



Digital Rights and Asset Management

Glasgow

19th October 2006





Overview

- What is digital preservation
- Solutions
- What is the DPC
- Digital preservation needs assessment



Digital preservation

- Preservation: archiving activity in which data is maintained over time so they can be understood over time and through changes in technology
- Digital data is fragile

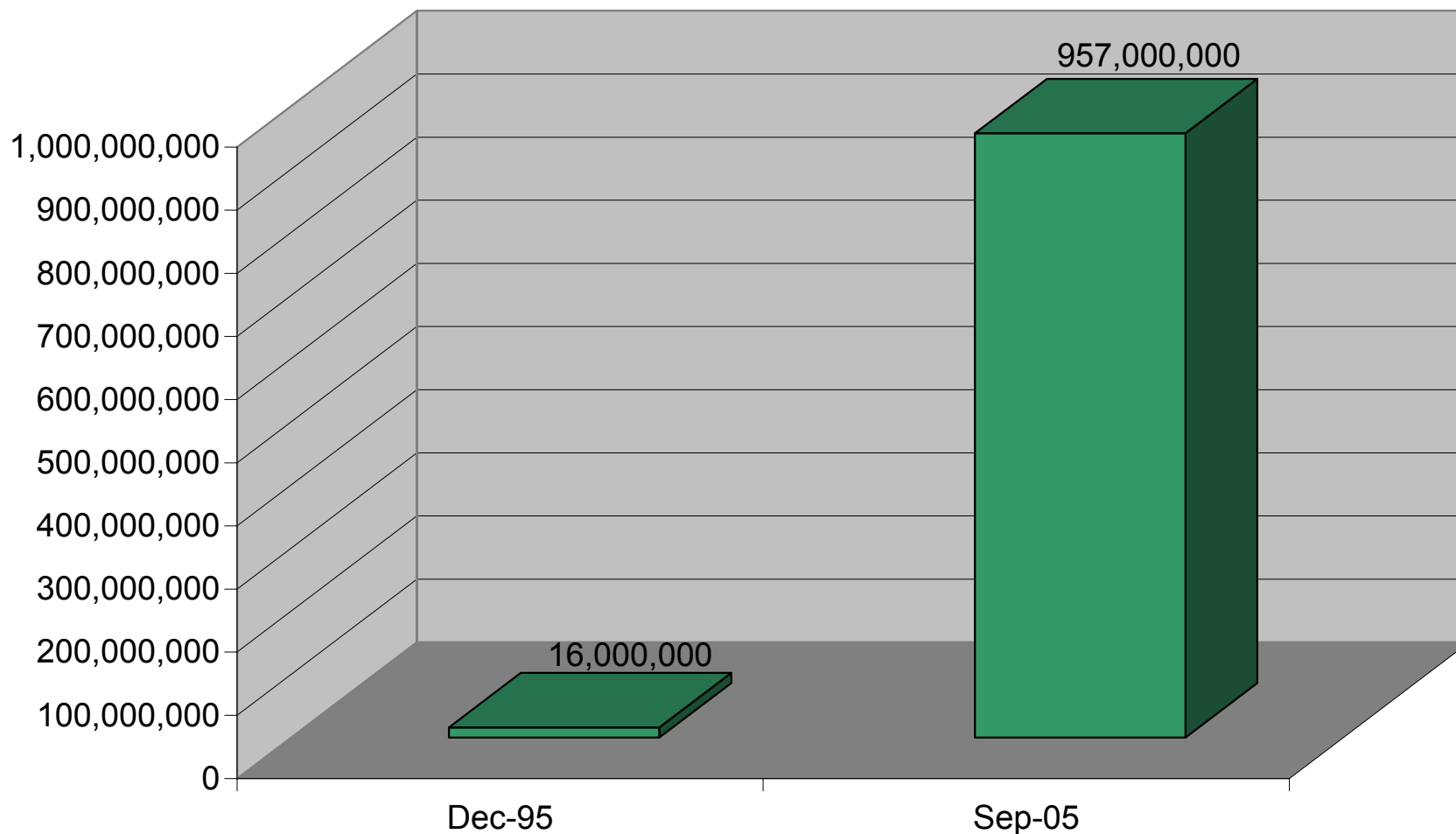


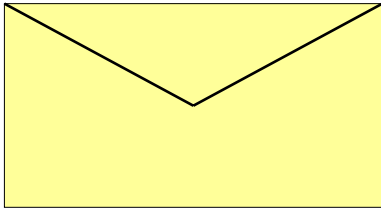
“Digital documents last forever,
– or five years, whichever comes first”

(Rothenberg, 1995)



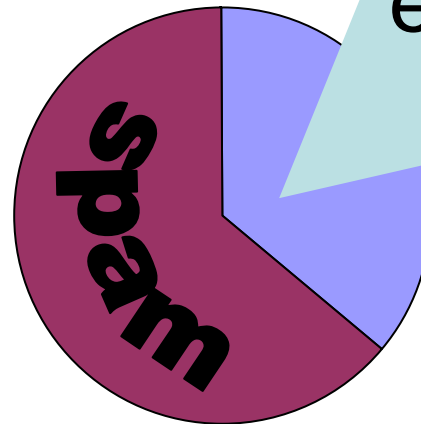
Global Internet Users – 10 year comparison





Radicati Group Survey (2005)

Estimates
135,600,000,000
emails are sent
worldwide each day
though **64%** of
these are thought to
be 'spam'.



So...a possible
48,816,000,000
legitimate
emails are sent
each day



Remember these.....



Wordstar



Examples

- BBC Doomsday disks
- NASA
- US Government
- First e-mail!





'Bytes don't survive well in regimes of benign neglect'

(Clifford Lynch)

0 0 0 0 0 0
1 1 1 1 1 1
0 1 1 1 1 1
0 0 0 0 1 1
0 1 1 0 0 1
0 0 1 0 0 0
1 0 1 0 1 0
0 1 0 1 0 1

Binary

Binary



Decay of the storage medium



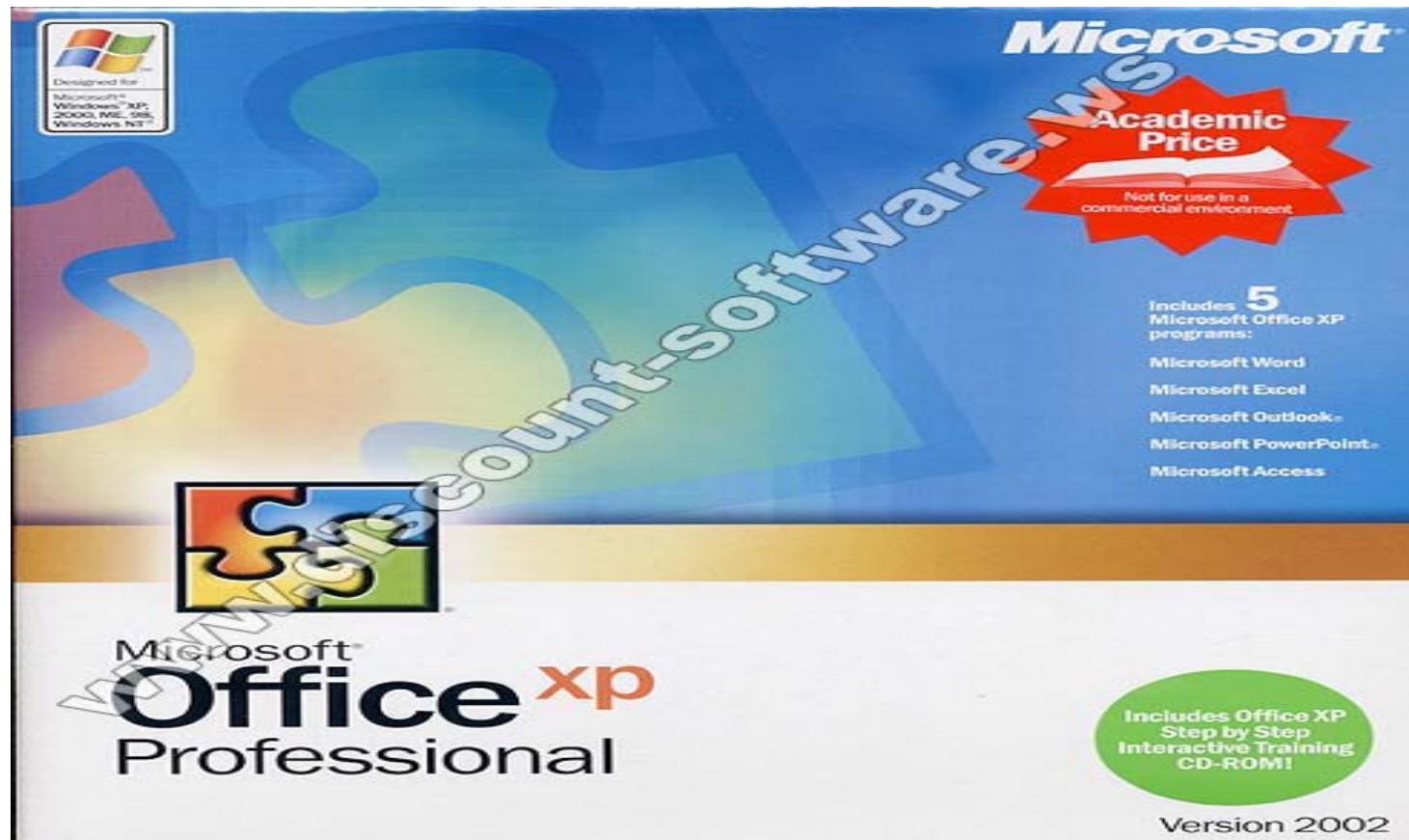


Technological obsolescence





Software, operating systems





Migration & Refreshment



Rolling over' 9-track tapes (~1996).

Right: The Forth Rail Bridge in Scotland.
© 1998-04 Firstcity Publications



Emulation

- **Emulation** involves creating computer programmes so that old data created on obsolete software can be read. Emulators enable up-to-date computers to mimic old ones. This preserves the 'look and feel' of an object so it can be rendered in the way that it was originally created.
- BBC Domesday Project





Tips....

- Maintain neutral file formats where possible
- Consider open-source
- Document data right from the start
- Know access considerations
- Consistent identification
- Get senior management buy-in
- Produce a policy
- Make a start where possible.....



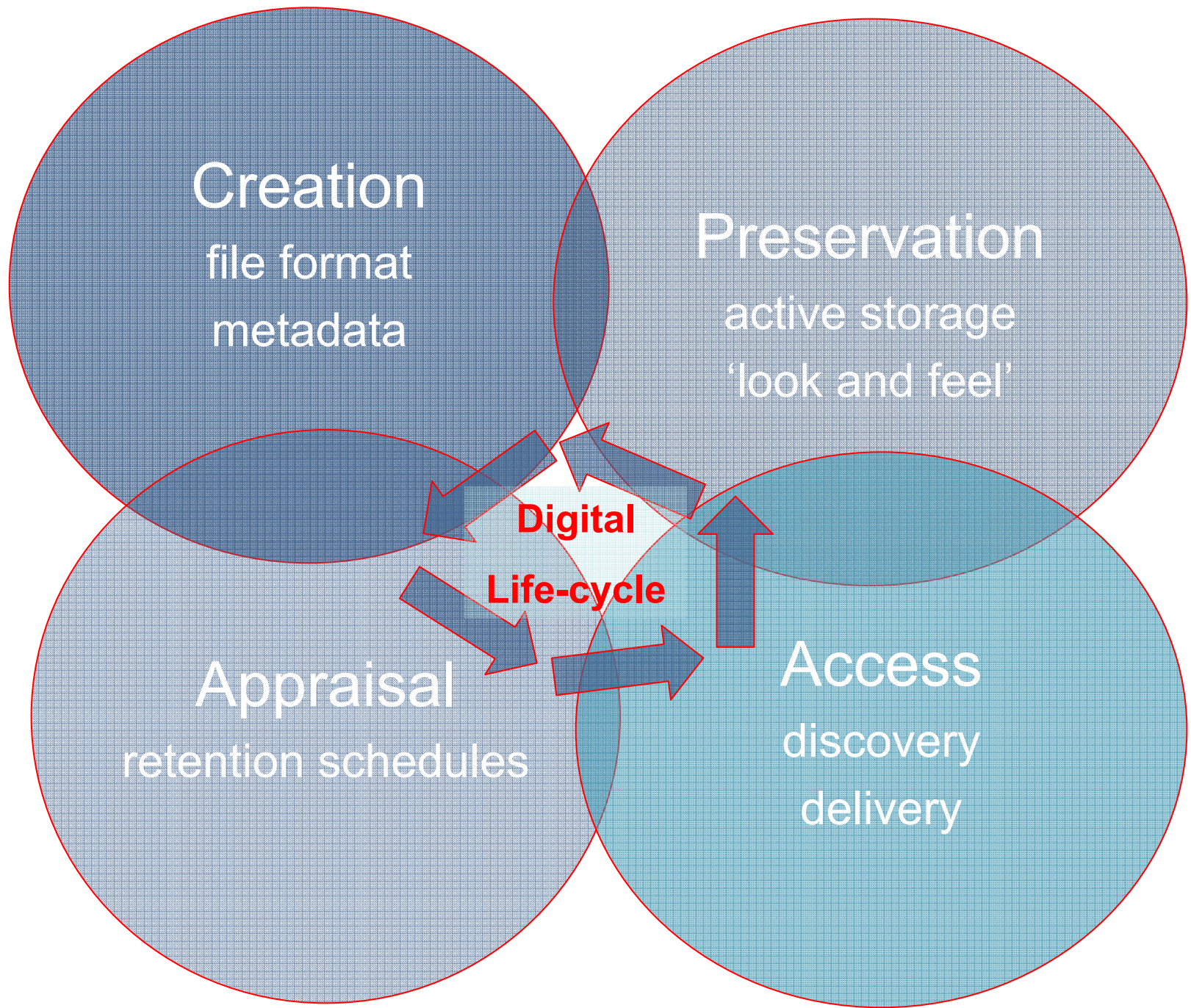
Life cycle management

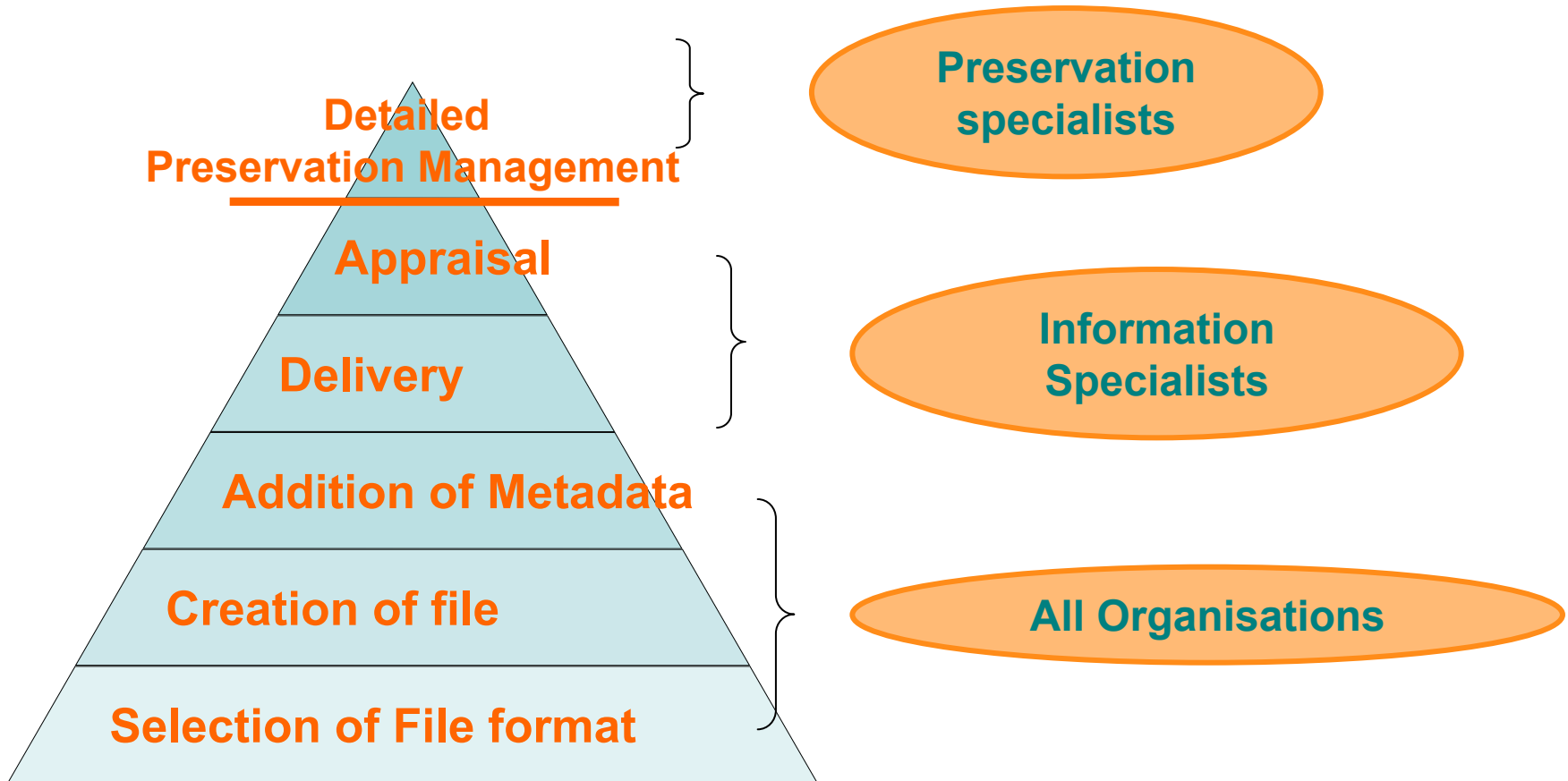
- **Responsibility** for digital archiving?
- **Collaboration** of data creators, information professionals and managers at an early stage
- **Active management** throughout will greatly assist long term preservation (e.g. choice of suitable file format at an early stage)



Life cycle management

- Digital materials need to be actively managed over time [no “benign neglect”]
- Preservation management needs to start as early as possible in the lifecycle, preferably from creation
- Stages: Capture, appraisal & retention, metadata, access, preservation, destruction
- Many more people need to be involved – creators are particularly important
- Roles and responsibilities are less clearly defined

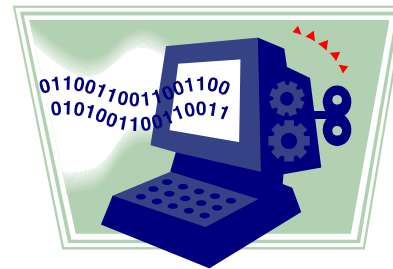
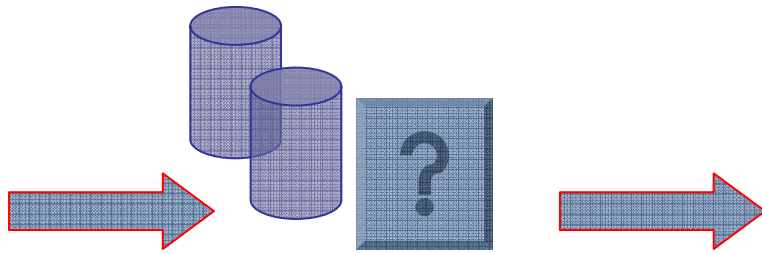




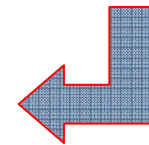
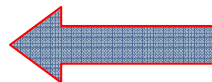


Metadata

- Administrative – who, how, when
- Bibliographic – what
- Authenticity, access rights
- Technical



**Authenticity,
Who, How**



Records

- Are they Authentic?
 - Do they have Integrity?
 - Are they Reliable?
 - Are they Usable?
- ISO 15489-1
 - Also ISO 17799 (InfoSec)



Legal considerations

- Freedom of Information Act, Scotland, 2001
- Data Protection Act, 1998
- Copyright, Intellectual property rights



Aim of DPC

- Overall aim of the Coalition is to secure the preservation of digital resources in the UK and to work with others internationally to secure our global digital memory and knowledge base
- Aims to develop a UK digital preservation agenda within an international context
- By 2006 - 'shift in public awareness', 'an authoritative voice'



State of play in the UK

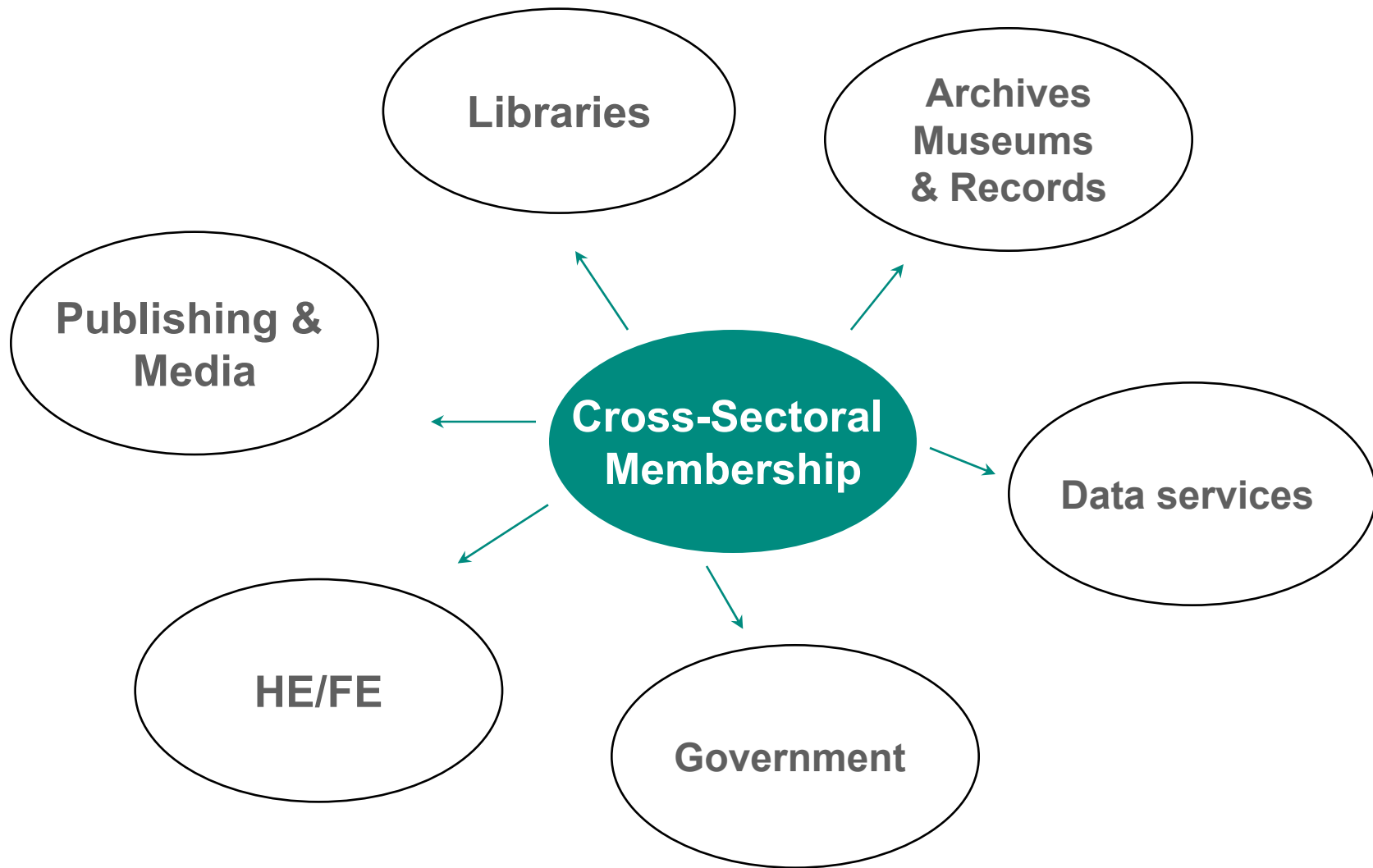
- No overall national policy
- Funding is often short-term
- Main developments;
 - The National Archives
 - National Libraries
 - JISC programmes – HE & FE funded
 - DPC
 - Digital Curation Centre
 - UK Web Archiving Consortium



Activities

- Formed to advance digital preservation agenda in the UK and to work with others internationally
- Membership organisation, formed 2002
- 30 members
 - University of Southampton
 - Oxford Archaeological Unit
 - Publishers Licensing Society
 - House of Lords
 - Open University

Cross-sectoral





Forums/Briefing days

- 'Large-scale archival storage'
- 'DCC/DPC Cost models'
- 'Preservation metadata'
- 'OAIS'
- 'Web Archiving'
- 'DCC/DPC Policies for preservation'
- 'Digital repository models'

Handbook

- Preservation management of Digital Material Handbook
- Developed by Neil Beagrie and Maggie Jones in 2000
- Offers a practical step-by-step guide for those involved in all stages of digital preservation
- Used as a basis for workshops and tutorials, and may be used for more intensive training programmes
- Decision Tree
- Costs and business modelling





Technology Watch Reports

- User-friendly reports the DPC has commissioned. Authors avoid complicated jargon-filled language
- Reports focus on emerging preservation standards, technical formats, and developments in tools which are critical in assisting digital preservation activities
- Reports available on the DPC website:
 - - *'Introduction to OAIS'* – Brian Lavoie/OCLC
 - - *'Institutional Repositories'* – Paul Wheatley
 - - *'Large-Scale Archival Storage'* – Jim Linden, Sean Martin, Richard Masters and Roderic Parker/British Library
 - - *'Preservation metadata'* – Brian Lavoie & Richard Gartner/U of Oxford



DPC Guides

- Practical guidance:
- 'Directory of repositories and services in the UK'
- 'Contracting out for preservation services'
- IT vendors survey

‘What’s New in Digital Preservation’

- Quarterly report National Library of Australia’s PADI and the DPC (UKOLN compiles this for the DPC)
- PADI, set up in 1996, is a comprehensive subject gateway to international digital preservation resources
- The reports list a summary of international preservation activities
- Information compiled from the PADI gateway and mailing lists



The screenshot shows a Mozilla Firefox browser window displaying the website <http://www.dpconline.org/graphics/whatsnew/issue12.html>. The page features the DPC logo and navigation menu on the left. The main content area is titled "DPC/PADI What's new in digital preservation" and describes "Issue no. 12 (October 2005 - February 2006)". It lists the compiler as Deb Woodyard-Robinson for the Digital Preservation Coalition (DPC) and Marian Hanley for the National Library of Australia. The issue date is 1 March 2006, and it is available as a print-friendly PDF (143KB). A note mentions that known problem links in the online issue and PDF are updated but it is not always possible to annotate the amendments in the PDF with a date or other information which may appear here. The page also includes a "Contents:" section at the bottom.

Digital Preservation Award

- £5,000 - recognises achievement in the digital preservation field
- Sponsored by the DPC, it is aimed at encouraging creative and
- Practical approaches to the preservation of 'born-digital' materials
- The 2005 winner was the PREMIS group – a team of experts from 30 countries – for their work on preservation metadata
- September 2007





Digital Preservation Training Programme



Digital Preservation Coalition





Digital preservation training programme

- Week-long training programme
- Participants limited to 24
- 10-14 October 2005 = UK pilot
- Core modules developed in partnership with Cornell
- Given UK emphasis
- Intended to fill gap expressed in 2003 DPC Members survey and was one of the recommendations for further action



UK Needs Assessment

- Challenge of quantifying the problem
- Challenge of articulating the danger
 - Between hysteria (Digital Dark Ages) and
 - Complacency (the problem is exaggerated)
- More facts and figures on which to base sustainable forward plans

	Yes	No	Don't know
Is there a high level commitment to digital preservation in your organisation?	52%	33%	16%
Is there adequate funding allocated to digital preservation in your organisation?	20%	54%	25%
Are there clear responsibilities for digital preservation in your organisation?	33%	55%	12%
Does your organisation have a digital preservation strategy, or any other policy or strategy document which specifically refers to digital preservation?	18%	77% ⁸	5%

Table 1: Commitment to digital preservation (source: 2005 DPC survey)

⁸ Includes 43% who replied that a strategy was being created.

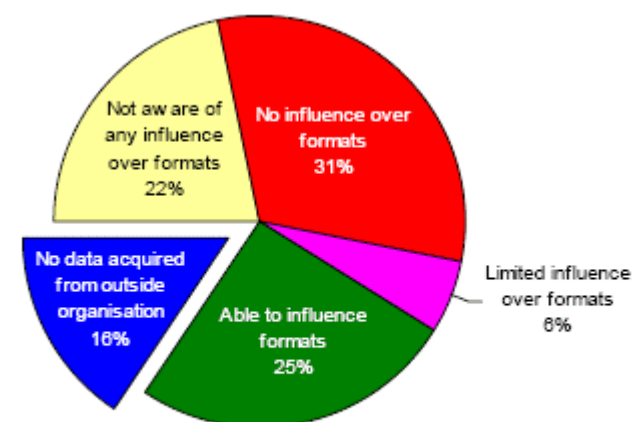
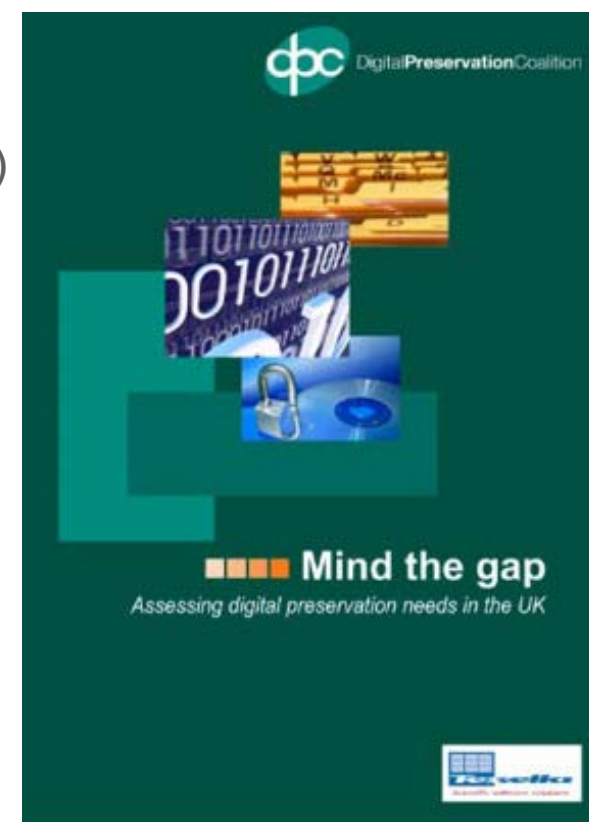


Figure 2: Influence over formats of externally sourced data (Source: 2005 DPC survey)

‘Mind the Gap’

- Challenge of quantifying the problem
- Challenge of articulating the danger
 - Between hysteria (Digital Dark Ages) and
 - Complacency (the problem is exaggerated)
- More facts and figures on which to base sustainable forward plans
- Information which will engage funders and decision makers
- Recommendations and Needs





Key findings and recommendations

- Growth in awareness needed
- Awareness into action
- New discipline
- Government policy
- Legal and regulatory frameworks
- Collaborative standards and methodologies



Summary

- Digital Preservation is a major issue.
- Much progress has been made but resources continue to grow in scale and complexity.
- Building the necessary infrastructure will require continued and ongoing effort for some time.
- If we're to map out a sustainable strategy we need facts and figures to support it.



Contact

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