Digital Futures: Strategies for the Information Age

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Overview: Digital Preservation and Collaboration

- The role of public repositories: My View...
- Some thoughts about Time and the Attention Economy
- The role of digital preservation for ePubs
- Managing containers, content and context
  - Preserving bits, bytes and/or behaviour?
- Why collaboration?
- How does good collaboration work and what will success look like?
- Digital Futures: what are our strategies to engage
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The role of public repositories: My View...

My view:

A place where a community nourishes its memory and its imagination – where it connects with the past and invents its future.

Purpose:

To educate, enlighten and entertain - to promote and disseminate and to preserve culture

- This may be preserving the record of a way of life or the very roots of a culture, its language, literature, music and traditions
- Nature, politics, and war have always been the mortal enemies of public repositories
It is about time!

- **Digital Preservation**
  - the time to take action is short
  - those actions are continuous over time

- **Strategic Time Problems:**
  - Perpetuity is a very long time!
  - Time is the scarce resource in our information age
Some ElPubs Statistics *

- 20-25,000 peer reviewed journals published worldwide
- 60% online (90% for English language in UK and USA)
- STM journals publisher revenues exceeded $5 billion in 2004
- Combined spend by UK HE and US ARL libraries of ~$1 billion in 2006/2007
- Lynne Brindley (BL) estimates that 40% of UK research monograph output will be in electronic format only with a further 50% in hybrid formats. Only 10% in print only format by 2020.

The Attention Economy

- The information explosion:
  - “this year chemists will publish a hundred times as many papers than in 1901, when van’t Hoff received the first chemistry Nobel prize.” (Schummer, 1999)

- The Doubling Period for information:
  - In 1961 the doubling period for the total amount of information in science was between 12-15 years, by 1990 it was down to every 6 years. Some think it is now as short as 1 year or even less.

- The Attention Economy
  - “iPod therefore iAm”
    Cover headline, Newsweek July 26, 2004
The Attention Economy

- Information has to be attended to:
  - selected or discarded,
  - read or not read,
  - but it cannot readily be ignored.

- Decision making is eroded by too much choice

  “The ordinary man believes he is free when he is permitted to act arbitrarily, but in this very arbitrariness lies the fact that he is unfree”.

Georg W. Hegel
The Attention Economy

- In the Attention Economy there is a deficit of attention:- the ability to attend to information in this information overload.

- We will thus compete:
  - for attention,
  - for eyeballs on our products and resources,
  - for time and energy from our communities.
What does this mean for the future of ePubs?

- Attention is vital to economic sustainability.
- Access is valued more than preservation by consumers.
- Without access there are very few long term preservation strategies that will be economically sustainable.
- Thus digital preservation is of heightened importance, but must always be considered from the perspective of access.
Consequence of the attention economy: CHOICE

- For consumers choice is a double edged sword.
- Selection is actually a good thing!
  - best in breed
  - Libraries and other memory institutions still have a role
- For scholars: does choice increase the resources to assess, map and mine for results?
- Choice is not helpful if it just leads to attention deficit and if the resources are of dubious authority.
  - Publishers still have a role
Sustaining Long Term Access

Two key concepts to consider in sustaining long term access:

- Sustainability
- Digital Preservation

**Sustainability**: A product or process that can be maintained over a long period of time, especially after grant monies disappear, that is beneficial to stakeholders & the host institution.

**Question**: what do we sustain?

**Digital Preservation**: The management, maintenance and provision of long-term access to digital content or resources.
Planning for Digital Preservation: the issues

- Digital preservation issues come up much faster than traditional preservation issues: there is no accidental preservation
- Digital resources need on-going attention
- Building a preservation strategy into your activity from the start is essential to success
- The content of digital resources is only accessible with the aid of intermediary technologies
- Digital resources are complex
- Reliant upon a specific combination of formats, software and hardware to operate correctly
What are we preserving and why isn’t it easier?

- Digital containers and content
  - files, data objects, the bits & bytes
  - including technologies: software systems; hardware: websites, access and delivery systems
  - metadata

- Context:
  - Behaviour or the contextual meaning derived from the surroundings, circumstances, environment, background or settings which determine, specify, or clarify
Managing Containers and Content

- Containers are well managed
  - Managing containers as an achievable archival goal has led to a biblio-centric view where the containers are described and the contents and context of the information containers inferred from metadata, indexes, catalogues, classification schemes or collection management.

- Digital means content is now managed
  - an additional task to traditional approaches
  - In a world where information and content increasingly are unbound from containers, the containers cannot act as guides (Otlet)

- Managing context remains very challenging
Key Question: is the value in the wine or the glass?
For ElPubs that question becomes...

- Is the value in the publication (container) or the content?
- Can we address context?

So:

- What are the significant characteristics?
  - What are the digital objects that make up your resource?
  - What is the purpose of your digital resource?
  - Who is it for – what is the community of use?

- Very difficult (if not impossible) to ensure your resource stays exactly the same in the future
- What can change without adverse effects?
- What changes must be limited, and by how much?
- How can you check changes are acceptable?
- How will you pay for it all?
## Where will it hurt?

*100 Year Archive Requirements Survey 2007: ‘Top Pain Points in Long-Term Digital Retention’*

Storage Networking Industry Association  

$n=276$

<table>
<thead>
<tr>
<th>Pain Point</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Media Migration</td>
<td>12%</td>
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<tr>
<td>Maintain Readability</td>
<td>10%</td>
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<tr>
<td>Technology Obsolescence/Upgrades</td>
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<tr>
<td>Lack of Business Support/Commitment</td>
<td>10%</td>
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<tr>
<td>Cost</td>
<td>9%</td>
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<tr>
<td>Classification</td>
<td>8%</td>
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<tr>
<td>Lack of Collaboration</td>
<td>7%</td>
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<tr>
<td>Discovery &amp; Deletion Difficult</td>
<td>6%</td>
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<tr>
<td>Too Many/Legacy Formats</td>
<td>6%</td>
</tr>
<tr>
<td>Lack of Expertise/Discipline</td>
<td>5%</td>
</tr>
</tbody>
</table>

*Top Pain Points in Long-Term Digital Retention’ in Storage Networking Industry Association (2007)*

100 Year Archive Requirements Survey:  

[www.snia-dmf.org/100year/](http://www.snia-dmf.org/100year/)*
This Unfunded Mandate has a big impact on libraries and publishers alike.
Collaboration: going there together

Collaboration is (checking my dictionary):

1: *to work jointly with others or together especially in an intellectual endeavor*

2: *to cooperate with or willingly assist an enemy!*
Collaboration matters because

- “No man is an island, entire of itself” John Donne
- “some may lead, some may follow, but none of us can go it alone…” Hilary Clinton
- If you work collaboratively you can often obtain greater resources, recognition and reward when facing competition for finite resources*.

http://users.fmg.uva.nl/lleydesdorff/cswagner07/index.htm
Collaboration: 3 key attributes

- If collaboration is going to work then everyone involved will need to keep these key attributes in mind

- **Contribute**

- **Take responsibility**

- **Value others viewpoints**

- **Do not allow the perfect to be the enemy of the good**
What does successful collaboration look like?

- We Win!

- The “Dialogic” Model

- More money to achieve goals

- More experience to call upon, more champions, more friends

- Potentially a bigger audience

- More sustainable resources
Collaborative digital preservation activity

- Establishing standards/Standards
  - OAIS Reference Model
  - Preservation metadata (PREMIS)

- Developing technical and organisational infrastructures
  - LOCKSS and CLOCKSS
  - PRONOM/GDFR (registries)
  - JHOVE, DROID, New Zealand metadata extractor etc.
  - MetaArchive
  - FCLA DAITSS (Dark Archive in the Sunshine State)
  - etc.
Katherine Skinner and Martin Halbert, "The MetaArchive Cooperative: A Collaborative Approach to Distributed Digital Preservation"
Library Trends, Volume 57, Number 3, Winter 2009
http://muse.jhu.edu/journals/library_trends/toc/lib.57.3.html
Conclusion: reflections on the wine and the glass...

- The Attention Economy is defining the user expectations and sustainability agenda.
- The global annual cost of doing and disseminating research represented in journals is ~$350 billion *
- Digital preservation is an unfunded mandate for both libraries and publishers.
- Almost no library or publisher can go it alone.
- Collaboration is the answer to resolving out digital futures – we must work together!

* www.rin.ac.uk/costs-funding-flows
Your Questions

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