Common challenges and perspectives for Digital Cultural Heritage in H2020 projects

Building on lessons learnt and strengthening the societal impact

Report on the Workshop in Brussels, 14 November 2018

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General context

The workshop was organized by the European Commission, Directorate General for Communications Networks, Content and Technology (DG CNECT), Unit G.2 and the Research Executive Agency (REA), Unit B.3. Ongoing Horizon 2020 projects in the field of Digital Cultural Heritage were invited to identify common challenges and perspectives. The workshop aimed at building on lessons learnt and identifying ways and policies for strengthening the societal impact of H2020 projects on Digital Cultural Heritage.

The European Commission, through its Horizon 2020 Programmes, especially its 6th Societal Challenge entitled Inclusive, Innovative and Reflective Societies, offers prominent and ongoing support to research in the domain of Cultural Heritage, with special emphasis on the use of technology for preserving and promoting cultural heritage. In designing the budget for the work programme of the next Framework Programme that will succeed Horizon 2020, it is important to understand the needs of researchers and companies working in the field of digital cultural heritage and identify gaps that future EC support could help to fill. The workshop contributed also to the bottom-up collection of policy feedback and new ideas.

The sessions of the workshop focused on providing A) a comprehensive overview of the latest H2020 funded projects, notably their objectives and latest results, as well as best practices that may result from them in terms of promoting cultural heritage through technology. The workshop also included sessions focusing on discussing two major themes that represent common challenges in many H2020 funded projects: B) Exploitation of project results towards optimising impact and sustainability, and C) IPR management and reusability of project results. The day ended with a roundtable on policy update and future perspectives.

A) Overview of the H2020 Digital Cultural Heritage

Seven recently funded H2020 projects were shortly presented during the workshop, proving the great variety of topics, technologies and types of cultural heritage supported by the European Commission. The projects presented their objectives and latest results, thus reflecting current trends in digital cultural heritage and ongoing work of the research community focusing on technologies for story-telling for cultural heritage (project *Emotive*), meaningful personalisation of hybrid virtual museum experiences through gifting and appropriation (project *GIFT*), use of advanced Virtual Reality, immersive serious games and Augmented Reality as tools to raise awareness and access to European underwater Cultural Heritage (project *iMareCulture*), technologies enabling the digital investigation of historical newspapers (project *NewsEye*), technology-enabled Social Platform for Heritage Awareness (project *Pluggy*), technologies for supporting fashion Cultural Heritage and weaving our past into the future (project *SILKNOW*), and technologies enabling richer online music public-domain archives (project *TROMPA*).

The overview of the H2020 Digital Cultural Heritage was complemented by a competition on contribution to sustainable development. The competition focused on presenting practical examples and tools serving the implementation of policies, theoretical approaches and political declarations on cultural heritage and sustainability. In this way, it aimed at inspiring, in a rather informal and playful

way, a policy discussion on the fundamental role that research and innovation in digital cultural heritage can play in materializing the relationship between culture and sustainability by facilitating complex multidimensional and multi-stakeholder processes.

Project coordinator were asked to propose one activity or result of their project which best implements or contributes to the sustainability principles (e.g. an outcome that demonstrates a strong multidimensional impact, or supports conservation of landscapes, or contributes to sustainable tourism, etc.). A jury established by the REA received the applications of the project coordinators and selected five projects to present a short pitch during the workshop about the outcome that they wanted to promote. The following 5 projects were presented:

- **ArchAIDE**: The ArchAIDE project has developed a new mobile and desktop application that aims to improve the practice of pottery recognition in archaeology, using the latest automatic image recognition technology.
- **ARCHES**: the specific project result presented during the competition focused on tactile photography, i.e. 3D printed reliefs of pictures taken by blind photographers highlighting the ARCHES' project effort to use cultural heritage and artistic practice as a strategic resource for achieving a sustainable Europe, one that is inclusive of all citizens.
- **iMARECULTURE**: iMARECULTURE exploits new technologies to bring maritime cultural heritage to the virtual reach of the public, in order to raise awareness, nurish interest and utterly increase revenue to maritime museums and submerged archaeological sites. This revenue could be used, along other measures, as a counter balance for the increased costs related to underwater archaeology.
- **PLUGGY**: PLUGGY, the Pluggable Social Platform for Heritage Awareness and Participation, aims to promote the "common European tangible and intangible heritage" by providing a) a heritage-centric social platform, which allows users to share their local knowledge and everyday experience with others, b) a curatorial tool for easier creation of their stories and c) a collection of applications for the intelligent transformation of these stories to cultural heritage experiences.
- **Scan4Reco**: this pitch presented the project's work on the multi-layer digitization of cultural heritage assets for 3D printing-enhanced conservation based on spatiotemporal simulation & decision-making support. The project's approach strives to enable optimal preservation of cultural heritage while ensuring that interested audiences may interact with cultural heritage in a non-destructive way, through advanced 3D models embedded in solutions, such as the Scan4Reco Virtual Museum.

Following the judges' deliberation, the award for the best contribution to sustainable development was given to the project **iMARECULTURE**. The rationale for this decision was based on the fact that the iMARECULTURE activities contribute to all three perspectives of sustainability: environmental, societal and economic. A token of accomplishment was awarded to the representative of the iMARECULTURE project.

B) Exploitation of project results towards optimising impact and sustainability

The research community of H2020 projects on digital Cultural Heritage, supported by the EC, is carrying out a number of efforts for the cross-fertilisation of H2020 projects and exchange of knowledge. The research community encourages the continuous efforts of the EC to bring researchers together towards the understanding of common needs of projects on digital cultural heritage.

Initiated by the keynote of Angeliki Antoniou[1] who presented the Crosscult/EMOTIVE approach and lessons learned in the effort for inter-project collaboration, the participants of the workshop debated on success stories and/or barriers faced during the implementation of their projects in their efforts to engage external stakeholders and achieve sustainability of project results. As a result of this debate, the following suggestions were brought forward in relation to supporting the sustainability of project results and optimizing their exploitation and impact-creation:

1) Allowing for more flexibility

1.1) Several projects are willing to collaborate for achieving better results, more extensive reach and greater impact; however, the difficulty in aligning the rigid time-planning of each project's activities, often, prevent them from achieving optimal collaboration. In this sense, they ask for more flexibility of the EC regarding work plans to foster more inter-project collaboration.

1.2) The involvement of consortium-external researchers in H2020 projects and the creation of synergies among project and non-project stakeholders is of high interest. The EC should consider allowing for a specific budget that would be released in later project phases for enabling such collaborations and synergies.

2) Continuous efforts on resolving IPR issues and ensuring sustainability

2.1) IPR of the content resulting from a project is, often, unclear and this can be a major barrier in exploitation. A working group, or even an organisation could be established to work on IPR issues related to cultural heritage, with the involvement of IPR experts who have worked in relevant issues in order to submit relevant recommendations to the European Commission.

2.2) A common repository for publications is under development by the CrossCult project. However, there is a need to create something similar for the storage and findability of services developed by projects.

2.3) Further work on IPR-related standards is needed.

2.4) IPR issues are closely linked to sustainability of project results. Alternative approaches should be envisaged for cultural heritage.

2.5) The EC should constantly advice project coordinators about the different types of impacts expected from the projects on different actors and fields. Projects should take such input into

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[1] University of Peloponnese
https://www.crosscult.eu/en/latest/workshop/
http://gav.uop.gr/news/20180518cfp.php

account since the early project implementation phases. They should also establish and pursue the achievement of concrete impact indicators and agree on these indicators with all stakeholders, even at proposal preparation phase, in order to avoid misunderstandings during project implementation. EC and project beneficiaries as well as beneficiaries between each other should strive for intensive communication and mutual responsiveness throughout the whole project lifetime.

3) Enhancing the engagement of relevant stakeholders

3.1)   The whole value chain related to a given cultural heritage topic should be kept in mind. Exploitation of the expected results needs to be planned appropriately by identifying relevant stakeholders that cover well all aspects of the value chain related to the expected project outcome.

3.2)   Building solid, trustful relationships between technology providers and cultural heritage institutions, such as museums, is a necessary prerequisite for successful exploitation of project results. However, very often, this is a difficult and lengthy process. It requires respecting IPR clearance procedures imposed by the cultural heritage institutions for all material to be published by the project. This continuous learning process can make the next collaborative effort easier and faster to achieve.

3.3)   An important step when working in collaborative projects is to establish a common vocabulary among partners of different disciplines (e.g. SSH and technological sciences). The project coordinator should play the role of a mediator to facilitate exchange of ideas and enable a common context.

3.4)   A good practice that can facilitate collaboration and, consequently, exploitation of project results is the establishment of memoranda of understanding with cultural heritage stakeholders at an organizational level instead of at a project level.

4) Integrating technological know-how into education and training

Train the future employees of cultural heritage institutions is key for enabling good collaborations among disciplines. It is the responsibility of researchers to train the cultural heritage community, e.g. to provide the museum staff with the necessary digital skills and explain the usefulness of digital tools to them. Therefore know-how tools resulting from projects should be included in future curricula of education for museologists and other experts in this field.

5) Open challenges common for H2020 projects

More synergetic approaches are necessary for tackling open challenges that are common for many H2020 projects in order to avoid duplication of work and enable efficiency in the use of resources, which can greatly support exploitation and sustainability of project results. Some of the common challenges identified by project representatives are:

- How to develop and present location-specific information (e.g. tracking, navigation).
- How to enable personalisation of services and profiling of users of digital cultural heritage.
- Defining further the role of games in cultural heritage: what is the exact role of games, do we really need it and to what extent? How?

- Further specification of digital representations (what, why, how).
- How to carry out evaluation of results in CH projects: evaluation methodologies, tools, processes, etc. The strict evaluation processes followed by the EC based on detailed pre-defined goals does not give much room for creativity – there is room for improvement in this regard.

The EC could provide and communicate guidelines for efficient collaboration in view of common approaches addressing the above topics, as well as organize collaboration events and meetings between projects to improve their proficiency.

C) IPR management and reusability of project results

Questions on IPR, copyright, reusability of project results are one of the main issues for ICT projects in the field of CH.

Paul Klimpel clarified some important legal points regarding IPR management in his key note speech:

- The copyright protection is connected to the author as a person and arises automatically. The author can grant rights to use the work or sell the rights. The clearance of the copyright status for works with many authors like film productions (director, cinematographer, cutter etc.) is quite complicated.
- There are no rules for transfer of copyright "in good faith" (bona fide).
- Due to extended protection periods, most works of the 20th century are still under copyright protection. For older works it is very difficult and often impossible to clarify the copyright status with certainty due to a lack of contractual accuracy. The legal situation in Europe is heterogeneous and disputed. The situation for American CH is clearer because they had a protection law until 1989 including a mandatory copyright registration procedure.
- Given the complexity of the situation, right clearance should be replaced by risk management: What do I have to do to minimize the risk of getting legal problems? Practical solutions need to be envisaged such as fiction or adscription of rights accepted by all parties.
- There is also the risk of fraudulent claims of rights ownership. The legal uncertainties about older works are exploited by companies, organisations and individuals in order to claim royalties or license fees, even though they know they do not hold any rights. Also the over claiming of rights in the absence of full ownership is common. As the addressees of such claims can never be entirely sure about the existence of these rights they often pay to avoid the risk of unpredictable legal proceedings. However it is recommended to do a proper risk management and ask for proofs related to those claims.
- The upcoming European directive on copyright will provide more legal certainty.
- There are still open questions related to extending Collective Licenses, to giving rights on databases, to public licenses and Creative Commons. Furthermore perhaps a new layer of copyright might be necessary related to digital reproduction.

The discussions in the working group on IPR issues resulted in the following conclusions:

- The copyright situation shapes our view of history. Practical solutions are necessary; otherwise CH will never be sustainable.

- The most important challenges of the concerned projects are:
  - how to deal with the IPR of user generated content uploaded on a platform;
  - what is the best approach to handle the IPR of old content (not copyright protected) and new (copyright protected) digital content linked to the old content (e.g. photographs of old material);
  - how to assure sustainability of project results.

The use of open licenses, notably Creative Commons (CC-BY or CC-BY SA) licenses, can help to address the challenges identified above. These licenses are irrevocable and assure that the project results can be used independently from a project.

Data themselves or metadata like "date of birth" or "ISBN" cannot be copyright protected. However in some cases, metadata consist of works with an author like photographs or written descriptions, that are copyright protected. To avoid confusion, Europeana demands all core metadata to be labelled as Creative Commons Zero. If content or metadata are produced by a software tool like Artificial Intelligence tools, such content/metadata should not necessarily be covered by the same license that applies to the software that produced it. A different license may be used. In cases of crowd-sourced data contributed by a large number of individuals, there is no ownership of data.

The upcoming EU copyright directive, a revision of the current rules not fitting any longer to the 21st century situation, provoked highly controversial discussions in the concerned communities. Rehana Schwinninger, head of unit G.2 in DG CNECT emphasized that we always have to look for a fair remuneration of the creator.

As a general advice, when dealing with difficult and complex copyright issues, a solution should be envisaged for using or reusing copyright-protected material by negotiating and collaborating with all interested parties to find a viable agreement.

Concluding remarks

The roundtable discussion focused on updates related to current policy efforts and future perspectives in the field of cultural heritage, as well as on areas where further policy-making can act as a facilitator and enabler of cultural heritage preservation and promotion.
- The EC will continue to build on digital for cultural heritage with particular emphasis on promising technologies such as 3D, Virtual Reality, Augmented Reality and Artificial Intelligence. A European platform on cultural heritage preservation and conservation using digital technologies may also be funded.
- The potential of digital cultural heritage to contribute to sustainable and inclusive economic development was highlighted. To achieve this, the involvement of a variety of stakeholders is needed around a unifying vision and strategy for the project. A high-level example in this direction is the Global Tech Panel[2]. Launched this year by EU High Representative Federica Mogherini, the initiative will create linkages among tech leaders, academics and representatives of civil society and governments around a 'digital for development' agenda.

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[2] https://eeas.europa.eu/topics/economic-relations-connectivity-innovation_en

- When planning projects related to cultural heritage, it is important to always think about impact on society. The EC representatives invited projects to think about and propose solutions that respond to societal needs, are cost effective and readily applicable. In addition to H2020, the EC is operating a number of instruments that support such initiatives. An example is the European Innovation Council[3] and its SME Instrument[4] which are set to continue under Horizon Europe, the next R&I framework programme (2021-2027). Starting 2021, additional support will also be provided via InvestEU[5].

- The importance of digital technologies for cultural heritage as a means for promoting innovation and sustainability in cultural heritage is recognized by all relevant EC Directorates-General (DGs). It has been widely accepted that there is a strong need for joining efforts among all relevant EC actors and taking common initiatives. For this reason, close collaboration has been established among 3 DGs: DG CONNECT, DG Education and Culture and DG RTD. A number of common initiatives have already been undertaken, such as this workshop on common challenges and perspectives for Digital Cultural Heritage in H2020 projects, and more are underway in order to promote digital and innovation in cultural heritage. In this context, the **European Year of Cultural Heritage** was the result of a collaborative effort of 19 different services of the EC to work in a cross-cutting and transversal, horizontal way.

- The EC will improve the definition of challenges and establish a more systematic approach to bunch the rather dispersed efforts in the field of cultural heritage, as well as to promote participatory governance. In this context, the EU Strategy on Cultural International Relations launched by Federica Mogherini in 2016 is an important instrument for the recently highly promoted cultural diplomacy. Following this strategy, activities should be organised in cooperation and co-creation with local partners within a sustainable framework, and involving civil society.[6]

- There is an imperative need to safeguard cultural heritage, especially in present turbulent times that we experience destruction of irreplaceable cultural heritage in several places due to war activities (e.g. Afghanistan, Syria). UNESCO is trying to create synergies towards this scope. H2020 projects and other EC initiatives are invited to link closely with local communities and with non-EU communities interested in the same objectives.

- During the discussion with the audience, there was a request for an EC initiative on developing a common impact assessment framework focused on cultural heritage. Current impact assessment approaches do not adequately take into account the specificities of the CH field, notably the strong societal dimension of the impact of projects/initiatives in this field. This results into uncertainty and difficulty in measuring impact of projects. A number of good EC initiatives have started assessing the impact of projects and Framework Programmes from a 3-dimensional perspective: scientific, economic and societal impact. Thanks to these efforts, it is now possible to sufficiently measure scientific impact and economic impact of projects and wider EC initiatives. Social impact is, indeed, more difficult to measure but good initiatives have already been taken towards this direction. A study on various impact assessment methodologies has been carried out, thus providing a good knowledge basis for building an impact assessment framework. The EC will further address this issue under Horizon Europe.

- It is important to build added value taking input from the projects that are being funded by the EC and to link with international organizations.

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[3] https://ec.europa.eu/research/eic/index.cfm
[4] https://ec.europa.eu/programmes/horizon2020/en/h2020-section/sme-instrument
[5] http://europa.eu/rapid/press-release_MEMO-18-4010_en.htm
[6] For further information see the Cultural Diplomacy Platform: https://www.cultureinexternalrelations.eu/