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## A DIGITAL PRESERVATION STRATEGY FOR PARLIAMENT

### Introduction

1. The longevity of all Parliament's digital resources is under threat. Without access to the trusted digital information it needs to preserve (up to and including in perpetuity) neither House will be able to support the work of its members or its administration, nor the requirements of the public for access to Parliamentary information wherever and whenever they want it in the future.
2. Digital preservation is now commanding a good deal of attention in government, the public and private sectors and the media. The challenge of digital preservation has been highlighted by the Commons' Select Committee on Constitutional Affairs, which criticised the Government for a lack of urgency over the issue, and in a report commissioned by the National Council on Archives, *Your Data at Risk*. The Digital Preservation Coalition's *Mind the Gap* report also noted many of the same concerns picked up by the Select Committee, particularly in the areas of a lack of forward planning and vision, and complacency in the face of rapid technological change.<sup>1</sup>
3. For Parliament this problem will grow much larger as it produces more electronic information and begins to move from paper-based to electronic records. A robust strategy will allow Parliament to anticipate and forestall rather than react.
4. This paper sets out a strategy and high-level business case to deal with that risk up to 2013. It has been developed by the Parliamentary Archives, in consultation with key stakeholders in both Houses and PICT, and is presented to the Directors of Information Services in both Houses for approval. The strategy is based on a hard-nosed business impact appraisal, where professional best practice in information and archive management supports rather than directs investment.

### Definitions

5. Terms used in this strategy are:
  - **Digital record** – any information that is recorded in a form that only a computer can process and that satisfies the definition of a record as stated in the *Parliamentary Records Management Policy* (April 2006).
  - **Digital asset** – the material produced as a result of digitisation, or digital photography; as well as more complex, structured accumulations such as

<sup>1</sup> See [www.publications.parliament.uk/pa/cm200506/cmselect/cmconst/991/99102.htm](http://www.publications.parliament.uk/pa/cm200506/cmselect/cmconst/991/99102.htm) [para 46, rec. 7]; [www.ncaonline.org.uk/materials/yourdataatrisk.pdf](http://www.ncaonline.org.uk/materials/yourdataatrisk.pdf); and [www.dpconline.org/docs/reports/uknamindthegap.pdf](http://www.dpconline.org/docs/reports/uknamindthegap.pdf) (last accessed 5 March 2008)

online learning resources, web pages, virtual reality tours and digital audio/visual files.

- **Digital resource** – encompasses both digital records and digital assets.
- **Digitisation** – the process of converting parchment and paper records, microfilm, photographs, film and magnetic tape into digital form by scanning, digital photography, or some other conversion method.
- **Digital Preservation** - the process of ensuring that a digital resource remains authentic and accessible over time, despite changes to, and obsolescence of, the hardware and software which makes it readable.
- **Digital Archaeology** - the process of retrieving a digital resource which has become inaccessible due to technological obsolescence and/or poor preservation of metadata about its format, structure and content.
- **Metadata** – information about data which is required to manage, search and preserve it.
- **Migration** – the periodic transfer of digital materials from an obsolete format to a more current one, thus changing the encoding of the information in order to maintain its accessibility.

## Background

6. For over 500 years Parliament has managed its information in various analogue (ie hard-copy) formats, including parchment, paper, videotape and photographic film. It now needs to address the challenge of preserving Parliament's digital resources for the same length of time.
7. The challenges of maintaining access to digital resources over time are related to notable differences between digital and analogue material, namely:
  - **Machine Dependency** - digital resources all require specific hardware and software in order to access them.
  - **Technological Obsolescence** - the speed of changes to software, hardware and operating systems means that the timeframe during which action must be taken is very much shorter than for paper. These may be measured in terms of perhaps only two to five years, as opposed to the decades or even centuries we associate with the preservation of traditional materials. Technological obsolescence is generally regarded as the greatest technical threat to ensuring continued access to digital material.
  - **Loss of Integrity** - the ease with which changes can be made to a digital resource and the need to make some changes in order to manage the material means that there are challenges associated with ensuring its continued integrity, authenticity, and history.
  - **Fragility of Carrier Media** - the media on which digital materials are stored (such as CDs, DVDs, and digital tape) are inherently unstable and

### Rocket Science?

The datasets of NASA's 1976 Viking Lander expeditions to collect information about life on Mars were stored for future generations of scientists on magnetic tape. A few decades later the tapes were brittle and the data format could not be decoded.

NASA had to track down old printouts of data and retype it all.<sup>2</sup>

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<sup>2</sup> [www.cbsnews.com/stories/2003/01/21/tech/main537308.shtml](http://www.cbsnews.com/stories/2003/01/21/tech/main537308.shtml) (last accessed 25 February 2008)

without suitable storage conditions and management can deteriorate very quickly even though they may not appear to be damaged externally.

- **Passive Preservation is Not an Option** - allocating a priority to the preservation of digital resources is much more urgent than for paper archives. Unlike paper, a digital resource which is not selected for active preservation treatment at an early stage in its existence will very likely be lost or unusable in a few years' time.
- **Preservation Action is Needed Prior to Creation** - the nature of technology requires a lifecycle management approach to be taken to the maintenance of digital resources. A continual programme of active management is needed from the design and creation stage of a system onwards, if preservation of that system's digital resources is to be successful. This in turn leads to the need for much more collaboration between institutions, and changes to traditional IT and IM boundaries within an organisation.<sup>3</sup>

8. In addition, because digital preservation is a new and emerging business area (unlike analogue preservation), the market for managed services is limited, software is immature, standards are still being developed, cost models are in their infancy, theoretical and practical research is still being undertaken and specialist skills are in short supply. However, as made clear above, action still needs to be taken despite this uncertainty, and despite the risks of navigating a largely unexplored environment.

#### CD Rot

"CDs and DVDs are a lot more fragile than people think, and climate and storage all take their toll. I have had several DVDs which are unplayable just a few months after buying them."  
Jessica Ross, editor of *Computing Which?* May 2004<sup>4</sup>

### Alignment with Corporate Plans and Strategic Fit

9. The Strategic Plans for the administrations of both Houses provide the business context for a digital preservation strategy in the areas of:
- Promoting public knowledge and understanding of the work of both Houses (Commons primary objective 3; Lords core task 3)
  - Effective information management to support the work of the administrations and provision of ready access to it by the public (Commons' supporting task v; Lords' supporting objective 7) and
  - Maintenance of the integrity of Parliament's heritage collections (Commons' supporting task iv; Lords' core task 4).
  - Effective corporate governance and risk management (Commons supporting task iii; Lords' supporting objective 6)
10. Development of a bicameral corporate strategy for digital preservation will enable both Houses to deliver these strategic goals as they relate to the longevity of Parliament's digital information.

<sup>3</sup> See the *Digital Preservation Handbook* at [www.dpconline.org/graphics/digpres/stratoverview.html](http://www.dpconline.org/graphics/digpres/stratoverview.html) (last accessed 25 February 2008)

<sup>4</sup> [www.thisislondon.co.uk/music/article-10935291-details/CDs+can't+stop+the+rot/article.do](http://www.thisislondon.co.uk/music/article-10935291-details/CDs+can't+stop+the+rot/article.do) (last accessed 25 February 2008)

## Alignment with Other Strategies and Activities

11. This strategy relates to other key initiatives in the following ways:

- **I/KM Strategy** – the Digital Preservation Strategy is a sub-strategy of the Information and Knowledge Management Strategy being developed by the Information Services Directorates of both Houses.
- **IT Strategy** – the PICT IT strategy complements the I/KM Strategy. Digital Preservation appears on the IT Strategy roadmap in the Application Routemap under critical business systems, but there are also synergies with the Infrastructure Routemap under servers and hosting. Ultimately the data and storage strategies are also affected by digital preservation issues.
- **Parliamentary Archives' Aims and Objectives** - The Archives' mission is to safeguard the records of Parliament throughout their lifecycle - that is, from their creation or receipt to their destruction or archiving - and to maintain their accessibility thereafter, *no matter what their format*, so it is an excellent fit with this strategy. However, this strategy includes not just digital records, but digital assets as well.
- **SPIRE** – the archival outputs from any Electronic Document and Records Management System which are identified as digital archives will require preservation along with the other digital resources created by Parliament.
- **Digitisation Policy** – this recent development now appears on the Digital Preservation Roadmap in the Policy workstream.

### RIP Desktop

On 11 July 2006, Microsoft ceased its support for the Windows 98 Operating System. There were still 70 million users of the system across the world when it died, aged eight. **BBC Website, 2006**<sup>5</sup>

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"Until recently I used to be able to open documents produced in Word for Windows Version 2 in Word 2003. Now when I try to do this I get the following message: "You are attempting to open a file that was created in an earlier version of Microsoft Office. This file type is blocked from opening in this version by your Registry Policy setting."

**Daily Telegraph Technology Agony Column, 16 Feb 2008**<sup>6</sup>

## Strategic Vision

12. That Parliament's digital resources will remain authentic and accessible in the future to anyone who needs them, despite the inevitable changes to their hardware and software environment.

## Strategic Aims and Benefits

13. In support of the corporate objectives of the two Houses, this strategy will therefore:

<sup>5</sup> <http://news.bbc.co.uk/1/hi/5164450.stm> (last accessed 25 February 2008)

<sup>6</sup> [www.telegraph.co.uk/digitallife/main.jhtml?xml=/connected/2008/02/16/dlrick116.xml](http://www.telegraph.co.uk/digitallife/main.jhtml?xml=/connected/2008/02/16/dlrick116.xml) (last accessed 25 February 2008)

- ensure that the long-term digital memory of Parliament is not lost or inaccessible, or compromised in any way which could damage either House's ability to do its work, or its reputation.
- enable Parliament's mission to offer permanent public access to its online resources, for leisure, educational, academic or business use, and to support democratic accountability.
- prevent wasted expenditure on digitisation and other projects for online public access, by supporting a "create once: use many times" environment for digital assets of long-term importance.
- avoid nugatory expenditure on corporate systems whose digital content cannot be extracted and/or preserved for future use.
- provide a generic long-term preservation environment for Parliament's digital resources, reducing the need for multiple current systems to offer this requirement at additional cost and risk to those systems.
- introduce best practice in digital preservation within Parliament.
- contribute to wider digital preservation developments outside Parliament through sharing experiences, collaborating with suitable partners and influencing technological developments of direct or indirect benefit to Parliament.

### Business Justification

14. If Parliament were to do nothing about the challenge of digital preservation, the risks to its corporate aims would be profound. Effective information management and responsible heritage management, as well as supporting better public access to the work of Parliament, are key strategic aims of both administrations. Only by undertaking some kind of digital preservation can they be achieved successfully in the medium to long-term. Parliament would also be in danger of missing some significant business opportunities and savings.

#### What Parliament Has Lost Already

32 digital photo images of Works of Art. Stored on DVDs in the Curator's Office, these images are no longer accessible due to corruption of the data or the disks.<sup>7</sup>

15. Parliament will, of course, continue to record some of its principal activities on paper, but that will not capture the full range of information which Parliament now creates and needs to keep accessible throughout the 21st century and beyond. Parliamentary information is no longer necessarily of a kind which can be carried on a paper medium. For example, a hard copy print-out of the contents of a database would represent the information contained in it but would not allow it to be updated, searched and manipulated as intended. Some digital resources which Parliament might want to keep permanently – such as snapshots of the website – cannot satisfactorily be 'printed out' if a meaningful version is to be preserved. And some material worthy of permanent preservation is simply no longer created in analogue form: for example, digital audio-visual broadcasting feed, images of works of art, podcasts and virtual tours.

16. Most importantly however, the fact that key published records continue to be available in hard copy does not diminish the fact that users inside and outside Parliament have come to expect and depend on access to the online versions of Bills, Select Committee proceedings and Hansard. The appetite for online versions of Parliamentary publications is demonstrated by the fact that over

<sup>7</sup> As reported by Tessella Support Services' Digital Preservation Consultancy in January 2008. A copy of the report is available from the Parliamentary Archives.

1,000 people per day in mid-March 2008 were using the prototype digitised historic Hansard - despite the site having been publicised only by word of mouth. The 'Google generation' expects to be able to find and search much of what it requires by way of information online. So now that Parliament has decided to place many of its key publications on the web there is also a requirement to ensure that those publications remain authentic and capable of migration to the next accessible format (without loss of integrity) when their current manifestation becomes obsolete.

17. There are two drivers accelerating this trend. Firstly, future generations of staff (and current staff who were born later than the 1960s) will be increasingly disinclined to use paper versions of publications if there is an online version available – and will have lost the skills to store and locate the paper version; while secondly, hard-copy publications will be increasingly inaccessible to the public and specialist audiences as libraries continue to cancel subscriptions for hard-copy official publications and dispose of their hard-copy historical collections.
18. Both Houses are making increased use of web channels to receive or disseminate information to and from the Parliamentary process. One important success of the internet project has been the implementation of a web-based channel for the submission of deposited papers. In the Lords, there is a trend for the online versions of Lords' Business and the Official Report to be regarded as an important adjunct to the print version mandated by the standing orders, rather than a useful spin-off. In the Commons, the Modernisation, Procedure and other Committees regularly discuss and initiate new channels such as ePetitions and eConsultations. The Commons' Administration also varies its standing order to print some Committee evidence, publishing only to the internet, as an economy measure. This strategy provides much-needed infrastructure to underpin these activities and make them sustainable, as well as to improve the Administrations' ability to respond to the Houses' eDemocracy ambitions in the future.

19. If the website is now a significant means of disseminating published records of proceedings, then it is also fast becoming the main method of presenting digital images of Parliamentary interest to the world, for example through the image library and shortly through the Parliamentary Archives' catalogue. It might be argued that these digital assets are easy to recreate if lost, but while it may be *technically* straightforward, if the assets are of any scale the time and cost involved in doing so is likely to be very significant.
20. The recent digitisation of historic Hansard by the House of Commons Information Services Department cost £XK (excluding staff, consultancy and interim storage costs). Should that material become unreadable in the future through technical obsolescence, it will either need to be re-digitised or - if that is not possible - it will somehow have to be disinterred from its digital grave in a lengthy and expensive process known as 'digital archaeology', which has no guarantee of success.

#### The Costs of Digital Archaeology

The original Domesday Book, written on parchment in 1086, is still readable at the National Archives at Kew. The data collected by the BBC's 1986 Domesday Project, which was intended to provide a similar snapshot of Britain to mark the Domesday Book's 900<sup>th</sup> anniversary, is not. By 2002 the data was unreadable because the 30cm laserdiscs and the hardware to run them had become obsolete. It cost £2.5m to make the data accessible again through an EU-funded collaborative project with Leeds University.<sup>8</sup>

21. Expenditure on some digital preservation activities can therefore be offset against a) the cost associated with the risk of having to recreate the digital resource, and b) the cost of the 'sacrificial' analogue originals used in the course of digitisation. In the case of Hansard, an entire set of volumes from 1803 to 2004 were destroyed in the course of scanning, but it may not always be possible to sacrifice the analogue originals in this way. There may only be one occasion on which digital images can be created if the state of the originals means that digitisation will not be practicable in future due to further deterioration. And analogue archives would never be scanned if that involved the destruction of the originals. So if there is only one opportunity to digitise a unique record or publication, then it becomes even more crucial that the investment in doing so is not wasted.
22. Digital preservation costs can also partly be offset in other ways. At a time when space on the Parliamentary Estate is under extreme pressure, it is significant that over the coming years there will be a decrease in the quantity of paper records needing to be stored physically. We anticipate that more records will be created and managed digitally through systems such as that envisaged by the SPIRE programme (ie through electronic document and records management – EDRM). Likewise, there should be less need for multiple copies of Hansard or Acts in offices. A storage crisis in the Victoria Tower will be averted in the future if fewer paper records are arriving each year, while the intake of digital records increases. Of course, Parliament currently funds the preservation costs of its paper and parchment records: analogue preservation costs incurred by the Archives currently approach £XK per annum.<sup>9</sup> The refurbishment of the Victoria Tower to bring it up to the British Standard (BS5454) for Archival Storage between 2000 and 2004 cost

<sup>8</sup> See <http://www.ariadne.ac.uk/issue36/tna/> and [www.nationalarchives.gov.uk/preservation/research/domesday.htm](http://www.nationalarchives.gov.uk/preservation/research/domesday.htm) (last accessed 25 February 2008)

<sup>9</sup> This is the cost of 6.5 contract conservators, plus archival preservation and packing materials. It does not include the annual running costs of the Victoria Tower.

£7m. In addition, there is the annual cost to Parliament of £XK for the preservation services provided by the British Film Institute for audio-visual broadcast material from the Broadcasting Unit. Digital Preservation costs in the future will be *in addition* to this expenditure; it will not replace it. Historic paper and parchment records will still require preservation so it is best to think of digital preservation as simply a continuation of this activity, but in a different format, with its own challenges and requirements.

23. Until now, the full lifecycle cost of maintaining ongoing access to digital resources has not been taken into account when costing digital systems and projects. That is partly because in Parliament's current 'paper' business model, the cost of preserving records permanently does not generally fall on creating offices, but on the Archives, and also because until now the complexity and short timescales which relate to the preservation of digital resources has not been raised or appreciated.

#### Lost in Cyberspace

The UK Web Archiving Consortium (UKWAC) estimates the average life of a UK website is the same as a housefly – about 44 days.

Throughout this document footnoted hyperlinks have been given a 'last accessed' date. This is becoming good citation practice in reports because the phenomenon of the broken URL is now of epidemic proportions. Web pages are as much prey to digital deterioration as any other digital resource: they are a method of *presenting* information, not *preserving* it.<sup>10</sup>

24. So far these costs have mainly occurred in the areas of digitisation and website development, though in the future they will also encompass the selected content of record-creating systems such as SPIRE. Just like in a paper environment, there will be a requirement to maintain access to the non-current digital record – but in the case of the latter that will be beyond the life of the software which created it. For example, there are a number of areas where the retention dates for certain kinds of non-current record are very long indeed: far longer than the five-year lifetime of many office software programmes and systems. Pension records, personnel files, disciplinary records, staff reports and consolidated service histories can only be destroyed when the individual reaches their 80th birthday (or five years after last action, if later); health and safety records frequently have to be held for between 40 and 50 years; and various industrial relations and legal records for between 10 and 15 years.<sup>11</sup>
25. In this vein, a digital preservation strategy may be expected to provide a framework into which future investments in electronic systems – such as SPIRE – can integrate when considering how digital records may be preserved beyond the expected lifecycle of the investment (which is typically less than ten years, often closer to five).
26. There are also the demands of the Freedom of Information Act to be taken into account. This applies to all information held by Parliament, no matter what its format or age. Digital preservation will therefore enable Parliament to fulfil its obligations under the FOI Act for older digital information by ensuring continuing access to digital records which have outlived the software environment they were created in, thus reducing a substantial legal and reputational risk to both Houses.

<sup>10</sup> See, for example, the UK Web Archiving Consortium's list of sites it has harvested for preservation which are no longer available in their original location: [http://info.webarchive.org.uk/archive\\_report.html](http://info.webarchive.org.uk/archive_report.html) (last accessed 14 March 2008).

<sup>11</sup> See the Authorised Record Disposal Practice on the intranet at [pdvnsco.parliament.uk/archives/recordsmanagement/disposal/Disposal.htm](http://pdvnsco.parliament.uk/archives/recordsmanagement/disposal/Disposal.htm)

27. At the end of their lifecycle, digital records of historic or organisational value created by Parliamentary systems will become digital archives, to be preserved forever. But unlike paper records, there may only be a few years between a record's creation and its obsolescence. By providing a permanent digital repository for its archival records, Parliament will enable them to be transferred to safe digital custody as soon as is necessary, and certainly before it is urgent. There are already digital resources in Parliament which are in need of urgent 'first aid' if the immediate threat to them is to be reduced.

**At Risk in Parliament  
in 2008<sup>12</sup>**

- Works of Art Digital Images
- POLIS 1976-1983 data
- Digitised Hansard
- Previous Website
- Webcast audio-visual material
- Estates' CAD plans
- e-Deposited Papers

28. Without some action in the next few months, permanent loss of some unique digital resources is likely to occur (and has already done so in the case of some of the Works of Art images).

29. Indicative costs at this stage suggest an initial expenditure over the next five years of between £X to £X to 2012/13.<sup>13</sup> Once a solution and other structures are in place, there will then obviously be a continuing, permanent need to fund the preservation of Parliament's digital resources beyond that, currently estimated at £XK annually. Nevertheless, there are likely to be some significant cost savings as the quantity of digital resources being preserved grows. Scalability of any preservation solution will mean that unit costs for its contents will decrease over time, as the quantity of digital resources being preserved increases. Such is the increased public demand for access to online Parliamentary information that the amount of material which Parliament wishes to make available online, and therefore requiring permanent preservation, will continue to grow exponentially. In addition, the repository will experience further exponential growth over time as not only will the original resource require permanent preservation but so will all future manifestations of it.<sup>14</sup> In the early years of digital preservation we would expect to see a very small increase in staffing but this could be reduced in future as digital preservation activities cease being specialist activities and start to be absorbed into mainstream job descriptions.

30. Finally, Parliament also has the opportunity, if it desires, to influence the development of commercial preservation systems and/or contracted out preservation services. We would be entering the market at a very opportune moment. The current state of the market in these areas is such that it is likely that over the next few years collaborative projects led by public sector libraries and archives, or public-private partnerships, will emerge to shape the market for products and services. Such would be the size and importance of Parliament's requirements that its involvement in these initiatives would ensure that its own digital preservation needs – and those of the wider public sector – are met. The Parliamentary Archives already represents Parliament

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<sup>12</sup> As reported by Tessella Support Services' Digital Preservation Consultancy in January 2008. These are unique digital resources which need immediate attention.

<sup>13</sup> These figures are broken down in the accompanying Roadmap.

<sup>14</sup> This is quite a technical issue, but put simply current best practice suggests that each time the original is migrated to a new, accessible version, each subsequent version will require preservation as well as the original, in order to leave an audit trail in case future migrations do not succeed. Thus the process can be 'rolled back' to the last accessible version if necessary and another route followed.

on the Digital Preservation Coalition, a collaborative group of key national bodies with an interest in this area.<sup>15</sup>

### **Strategic Activities**

31. The aims of this strategy will be realised by undertaking seven areas of activity concerned with: the information environment, policy, preservation, presentation, standards, skills, and communications. To reduce risk, build expertise, and cost activities increasingly accurately, an incremental but very practical approach to digital preservation is being proposed.
32. **Information Environment** – this workstream will seek to influence decisions on the enterprise architecture and IT strategy which have a digital preservation impact, and will identify areas where planning for digital preservation needs to be embedded in Parliamentary systems and content, particularly within the PICT programme. The intention is to ensure that at the planning, design and build stage for all systems or content-creation projects whose outputs will result in digital resources, that digital preservation needs are taken into account as far as possible, particularly in terms of formats, metadata created, and export interfaces to a digital repository. An obvious first place to start is to incorporate checks within project mandate procedures and PID risk statements, but there will also be a need to work closely with the PICT development team to develop further our understanding of the issues involved. This envisages a collaborative relationship between Information Services and PICT which will develop preservation expertise in Parliament as a whole.
33. **Policy** – this workstream will provide the policy framework within which Parliament's digital preservation activities will take place. In consultation with key stakeholders, a general preservation policy will be written, to be backed up by specific policies in other key areas including acquisition, ingest and migration. These policies will be reviewed and updated during the five year strategy implementation period, in the light of external and internal developments and influenced by our growing knowledge and expertise. The workstream will involve those making policy in relevant IT and IM areas.
34. **Preservation** – this workstream will undertake the actual preservation actions required, and will be the largest area of activity. It will involve the identification of short- (up to 5 years) and medium-term (5-10 years) solutions for the range of digital resources requiring preservation, including the formulation, and management, of individual projects. Milestones will be:
  - taking emergency 'first aid' action on digital resources at immediate danger of loss in 2008/9.
  - manage the lifecycle of innovative digital assets being developed such as podcasts, blogs and virtual reality objects.
  - setting up a 'technology watch' function to monitor changes in technology and its impact on the risk exposure of Parliament's information
  - contracting out the preservation and presentation of specialist information types from 2009 onwards.
  - the specification, tender and implementation of an in-house digital repository for other formats, which will be available for use by 2011/12. The system will enable the ingest, monitoring, preservation planning, migration and reingest of migrated data in accordance with current standards.

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<sup>15</sup> See [www.dpconline.org](http://www.dpconline.org) (last accessed 28 February 2008).

- 'at risk' digital resources have been identified which will form pilot projects for the first contents of the digital repository from 2012 onwards.
- the first migration of data requiring preservation within the system into new formats is envisaged from 2013 onwards.

35. **Presentation** – this workstream will be dedicated to devising methods by which the public and staff can access preserved digital resources in a secure and efficient manner. Options will be considered in the light of wider website developments.

36. **Standards** – this workstream will identify, assess and implement the necessary standards required for the full range of digital preservation activities, working with existing areas of expertise inside Parliament and developing others. These will include:

- system standards
- preservation standards
- metadata standards
- trusted digital repository standards and certification
- open document/open source standards

37. **Skills** – this workstream will identify and develop the skills and competencies required by Parliament to undertake digital preservation activities in the future. Parliament currently lacks these skills, so in consultation with staff advisers and HR departments, the roles required to undertake digital preservation in Parliament will be detailed, and the actions needed to ensure that Parliament is best equipped to deal with this challenging new area will be taken. The step-by-step approach adopted in the Preservation workstream, and the timescales proposed, will enable Parliament to build up its skills in digital preservation in a controlled and manageable way.

38. **Communications** – this workstream will target effective communications about digital preservation in Parliament, seeking to influence and inform the following stakeholders:

- senior management in Parliament
- information managers in Parliament
- content creators in Parliament
- PICT
- the public
- members of both Houses
- current or potential partners and collaborators.
- the digital preservation community at large.

In particular, there will be a concerted effort to embed an understanding of, and support for, digital preservation principles and practice among key staff in PICT and Information Services, and to gather together new constellations of staff from the IM and IT functions within Parliament, based on a foundation of mutual respect and collaboration.

## Risks

39. In conclusion, the comparative risks of doing nothing, delaying the strategy, or adopting it, can be summarised as follows:

### 40. Doing Nothing

- Loss of online information in the medium to long-term, and therefore inability to provide the public with the information it needs: risk to key corporate aim
- Loss of corporate records in digital form, with the associated governance and heritage damage that would result: risk to key corporate aim
- Loss of investment in digitisation projects which it may not be possible to replicate due to financial or conservation reasons
- Additional costs incurred through meeting preservation requirements of individual IT systems in a reactive, ad hoc fashion.
- Cost incurred by undertaking digital archaeology of lost resources (see page 6)
- Reputational risk – Parliament has criticised government in this area so not to be taking action itself would be viewed adversely.

#### 41. Delaying Adoption of the Strategy and/or Roadmap

- Loss of digital resources requiring immediate 'first aid' and loss within 3-5 years of those 'at risk' (or additional expense incurred in retrieving them)
- Failure to anticipate preservation needs and to put in place preservation planning early enough, leading to extra costs when strategy is adopted
- Will create a gap in a key part of Parliament's IM/KM strategy currently under development
- Failure to join up the IT strategy with IM strategies at an early enough stage leading to lost opportunities in the areas of data and metadata management, storage management, system development, enterprise architecture and the evaluation and adoption of open source standards
- Narrowing or closing the two year 'window' which currently exists to develop policies, skills and knowledge before preservation actions become urgent
- Limited ability to influence the market for preservation systems and/or services.

#### 42. Adopting Strategy and Roadmap

- Cost. There are considerable start-up and ongoing costs of committing to preserving digital resources in the same way that there are in preserving analogue heritage. In addition, there is the risk that estimated costs may be inaccurate or not yet stable in the market. *Mitigation:* contingency has been built into the costs, and will be subject to programme/project controls but in addition a close eye will be kept on developments in this area in the outside world.
- Taking a preservation approach which turns out to be a technological 'dead end'. *Mitigation:* the strategy and roadmap provide for our policies and procedures to be devised with the help of (or peer-reviewed by) external experts and/or in collaboration with other organisations.
- Choice of wrong systems and wrong services. *Mitigation:* We will acquire solutions in collaboration with PICT and external experts, taking into account actions by comparable organisations and where possible acquiring shared or joint solutions. We will implement solutions in iterative phases, rather than in a single 'big bang'.
- Lack of skills and experience in Parliament. *Mitigation:* the strategy provides for training opportunities and there are already contacts with the digital preservation community in place. The stepped approach outlined in the strategy will allow the incremental development of new skills during on-the-job learning.

- Change management. Traditional IM and IT boundaries will break down, which may lead to negative outcomes unless well handled. *Mitigation:* composition of programme/project boards will be key, as will communications.
- Accusations of being too alarmist. Views may be expressed that the risk to digital information is being exaggerated and that no action is needed until losses are evident. *Mitigation:* Management Board sign-off required for strategy, followed by implementation of communications plan, with detailed explanations of why and how the strategy is being adopted.
- Lack of support for or understanding of the strategy once underway. *Mitigation:* Management Board sign-off required for strategy, followed by implementation of communications plan.

**Digital Preservation Working Group**  
**24 April 2008**