Published on *Digital Agenda for Europe* (https://ec.europa.eu/digital-agenda)

Digitising our cultural heritage

Published by Editor Connect on 30/05/2012

[1]

Through R&D projects and working with experts from the Member States, the European Commission has been exploring the best ways to preserve, enrich and open up our cultural heritage for the benefit of today's citizens and future generations. And for more than a decade, ICT has been recognised as a key technological solution.

Share this

Date:

30/05/2012

Venue:

Speaker:

Through R&D projects and working with experts from the Member States, the European Commission has been exploring the best ways to preserve, enrich and open up our cultural heritage for the benefit of today's citizens and future generations. And for more than a decade, ICT has been recognised as a key technological solution.

You only have to listen to the 'oohs' and 'ahhhs' of tourists to know that Europe has something special when it comes to cultural heritage. Of course we have age on our side - Roman villas, Greek temples and medieval monuments are not hard to find - but age alone is not what makes our heritage so remarkable.

From the far flung Stone Age dwellings of Skara Brae in the Scottish Orkneys to the windmills of Mykonos in Greece; from small wayside shrines in rural France to the language of the Sami language of Lapland, the historical range, the geographic spread and the vast diversity on offer is awe inspiring.

But time is not on our side. Buildings fall into disrepair, books fade, memories are lost with each generation. Is there any way to preserve, share and extend the benefits of this rich resource?

As early as 2000 the Commission was highlighting (in its eEurope policy) the importance of digitising

our cultural heritage. The Digital Library became one of the flagship initiatives of the i2010 information society policy framework.

This work continues today under the Digital Agenda [2]. Several of the planned actions under this policy framework support the application of ICT to preserve and share our cultural heritage. Specific actions are looking at ways to promote European cinema [3] and establish the sustainable funding of the central European digital library [4], 'Europeana'. Europeana [5] is one of Europe's most ambitious cultural projects, and a successful one. It is a trusted source for our collective memory and a representation of European cultural heritage online. To date it contains more than 23 million records from more than 2,200 institutions. But a lot of the work behind the scenes came from projects funded through the Sixth Framework Programme (FP6 [6]) which developed the tools, technologies and methodologies for digitising our cultural assets and making them accessible online.

Europeana gives the research community and European citizens a single point of entry to all this cultural wealth, while web-entrepreneurs can access a treasury of digitised content with which to develop new services and products. Europeana 1.0, funded by the eContentplus programme, started the process of linking up this growing pool of digital archives and digitised culture - working with projects such as APEnet, which made 17 of Europe's most important archives accessible online, and a number of other projects which employ state-of-the art technology to digitise masterpieces of European culture, such as Europeana Regia [7] (royal mediaeval manuscripts) and Europeana Collections 1914-1918 [8] (historical material from the period of the First World War).

Europeana launched in November 2008. Expansion of its content library continues through the Ev2 [9] (1) project, funded by the ICT Policy Support Programme [10] (ICT-PSP) of the Competitiveness and Innovation Programme [11] (CIP). Europeana is also supported by numerous other ICT-PSP and Seventh Framework Programme (FP7) projects which continue to identify new archives and develop technological solutions for digitising and sharing objects and archives.

For example, the D2ME [12] (2) project is developing a tool that converts metadata from a diverse range of source formats into the so-called Europeana Data Model (EDM) which powers the indexing and search functionality of Europeana. This tool will make it easier for libraries, archives and museums to provide data on their collections to Europeana and avoid the time-consuming (and sometime inaccurate) job of mapping the various data formats of third-party archives to Europeana's overarching classification system. Other projects seek to open up access to very diverse archives, from highly specialised collections (e.g. biodiversity literature [13]) to contemporary art [14].

But making archives accessible and searchable online is only half the story. You also need to make the digital content come alive. How can you compare pictures of the Parthenon to a real visit. How can touch appreciate the beauty and craftsmanship of a clay pot without brushing your fingers across its rim?

Challenge 8 [15] of FP7 recognises that we need to develop technologies for 'enhancing the meaning and experiences from digital cultural and scientific resources'. We need applications that make all this digitised culture become an asset, so we can engage, interact and learn from our heritage.

Make it real!

ARtSENSE [16] (3), for example, will create a new generation of mobile museum guides based on the novel concept of Adaptive Augmented Reality (A2R), bridging the gap between the digital and physical worlds. It will make use see-through displays to overlay real paintings and images with digital information. This cutting-edge technology will include gaze-and gesture-controlled interaction, giving

visitors the feeling that physical objects are directly responding to them. Artworks will become active artefacts, grabbing the visitor's attention, playing with their emotions and educating them, all at the same time.

The CHESS [17] (4) project, takes interaction out into the field. Combining personalisation and adaptive systems, digital storytelling and interactive controls, visitors to cultural sites will benefit from some mixed reality experiences. Perhaps using their mobile phones or other devices, visitors will become part of the site's 'story', contributing their own experiences and hearing from other visitors as well as professional curators.

The CULTURA [18] (5) project develops exciting new ways to interact with historical texts and illustrated manuscripts by offering an environment in which cultural heritage artefacts can be explored in a way that adapts to individual users, responding to what they do and what they are interested in. The systems do this by analysing the cultural material itself and 'understanding' the important topics, personalities and events described within.

Every day we probably walk past churches, statues and memorials. Now it is possible to explore or study the sights of towns and cities from the comfort of home too. The highly acclaimed V-City [19] (6) project has developed a 3D engine which uses maps, satellite images, photographs and CAD models to create entire 3D towns and cities. The technology was even used to create the background to some of the race scenes in the Pixar film Cars-2.

Of course many cultural objects and artefacts are three-dimensional, so digital archives must find ways to capture these dimensions and reproduce them for users. The 3D-COFORM [20] (7) project focuses on the digitisation of artefacts and aims to deliver new tools in the areas of 3D-capture, 3D-processing, the semantics of shape, material properties and others. This work should result in richer and more realistic representations, better documentation and increased cost effectiveness of the digitisation process. The project will help establish a 'virtual centre of competence' in 3D digitisation to bring together the expertise and technological resources necessary to support mass digitisation of tangible cultural heritage objects, as well as professional development through education and training programs that provide cultural institutions with a deeper understanding of the potential of 3D technologies in cultural heritage.

Two further centres of competence have also been set up. They provide technical support to cultural organisations for the digitisation and digital preservation of cultural heritage. The IMPACT (8) project developed innovations in Optical Character Recognition (OCR) software and language technologies for historical document processing and retrieval. It also worked on building digitisation capacity in Europe, setting up a centre of competence to provide a central entry point for all libraries, archives and museums involved in the digitisation of textual material.

PrestoPRIME is developing practical solutions for the long-term preservation of digital media objects, programmes and collections, and finding ways to increase access by integrating the media archives with European online digital libraries in a digital preservation framework. The range of tools and services developed will be delivered through a networked competence centre.

Of course, there is a whole world to explore. Nothing replaces the personal experience of touching, feeling and experiencing heritage sites for real. But at least we can be reassured that thanks to ICT, our invaluable heritage is preserved and will remain accessible for generations to come.

The projects featured in this article have been supported by the Competitive and Innovation Programme's (CIP) ICT-Policy Support scheme or the Seventh Framework Programme (FP7) for

research.

(1) 'Europeana v2.0'
(2) 'Digitised Manuscripts to Europeana'
(3) 'Augumented RealiTy Supported adaptive and personalized Experience in a museum based oN processing real-time Sensor Events'
(4) 'Cultural Heritage Experiences through Socio-personal interactions and Storytelling'
(5) 'CULTivating Understanding and Research through Adaptivity'
(6) 'The virtual city'
(7) 'Tools and expertise for 3D Collection Formation'
(8) 'Integrated Method for Policy making using Argument modelling and Computer assisted Text analysis'

- FP7 on CORDIS [21]
  - CIP on CORDIS [22]
  - Europeana 2.0 on Europa [23]
  - D2ME project website [12]
  - ARtSENSE on CORDIS [24]
  - CHESS on CORDIS [25]
  - CULTURA on CORDIS [26]
  - V-City on CORDIS [27]
  - 3D-COFORM on CORDIS [28]
  - IMPACT on CORDIS [29]
  - PrestoPRIME on CORDIS [30]

- Comité des Sages The New Renaissance: Bring Europe’s Cultural Heritage Online [31]
  - FP7 ICT Challenge 8 – Digital Culture [32]
  - Press Release: 9 May 2012 by European Commission Vice-President Neelie Kroes described Europeana as the 'Wikipedia of culture' [33]

- Date: 2012-05-30
- Offer ID: 8696

Contact:

Newsroom Item Type:

- Projects news and results [34]

Our Targets:

- Pillar V: Research and innovation [35]
- Pillar VII: ICT-enabled benefits for EU society [36]
- Action 79: Propose a sustainable model for financing the Europeana digital library [37]
- Action 80: Propose measures to support cultural and creative industries. [38]

Source URL: https://ec.europa.eu/digital-agenda/en/news/digitising-our-cultural-heritage

Links
[1] https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/newsroom/offer_id_8696_2440_0.jpg
[2] https://ec.europa.eu/digital-agenda/en/../../digital-agenda/index_en.htm
[3] https://ec.europa.eu/digital-agenda/en/fich-

-
dae.cfm%3Faction_id%3D239%26amp%3Bpillar_id%3D49%26amp%3Baction%3DAction%252081%253A%2520Issue%2520recommendation%2520on%2520promoting%2520digitisation%2520of%2520European%2520cinema
[4] https://ec.europa.eu/digital-agenda/en/fich-
-
dae.cfm%3Faction_id%3D237%26amp%3Bpillar_id%3D49%26amp%3Baction%3DAction%252079%253A%2520Propose%2520a%2520sustainable%2520model%2520for%2520financing%2520the%2520Europeana%2520digital%2520library
[5] http://www.europeana.eu/portal/
[6] http://cordis.europa.eu/fp7/ict/telearn-digicult/digicult-projects-fp6_en.html
[7] http://www.europeanaregia.eu/
[8] http://www.europeana-collections-1914-1918.eu/
[9] http://pro.europeana.eu/web/europeana-v2.0
[10] https://ec.europa.eu/digital-agenda/en/../../activities/ict_psp/index_en.htm
[11] https://ec.europa.eu/digital-agenda/en/../../../cip
[12] http://dm2e.eu/
[13] http://www.bhl-europe.eu/
[14] http://www.dca-project.eu/
[15] http://cordis.europa.eu/fp7/ict/programme/challenge8_en.html
[16] http://www.artsense.eu/
[17] http://www.chessexperience.eu/
[18] http://www.cultura-strep.eu/home
[19] http://vcity.diginext.fr/EN/index.html
[20] http://www.3dcoform.eu/
[21] http://cordis.europa.eu/fp7/home_en.html
[22] http://cordis.europa.eu/fp7/cip_en.html
[23] https://ec.europa.eu/digital-agenda/en/../../apps/projects/factsheet/index.cfm%3Fproject_ref%3D270902
[24] http://cordis.europa.eu/projects/rcn/97475_en.html
[25] http://cordis.europa.eu/projects/rcn/97182_en.html
[26] http://cordis.europa.eu/projects/rcn/97304_en.html
[27] http://cordis.europa.eu/projects/rcn/89240_en.html
[28] http://cordis.europa.eu/projects/rcn/89256_en.html
[29] http://cordis.europa.eu/projects/rcn/93720_en.html
[30] http://cordis.europa.eu/projects/rcn/89482_en.html
[31] https://ec.europa.eu/digital-agenda/en/../../activities/digital_libraries/doc/refgroup/final_report_cds.pdf
[32] http://cordis.europa.eu/fp7/ict/telearn-digicult/digicult_en.html
[33]
http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/12/312&format=HTML&aged=0&language=EN&guiLanguage=en
[34] https://ec.europa.eu/digital-agenda/en/newsroom/all/projects-news-and-results
[35] https://ec.europa.eu/digital-agenda/en/our-goals/pillar-v-research-and-innovation
[36] https://ec.europa.eu/digital-agenda/en/our-goals/pillar-vii-ict-enabled-benefits-eu-society
[37] https://ec.europa.eu/digital-agenda/en/pillar-vii-ict-enabled-benefits-eu-society/action-79-propose-s-
stainable-model-financing-europeana
[38] https://ec.europa.eu/digital-agenda/en/pillar-vii-ict-enabled-benefits-eu-society/action-80-propos-
-measures-support-cultural-and-creative