Digital preservation – a European perspective

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Outline

- The digital preservation landscape – the main drivers
- Why is it important?
- What are the key problems?
- Why is the Commission concerned? And what are we doing? What are the implications for and roles of the different stakeholders?
- Conclusions – what needs to happen?

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Digital preservation landscape

- Increasingly diverse and varied picture
  - expanding context has implications for organisational responsibilities & infrastructures and for technical solutions
- Main drivers
  - Exponential growth
  - Complexity of content
  - Instability, dynamic, short-lived
  - Changing communication channels
  - Users as content creators
  - Thrust of ICT industry to better tools & means, bringing rapid change

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Digital preservation landscape

- These drivers have implications for how we view the preservation problem:
  - Shift from tackling preservation at end of creation life-cycle to embedding preservation features increasingly early in the creation process
  - Need to monitor change in documents and content, giving rise to issues such as version control, authenticity
  - Involvement of new stakeholders, in public and private sector – with implications for organisational and infrastructural approaches

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Why is preservation so important?

- Society's need to maintain the cultural and intellectual record of its actions – enshrined in the stewardship and curatorial roles of archives, libraries and museums
  - Context of information – our need to re-trace information paths in order to reconstitute the accurate record, often with legal implications
  - Preservation and access are intertwined – we preserve for future accessibility, and access can underpin preservation strategies
- Economic considerations
  - Current and future value of the knowledge and information

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Core problems

- Legal
  - Copyright
  - Deposit strategies for highly distributed content, linked cross-borders
- Financial
  - Safeguarding the investments in creating the content and risk of losing these in relatively short periods of time
  - Costs of maintaining digital archives and repositories
- Technical and organisational
  - Rapid technical change and obsolescence – limited lifetimes of hardware and software
  - Authenticity and integrity of content
  - Trust, quality of repositories – and how to translate that into durable infrastructures

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Why is digital preservation a problem to be tackled at European level?

- Scale and dimension of the problem is intrinsically trans-national as is scope of the content we are dealing with
- Relates to our existing responsibilities
  - Regarding existing legislation (especially copyright and IPR)
  - Research – under FP7
- Consolidate and optimise approaches for cost-effectiveness
  - Remove fragmentation
  - Avoid redundancy, where it is not efficient
  - Do things once, share solutions and practices, spread investments

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What the Commission is doing

- Direct actions by the Commission and leveraging actions for other stakeholders – the Member States and organisations
- Working on policy, strategic, and technical levels
- Marriage of mandated top-down responsibilities (through politically-driven actions) and bottom-up stakeholder driven initiatives

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What the Commission is doing

- On policy level
  - "i2010 digital libraries": digitisation and online accessibility of cultural material and digital preservation
  - Communication followed by Recommendation of the Commission of 24 August 2006, endorsed by Conclusions of Council November 2006
  - Communication on "Scientific information in the digital age": access, dissemination and preservation

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Council Conclusions – following up the Commission Recommendation

- Council Conclusions – leveraging key actions for digital preservation in the Member States
  - establishing national strategies for long term preservation and deposit – by mid 2008
  - Starting in 2007, to developing quantitative and qualitative targets **including the associated financial planning on a multiannual basis for deposit**, digitisation and online access of cultural material and **long-term preservation**
  - By 2009**,** established legislative or other effective framework in support of digital preservation (with provision for legally mandated deposit institutions, web-harvesting, multiple copying and migration)
  - Digitisation workflows should integrate relevant technical standards for digital preservation standards
- Commission is supporting this, eg by Call for tender for a study on “Socio-economic drivers and impact of longer-term digital preservation “

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What the Commission is doing

The strategic level

- High Level Group
  - Sub groups on copyright and scientific information, and work on public private partnerships
  - Taking forward recommendations to address framework conditions
- Member States Expert Group on Digitisation and Digital Preservation
  - Monitor progress, forum for cooperation with MS and Commission, support exchange of information and good practices

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What the Commission is doing – technical and operational level

Research

- FP7 has digital preservation as clear research topic – continues research lines started in 2005/6

- Evolutionary scenario
  - Complete the current portfolio of projects addressing the topic of digital curation and preservation
  - Extend stakeholder communities involved
  - Structure research - extend cross disciplinarity
  - Centres of competence – services, knowledge, outreach and support for emerging infrastructures
- New approaches
  - Explore **possibilities offered by new ICT for new approaches to digital preservation**
  - Re-think approaches and concepts

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FP7 – ICT programme research on digital preservation

- New approaches – rationale
  - Increase in volume, dynamic and ephemeral nature of Web-based resources
  - Identifying how and what to keep – original context plus enabling future use
  - Look at the problem considering the specific nature of born-digital content – do not let the approach be pre-determined by traditional organisational contexts
  - Context of the problem and scope of the research benefit from considering the needs of the commercial sector government organisations, and individuals
  - Embedding preservation at the earliest possible level of the content life-cycle
  - Reviewing fundamental principles and exploit the emerging capabilities of cognitive systems to develop innovative automated solutions to organising digital memory

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Experts' contributions to future research under FP7 - ICT

Impact in the short / medium term: preservation of digital resources will remain mostly centred on traditional stakeholder approaches

- Focus on needs of some key user communities
  - Memory preservation organisations
  - Scientific data resources
  - Multimedia archives
- Systems and tools supporting key digital preservation functions
- Examine how to take into account other issues (interoperability, DRM)
- Infrastructure issues: registries, certification, authentication, accreditation
- Awareness of the broader scope of the problem

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Experts' contributions to future research under FP7 – ICT

Impact in the medium term

- Through research aimed at addressing key technological problems
  - More cost effective approaches for ingestion and characterisation
  - Scalability of computing and storage resources (distributed architectures)
  - Heterogeneity (formats, platforms, objects, data semantics) across space and time
- Increased capacity of support infrastructures dealing with registries, certification, authentication and accreditation
- Drivers for digital preservation and their translation into sustainable economic models

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Experts' contributions to future research under FP7 - ICT

- Impact in the longer term: developments in digital technologies are likely to enable new approaches to digital preservation:
  - How to know what needs to be preserved
  - How to deal with high volumes, dynamic volatile content
  - Models for digital objects capable of supporting self-preservation features
  - Anticipate the context of future access and re-use of preserved information
  - Ability to preserve not only data but context of meaning and use
  - Assure integrity, authenticity and accessibility

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To conclude… the main challenges

- Recognition of the problem
  - Improved awareness – and political will
  - Need to pursue via pro-active strategies
- Organisational infrastructures, allocation of responsibilities – marriage of top-down mandated responsibilities with bottom-up stakeholder approaches
- Promotion of good practice and sharing of experience, between institutions and across institutional boundaries
- Recognised leaders – from within the stakeholder communities. Build on shared approaches, sharing ownership of common issues to develop critical mass and leverage
- Continued development and implementation of research results

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And two final messages…

- Digital preservation will only happen through the combined and continued efforts of us all
- We are just at the beginning
  - In examining how to safeguard the future accessibility and use of today's digital knowledge, we are embarking on a long-term journey – but one which is exciting

And Thank you for your attention

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Links

- Digital Libraries initiative
  http://ec.europa.eu/information_society/activities/digital_libraries/index_en.htm

  Digital Cultural Heritage, Digital Libraries and Digital Preservation
  http://www.cordis.lu/ist/digicult/index.html
  infso-digicult@ec.europa.eu

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