://www.tessella.com/Services/CaseStudies/approved/e_Dutch%20Govt%20-%20Testbed.pdf. Digital Preservation Testbed website: http://www.digitaleduurzaamheid.nl.

[16] Tessella review: http://www.tessella.com/Services/CaseStudies/approved/e_JET%20-%20Processed%20Pulse%20Files.pdf.

[17] See http://www.tessella.com/Services/Discipline/epreserve.htm for list of digital archiving projects.

The company's internal procedures are ISO 9001:2000 compliant, incorporated into an automated quality control workflow system (above) that is internally controlled by a Quality Manager. The British Standards Institute audits them every six months.

Chapter 6: Circumstances

ERPANET initially approached Dr. Bill Roberts, senior programming consultant and branch manager of the Tessella office in the Netherlands. Tessella agreed to participate and appointed Dr. Roberts to represent them from both management and IT perspectives. Tessella's quality manager in the UK, Judith Diserens, also participated.

Dr. Roberts was interviewed on the 11th November 2003 at the National Archives of the Netherlands. Ms Diserens responses were received via e-mail at the beginning of January 2004.

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

Tessella have developed and implemented large scale digital archiving solutions for numerous clients[18]. Many different staff have worked on these projects, addressing different technical aspects and developing familiarity with digital archiving and preservation requirements in different sectors. Tessella holds regular internal training sessions for staff to present their project work to the rest of the company, informing them of the particular challenges and developments in that sector. The company thus considers itself fairly well-informed on issues of digital preservation.

The main problems

The company perceived the challenge of digital preservation as twofold. The first step lies in keeping accurate track of digital holdings; whether you can read and understand a file is irrelevant if you can't find it in the first instance. Second is the obsolescence of file formats and the associated software required to process them. Tessella do not consider themselves significantly challenged by this yet because most of their digital records are stored in contemporary 'standard' formats, both proprietary and open[19]. They recognise however, that action will probably be required to retain good access to these files after a few more generations

Asset value and risk exposure

As with all companies, Tessella is required to keep administrative and financial data concerning the day to-day running of the company and its staff. In addition to this, Tessella keeps the documentation produced for every client project, usually comprised of such office files as text documents, spreadsheets, project plans and emails. Finally, they also retain copies of the software and source code they write and develop, plus associated parts such as installation scripts. These scripts are typically some kind of an executable file and whilst often written in plain text, are designed for use on a computer and not to be read by the human eye. Tessella is firmly committed to being able to access and use these old files in the future when possible[20].

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[18] Op cit. See also the description in chapter 5.

[19] Interviewees used the term 'standard' to denote both de jure and de facto standards; that is, both officially defined and specified open formats, and closed formats for which the specifications are not freely available but have gained a critical mass of users.

[20] One of the drivers behind the 1996 installation of their EDMS (Electronic Document Management System) was improved record retrieval, in addition to regulating and tracing work processes in support of the ISO 9001:2000 certification.

As regards asset value, the intellectual rights to the knowledge or ideas developed by Tessella are sometimes the property of their clients. In such cases, Tessella keep copies of the work for future reference (except when their customer asks them not to), should the customer require further work but no longer have access to the files themselves. In other cases, the intellectual rights are owned by Tessella and they can re-use some of the information. The value of technical programme files is however limited by the speed at which technological obsolescence is taking place, making older files less valuable with the passing of time.

The risks resulting in the loss of such information are therefore largely business-oriented. Problems could arise if a dispute arose with a customer and the company did not have adequate documentation on the work that had been carried out. The company could also lose its ISO 9001:2000 Quality Control certification (see below) if project documentation became unavailable before the end of a contract or support period.

The company is aware of these possible outcomes, despite the lack of a formal risk analysis or business needs analysis.

Regulatory Environment

The UK software industry is not governed by a specific regulatory environment regarding preservation and access. As a UK company, Tessella is covered by the same administrative regulations as other businesses, including the data protection act and retention periods for financial and personnel records. In addition, many of Tessella's project records are commercial in confidence and require that the company ensures the contents remain private.

The UK and Sweden support an optional quality control scheme for software suppliers called TickIt[21]. TickIt concerns improving the quality of software and its application. A successful audit by a TickIT-accredited certification body results in the award of a certificate of compliance to ISO 9000:2001, endorsed with a TickIT logo.

ISO 9000:2001 is an international quality control standard from the International Organisation for Standards[22]. It specifies requirements for a quality management system where a company needs to demonstrate its ability to consistently provide products that meet customer and applicable regulatory requirements, and aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable regulatory requirements[23]. Whilst not a legal requirement, certification of compliance with ISO 9000:2001 is often a contractual requirement for software suppliers in certain market areas.

Clients are often subject to a specific regulatory environment, for example in pharmaceutical or government contracts. Such instances may require Tessella to produce or develop software to those standards.

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[21] See the TickIt website: http://www.tickit.org/index.htm.
[22] See the ISO website: http://www.iso.ch/iso/en/ISOOnline.openerpage.
[23] See:
http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=21823&ICS1=3&ICS2=120&ICS3=10 for further details of ISO 9000:2001.

Preservation Activity

Tessella is an independent and well-established company that developed its approach to preservation independently, without the help or co-operation of other software development companies. They carry out as much work in digital format as possible, resorting to paper only when absolutely necessary. Tessella approach the preservation of their files within the context of records management and quality control. They do not have a separate archive, storing all data in the company EDMS for retrieval in the future. They rely on company knowledge developed through project work and do not look towards their sector for advice on preserving digital information. Staff working on digital preservation projects are generally aware of the major digital preservation publications and efforts, citing familiarity with the DLM Forum and ERPANET workshops, and journals on library and archive preservation issues. Again, this is as a direct result of their project work.

Policies and Strategies

The company are driven by an internal desire to maintain access to their qualitative information rather than external requirement to preserve, and approach digital preservation as a part of their general day-to-day document and records management activities. Thus whilst they do not have a separate preservation policy, they do have policies relating to Project Management and Quality & Business that include aspects of what archivists and records managers would term records or document management policies.

Policies define procedures, which in turn define documentation that must be produced and retained for the company to meet its business requirements. A special internal committee was established to formulate and develop company policies, driven largely by upper-management. A dedicated quality manager has responsibility ensuring procedures are followed; she works together with a Steering Committee to ensure that the policies are promulgated and practised across the organisation.

Every employee within the company has access to these policy documents, many of which have been implemented into the workflow management of the EDMS and which apply across the entire organisation. All new employees are trained in following the procedures.

There is no specific time-frame in place for updating or renewing policy documents; documents are simply updated as and when required, informed by the committee meetings and the quality manager. The company employs a rigorous version control system to ensure that the most up-to-date versions of dynamic documents are always easily identifiable and accessible[24].

Selection

As with the preservation policy, there is no separate selection policy that determines which records are to be preserved; this information is instead defined in the quality policy (identified above) that is laid out to accord with the ISO quality standard. The quality procedure requires that all documentation produced for a project (for example) is retained. Some of this is taken care of automatically; the company EDMS ensures that all required documents are uploaded at the correct time and will not allow a project

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[24] Older versions are retained in most cases, but only the latest version of each quality system document is made easily available to all staff, to ensure that the latest procedures are followed.

to proceed to the next stage unless the preceding steps are completed. Other aspects require human monitoring and intervention; if a document is missing then the system will produce a report to indicate error, but a human being must read the report and act on it. The procedures, defined in the policies, ensure that these things happen.

The quality manager is responsible for maintaining and implementing these procedures. She has a dedicated assistant and access to other IT staff, including the internal IT systems manager, when necessary. She also has a strong technical background, having previously had a programming position in the company, so has a good grasp of the technical issues involved and the nature of the records she deals with.

The system and procedures cater for Tessella's own administration and personnel files, as well as their business-driven information.

Preservation

In keeping with Tessella's overall approach to preservation as part of their active records management, preservation is not carried out as a specific activity but incorporated into the general day to day running, maintenance, and use of Tessella's internal systems.

Tessella defined their approach to preservation as 'common sense procedures driven by a desire to minimise the use of paper'. Their paper holdings are limited to staff or project contracts with physical signatures; digital signatures are uncommon largely because of a lack of acceptance within the commercial sector (with the notable exception of emails[25]). Letters and orders are scanned and entered into the EDMS along with all other required documentation. The company uses standard data formats wherever possible, both proprietary and open, and are not consciously converting files into different formats purely for preservation purposes.

The EDMS at Tessella is Lotus Notes and there is no separate digital archiving facility. Retained records consists largely of Office files (such as emails, text documents and spreadsheets) and development code, which Tessella considers fairly straightforward as it is written and stored in plain text. Once records and metadata have been entered and accepted by the EDMS, they are considered to have been stored for the long term. File migrations are carried out only as and when required and on an ad-hoc basis; for example, the company experienced minor problems in accessing an old MS Project file so migrated it into a higher version of the application and re-saved it in the EDMS. They appreciate that this is only viable if such problems occur on a very small scale: a more developed and systematic conversion procedure would be required should the same thing happen with more prolific files such as text documents. They will address this when it becomes a problem.

Record metadata is defined within the EDMS but does not accord to an accepted or national metadata standard. This is because Tessella devised their own metadata set to suit their requirements when the system was implemented in the 1990's, having no metadata specialists in the company and no awareness of metadata standards at the time. The majority of it is automated and can be either extracted from the file or allocated by the system (eg Last Modified Time and User). None of the metadata is manually entered – users must select two items from a drop-down list – so the chances of human error affecting metadata are minimal.

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[25] Digital signatures are stored in the EDMS separately from the messages.

Files are physically stored online in a RAID system and the hard disk servers are replaced roughly every 2 – 3 years. System failures are quickly obvious because the material is online and in regular use, as well as being monitored automatically by the hardware. Redundant copies of the information are stored offsite but as part of an IT backup regime and not for archival or preservation purposes.

System maintenance is carried out in house by Tessella staff and the technical infrastructure is maintained by the internal IT systems manager. The systems manager is part of a larger group of people (about four) responsible for maintaining the internal systems. The group is a slowly revolving group, so a range of different people across the company contribute to it at different stages. Tessella maintain active training programmes and opportunities for their staff and will arrange training courses should staff require them[26]. The company's internal documentation is also a valuable source of training information, pertaining not only to company policies and procedures, but also to the system itself.

The company is aware of external standards and guidelines for aspects of digital preservation, such as the MOREQ requirements specification for electronic records management systems[27], the records management advice of the UK National Archive[28], and the preservation approaches recommended by the Dutch Digital Preservation Testbed[29], but have not yet seen fit to implement them. This is largely because their EDMS has been in place for the past 6 – 7 years, preceding the development of those guidelines and standards, and because their existing practices are perceived to still be satisfactory.

Access

Tessella's stored digital assets are accessed via a Windows client or web interface linking directly to the company EDMS. Files are read using contemporary versions of the application the file was created in – for example, a Word 95 file may be opened and read by a member of staff using Word 2000 or 2002. This means the company is relying on a passive form of backward compatibility to preserve access to their documents, rather than taking direct preservation action on the files themselves. [30]

The EDMS is protected from unauthorised access and manipulation primarily through role-based security privileges. Permissions are associated with staff logins, which are defined by their relation to a particular project. Many of the items in the EDMS are read-only and once approved, signed and entered, they cannot be changed. Further to this, firewalls and security policies are in place to protect the system from unauthorised external manipulation.

Privacy issues are also a consideration. Tessella is required, as are other UK companies, to adhere to the Freedom of Information and Data Protection Acts.

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[26] Full time technical staff are awarded a generous annual training allowance of 150 hours.
[27] See: http://www.cornwell.co.uk/moreq.
[28] See: http://www.pro.gov.uk/recordsmanagement/standards/default.htm.
[29] See: http://www.digitaleduurzaamheid.nl.
[30] Backward compatibility is a form of migration that usually involves re-saving the file into the higher version of the application format. As Tessella do not usually re-save the file (unless necessary), we have considered this as 'passive' backward compatibility. Further discussion and information on different practical applications of preservation strategies can be found in chapter 4 of the Dutch Digital Preservation Testbed's final recommendations, see http://www.digitaleduurzaamheid.nl/bibliotheek/docs/volatility-permanence-email-en.pdf as an example.

Customer information and staff personnel files are subject to these acts, compliance with which is the responsibility of the quality manager.

Compliance Monitoring

Compliance monitoring is carried out to ensure company policy and procedure on quality assurance and record retention is adhered to. Responsibility for monitoring rests with two sources: the internal quality manager; and the external ISO and TickIt certification bodies. In the last ten visits (five years), only three minor non-conformities have been raised and their level of compliance is high. One of the more important aspects of compliance checking is ensuring that the data is organised and accessible, which Tessella achieve by laying down explicit policies and procedures and maintaining them by both human and automatic means.

Records held in the EDMS are not explicitly checked for signs of deterioration or obsolescence and are only assessed by de-facto means when someone opens and uses them.

Digital Preservation Costs

In line with the company's overall approach to preservation, Tessella do not have a separate budget for preservation and include the costs of retaining their records as part of the overall IT systems budget. They have not carried out a cost benefit analysis.

Future Outlook

Tessella appreciate that they will experience problems with their current approach to preservation when the material starts to exhibit 'typical preservation problems such as Word 95 documents no longer being properly readable.'[31] Whilst it is difficult to predict exactly when that will be, they anticipate this may become an issue in as soon as three or four years time but that it will probably be longer. Much depends on how long their software suppliers continue to offer sufficient levels of backward compatibility.

The company is happy with its current approach to securing its digital assets and staff are knowledgeable enough to keep an eye out for problems that may emerge in the future. The exact nature of the future challenges cannot yet be gauged, but they are confident that they will be able to address them when the time arises. They believe it likely that they will still be using mainstream proprietary products to create their records and that an active migration strategy will play a more significant role than it has to date.

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[31] Taken directly from questionnaire response.

Chapter 8: Conclusions

Tessella's approach to preserving their digital assets is driven by an internal desire to maintain access to their digital files in the future, rather than an explicit and external requirement to preserve digital information. This is reflected in their strategy of passive backward compatibility until such time as a more ardent approach is required, which has caused them only minor problems so far. However, both ERPANET and Tessella agree that this is not a strategy which will last for the long term, and that a more pro-active approach will be required at some point in the near future.

The fact that the company is well-aware of digital preservation issues may mitigate many of the risks involved in digital preservation. If the most pressing problem of digital preservation is the fast pace of technological obsolescence, which only becomes a serious issue if it is not addressed, and if the company has a good general level of awareness about changes in technology, then they should be able to maintain access to their digital records in a reliable manner for many years to come as long as they a) react quickly enough when serious technological changes do occur and b) devise and test a suitable migration strategy.

The company's attitude to record creation, which was not covered in our questionnaire, is a significant factor here: company records are created according to strict templates, resulting in groups of records of a similar type with easily identifiable and consistent features. The consistency between these records means they can be converted en-masse with a high level of certainty about the conversion results. As a result, once the procedure has been defined and tested, it can be carried out automatically, thus reducing costs, effort and the number of man-hours required, and eliminating extensive manual repetitive procedures that are likely to induce human error.

Unfortunately, the absence of written policies and strategies regarding digital preservation means that Tessella's digital holdings are still vulnerable. Steps have not been taken to ensure that the in-house knowledge of digital preservation issues remains in-house; if, for example, a significant number of their staff with digital preservation knowledge choose to leave the company, then the level of awareness will likely decrease and the risks subsequently be heightened. Tessella's current strategy works but it cannot be monitored; developing written and explicit strategies would enable them to do so.

Preservation is, for Tessella, a consequence and implicit part of active records management. It is not considered as a separate activity. The approach they have taken has served them well so far, but it will not last for the long term and is not necessarily transferable to businesses with different (and longer) preservation requirements. However, much of the groundwork has been done: Tessella's records are well ordered and accessible, saved with technical and administrative metadata, and ready for suitable preservation activity when the time comes.

Appendix 1: References

Digital Preservation Testbed website: http://www.digitaleduurzaamheid.nl

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