Digital Echoes Symposium

Coventry

8 January, 2014

A European perspective on digital cultural heritage

Antonella Fresa

Table of contents
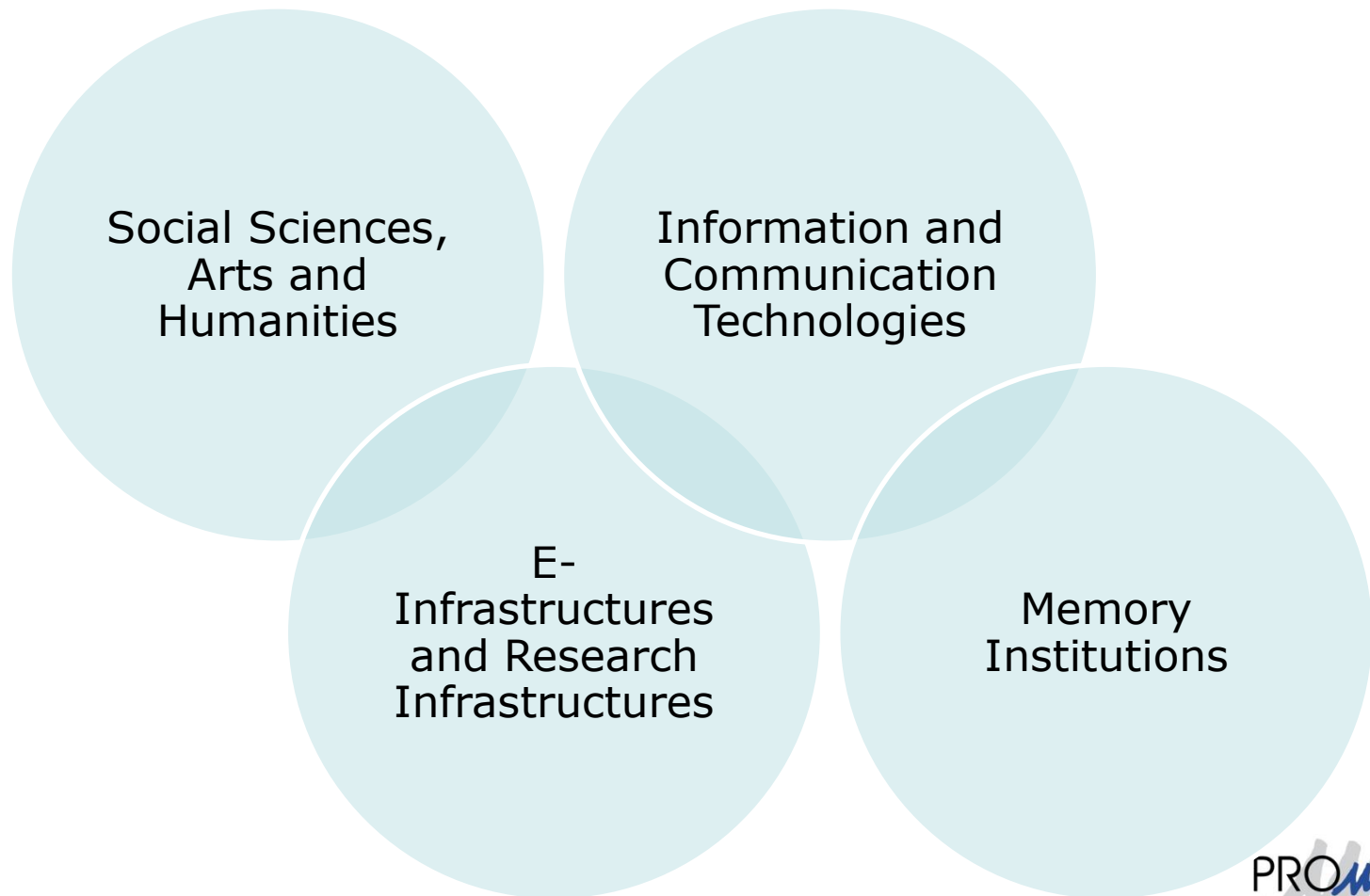
❑ A definition of digital cultural heritage

❑ Key issues for digital cultural heritage:

   – Digitisation

   – Access

   – Preservation

❑ Quick overview of European Commission initiatives on digital archives

   – FP7 and CIP ICT-PSP

   – Horizon2020

❑ Digitalmeetsculture.net: about the encounter of digital technologies with culture and art

Coventry, 8/1/2014

How to define the concept of «digital cultural heritage»

Several critical aspects exist for a definition of «digital cultural heritage» (DCH). Some questions that arise:

- What is cultural heritage and what is not, e.g. Software algorithms? User generated content without the intervention of professional curators?

- What does it mean for CH to be digital, e.g. A masterpiece which has been digitised? A born digital artwork? A database of information related to a physical archaeological find? They are very different concepts of digital CH content

- How should the IP rights be protected, e.g. Do they apply only to the physical object and its digital representation should be openly accessible? Or should the digital representation be protected as independent content?

Coventry, 8/1/2014

Towards a common agreement on the meaning of digital cultural heritage

Social Sciences, Arts and Humanities

Information and Communication Technologies

E-Infrastructures and Research Infrastructures

Memory Institutions

Coventry, 8/1/2014

PRO*M*OTER
Information technology, research and innovation

DIGITAL MEETS CULTURE .net

A tentative list of what can be considered to be part of «digital cultural heritage»

- Results of the 2D and 3D digitisation of museums, libraries and archives collections
- Virtual reconstruction of archaeological places
- Digital exhibitions
- Virtual reality spaces
- Annotations
- Results of physical experiments on artworks (e.g. chemical analysis for restoration purposes)
- Digital art
- Born digital content (e.g. digital books)

Coventry, 8/1/2014

A very diversified range of material needs sophisticated tools to be managed

- Digitisation techniques
- Automatic extraction of knowledge
- Metadata standards
- Virtual reality systems
- Powerful search engines
- Semantic technologies, ontologies
- Interfaces to the physical investigation instrumentationsation
- Visualisation tools

Digital preservation: a key step

- The investment in the production of the DCH data is extremely high because the description of each object requires human intervention of experts in the sector

- If data are lost, for cultural data the digitisation process cannot be just replicated (as a physical experiment, for example).

- Complex data need elaborated software to be interpreted (e.g. 3D models)

- Born digital cultural heritage is more and more a reality in the artistic scenario

Coventry, 8/1/2014

Digital preservation – critical aspects

- Each digitisation programme run by the European cultural institutions is currently addressing the issue of preservation in a separate manner

- Digital preservation is based on the unique and permanent identification of digital objects.

- The implementation of a global registry of permanent IDs is a very complex process that is not yet in place.

Coventry, 8/1/2014

PRO*OTER*
Information technology, research and innovation

DIGITAL*CULTURE*.net

Current state of digitisation of cultural heritage in Europe (1)

❑ **Digitisation activity**

– 83% of cultural institutions have a digital collection or are currently involved in digitisation activities

– 20% of their collections are digitised

– 89% of audio visual institutions have born digital collections

– 43% of museums of art and history have born digital collections

– 34% of institutions have a written digitisation strategy

– About one third of the institutions are included in a national digitisation strategy, for national libraries more than half are included

Coventry, 8/1/2014

Current state of digitisation of cultural heritage in Europe (2)

❑ **Digital access**

– 31% of cultural institutions have a policy on the use of the digital collections, figures range from 60% for national libraries to 22% for archaeology museums

– 42% of institutions monitor the use of their digital collections

– 85% of institutions use web statistics to measure the use of their digital collections

❑ **Europeana**, the European Digital Library

– By end 2014 institutions estimate they will make twice as much of their collections accessible through Europeana when compared to today

Current state of digitisation of cultural heritage in Europe (3)

❑ **Digital preservation**

- 23% of institutions have a written digital preservation strategy, figures range from 44% for national libraries to 12-25% for museums
- About a third of the institutions are included in a national preservation strategy
- 40% of national libraries say there is no national digital preservation strategy
- 30% of the institutions are included in a national digital preservation infrastructure

PRO*OTER*
Information technology, research and innovation

DIGITAL MEETS CULTURE.net

Current state of digitisation of cultural heritage in Europe (4)

❑ Costs

– The estimated total cost of digitising the collections of Europe's museums, archives and libraries, including the audiovisual material they hold is approximately €100bn, or €10bn per annum for the next 10 years

– The cost of preserving and providing access to this material over a 10-year period after digitisation would be in the order of €10bn to €25 bn, provided that centralised repository infrastructure is made available for the purpose

Sources

NUMERIC Study Report: http://cordis.europa.eu/fp7/ict/telearn-digicult/numeric-study_en.pdf
ENUMERATE Survey Report on Digitisation in European CH Institutions 2012:
http://www.enumerate.eu/fileadmin/ENUMERATE/documents/ENUMERATE-Digitisation-Survey-2012.pdf
DIGITAL RENAISSANCE - EC Comité des Sages Report on Cost of Digitising Europe's CH:
http://ec.europa.eu/information_society/activities/digital_libraries/doc/refgroup/annexes/digiti_report.pdf

# Towards an e-Infrastructure for digital cultural heritage

❑ Medicine and Natural sciences, including astronomy, biology, chemistry, earth sciences and physics, already make use of e-Infrastructure

  – To generate, curate and analyse research data
  – To develop and explore models and simulations
  – To enable dynamic distributed virtual organisations, facilitating collaboration with information and resource sharing

❑ Need for novel e-Infrastructure services is increasing also in Social Sciences, Arts and Humanities to support:

  – research in the arts and humanities (e.g. DARIAH project)
  – storage and preservation of digital cultural data (e.g. DCH-RP project)
  – semantic search and simplified access to distributed digital archives (e.g. INDICATE project),
  – 3D modeling and VR representations (e.g. 3DCOFORM project)

Coventry, 8/1/2014

Target Users of the DCH e-Infrastructure

❑ **Researchers** in the humanities

❑ **Teaching and learning actors** (schools, training centres, university courses)

❑ **Cultural and creative industry** for the creative use and re-use of the digital cultural content (in this sense, the networks of the creativity projects launched under CIP ICT-PSP in the "Europeana family" would be an interesting target group)

❑ **Owners of cultural digital repositories** (museums, libraries, archives, publishers, etc.)

❑ **Policy makers** and programme owners

Features and Services

- ☐ **AAA services** to authenticate the users and grant them different types of authorisation to access data
- ☐ Powerful **search engine** (e.g. semantic search)
- ☐ Identification of the best common **metadata model**
- ☐ **Scalability** to adapt on the basis of the increase of the number of users and of data
- ☐ Automatic **extraction** of metadata
- ☐ **End-user interfaces**
  - – To content owners (both big and small cultural institutions)
  - – To individuals, with different access rights (e.g. researchers, teachers, students)
  - – To educational institutions (e.g. to manage groups of users associated to a university, a school, a training center)
  - – To private enterprises, providing testing access and commercial access to content

Coventry, 8/1/2014

DIGITAL MEETS CULTURE .net
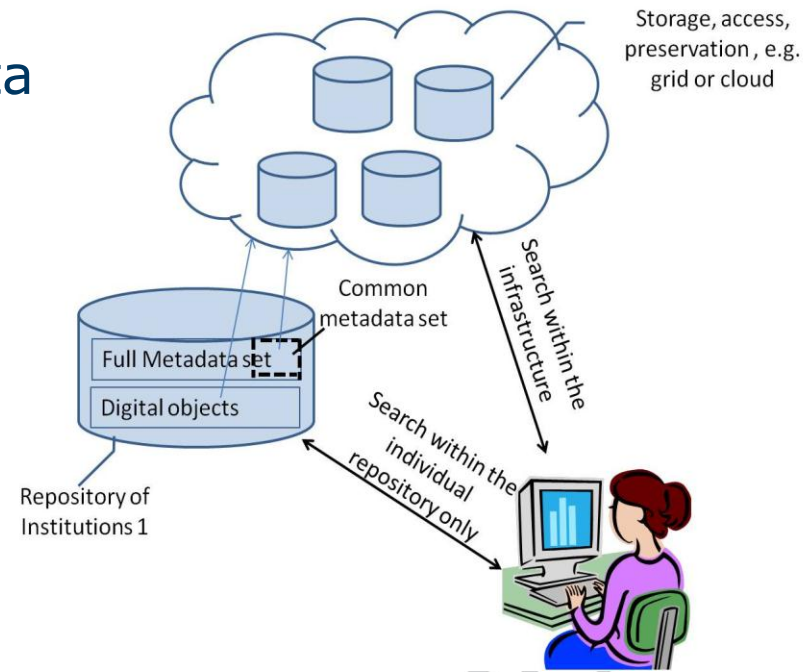
Virtual Research Environments & Virtual Research Communities (1)

❑ VRE and VRC are key new paradigms and practical opportunities for doing research

❑ Virtualisation and large-scale collaboration play key roles in handling born digital and digitised cultural content

❑ VRE brings into close vicinity the **resources**, VRC brings into close vicinity the **partners**.

Coventry, 8/1/2014

PRO**MO**TER
Information technology, research and innovation

DIGITAL MEETS **CULTURE** .net

Virtual Research Environments & Virtual Research Communities (2)

- ❑ VRE and VRC help research in Arts and Humanities by:
  - ❑ Simplifying **access** to diverse resources
  - ❑ Helping to extract and **link information** from different data archives
  - ❑ Enhancing **visualisation** of complex cultural data (3D, virtual environments)
  - ❑ Enabling the **connection** of diverse parallel activities on separate DCH segments
  - ❑ Supporting management, administration, documentation, dissemination, cooperation

- ❑ VRCs can also serve as **competence centres** facilitating European and global collaboration in the DCH and humanities research and enabling joint activities between diverse organisations, projects and networks

Cultural and creative industries

❑ DCH is expected to unlock its potential in terms of economic exploitation by entering into partnership with the creative industries.

❑ The 'European Competitiveness Report 2010' identified the Creative Industries as one of **Europe's most dynamic sectors.**

❑ It currently accounts for **approximately 4 % of the GNP** of the EU and **c. 3.8 % of its workforce.**

❑ The Creative Industries encompass Music, Books, Art, Film, Broadcasting, Performing Arts, Architecture, Designs, Publishing, Advertising, Software and Games.

❑ They are dominated by SMEs, with **micro-SMEs and free-lancers representing 85% of all actors.**

Coventry, 8/1/2014

What has been done: FP7

❑ FP7 is the Seventh Framework Programme for Research and Technological Development just completed

❑ A specific area of research was devoted to the digital archives for cultural heritage, within the ICT Specific Programme, including technologies for digitisation, access and preservation

❑ In addition, research on digital archives was often embedded within the SSH projects (e.g. RICHES)

❑ Finally, digital cultural heritage has been part of the EC Programme dedicated to Research Infrastructures and e-Infrastructures.

What has been done: CIP ICT PSP

❑ CIP ICT PSP is the ICT Policy Support Programme within the Competitiveness and Innovation Framework Programme, just completed

❑ This programme is interested in bringing the results of the research to market

❑ A specific area of work was devoted to the development of the Europeana Flagship Initiative of the European Commission.

❑ This included projects for:
  – digitisation (e.g. EuropeanaPhotography),
  – best practice networks for aggregation (e.g. Eagle about Greek and Roman epigraphies)
  – best practice networks for creative re-use of content (e.g. E-Space)

Horizon2020

❑ H2020 is the new Programme for the Research and Innovation of the European Commission.

❑ It started in December 2013 and will run until 2020.

❑ Its main characteristic is that the research and technological development is conceived as part of a process of innovation that should deliver impact on the society in terms of quality of life, employment and economic benefits.

❑ The research on digital archives and digital humanities is not limited to a predefined area but it is instead spread around the whole Programme.

Horizon 2020 pillars

- ➢ Excellent science

- ➢ Industrial leadership

- ➢ Societal challenges

Cultural Heritage in Horizon 2020

- – CH will be tackled in the three pillars of Horizon 2020

- – Horizon 2020 will support both tangible and intangible CH (societal impact of CH)

- – CH has never been in such a central position – CH community should keep the momentum

Coventry, 8/1/2014

Focus on **digital** cultural heritage

Pillar "Excellent Science"

❑ European Research Infrastructure

  ▪ **Topics on**

    – e-Infrastructures for virtual research environment (*EINFRA 9, 2015, EUR 42 mio total; 2-8 mio/project*)

❑ Marie Skladowska Curie (MSC)

Focus on **digital** cultural heritage

Pillar "Industrial Technologies"

- ❑ Information and Communication Technologies
  - ▪ **Topics on**
    - – Support the growth of ICT innovative Creative Industries SMEs (ICT 18, *2014, EUR 15 mio; EUR 0.5-1 mio/project*)
    - – Technologies for creative industries, social media and convergence (ICT 19, *2015, EUR 40 mio*)

Focus on **digital** cultural heritage

Societal Challenge

❑ Europe in a changing world – Inclusive, Innovative and Reflective Societies

▪ **Topics on:**

- Innovation ecosytems of digital cultural assets (REFLECTIVE 6, *2015, EUR 10 mio*)

- Advanced 3D modelling for accessing and understanding European cultural assets (REFLECTIVE 7, *2014, EUR 14 mio*)

www.digitalmeetsculture.net

Interactive online platform for cooperation and information in the field of digital technologies applied to cultural heritage and the arts

Coventry, 8/1/2014

www.digitalmeetsculture.net

Online magazine: news and articles published daily by the editorial team at Promoter

Portal to a rich amount of resources: each article offers links to in depth information about the subject matter

Instrument for online dissemination of project activities, providing access to services, surveys, online consultation

Coventry, 8/1/2014

www.digitalmeetsculture.net

Media sponsor of international initiatives last events:

LuBeC Conference, Lucca, September 2013

EUDAT Conference, Rome October 2013

ASREN eAGE Conference, Tunis, December 2013

A wide and open team of cooperation from all over the world: Europe, USA, South America, India, Malaysia, Singapore, China

Coventry, 8/1/2014

www.digitalmeetsculture.net

Become a contributor to digitalmeetsculture

Register to the portal and send us news about your research !!!

Coventry, 8/1/2014

THANK YOU
Antonella Fresa
fresa@promoter.it

Coventry, 8/1/2014