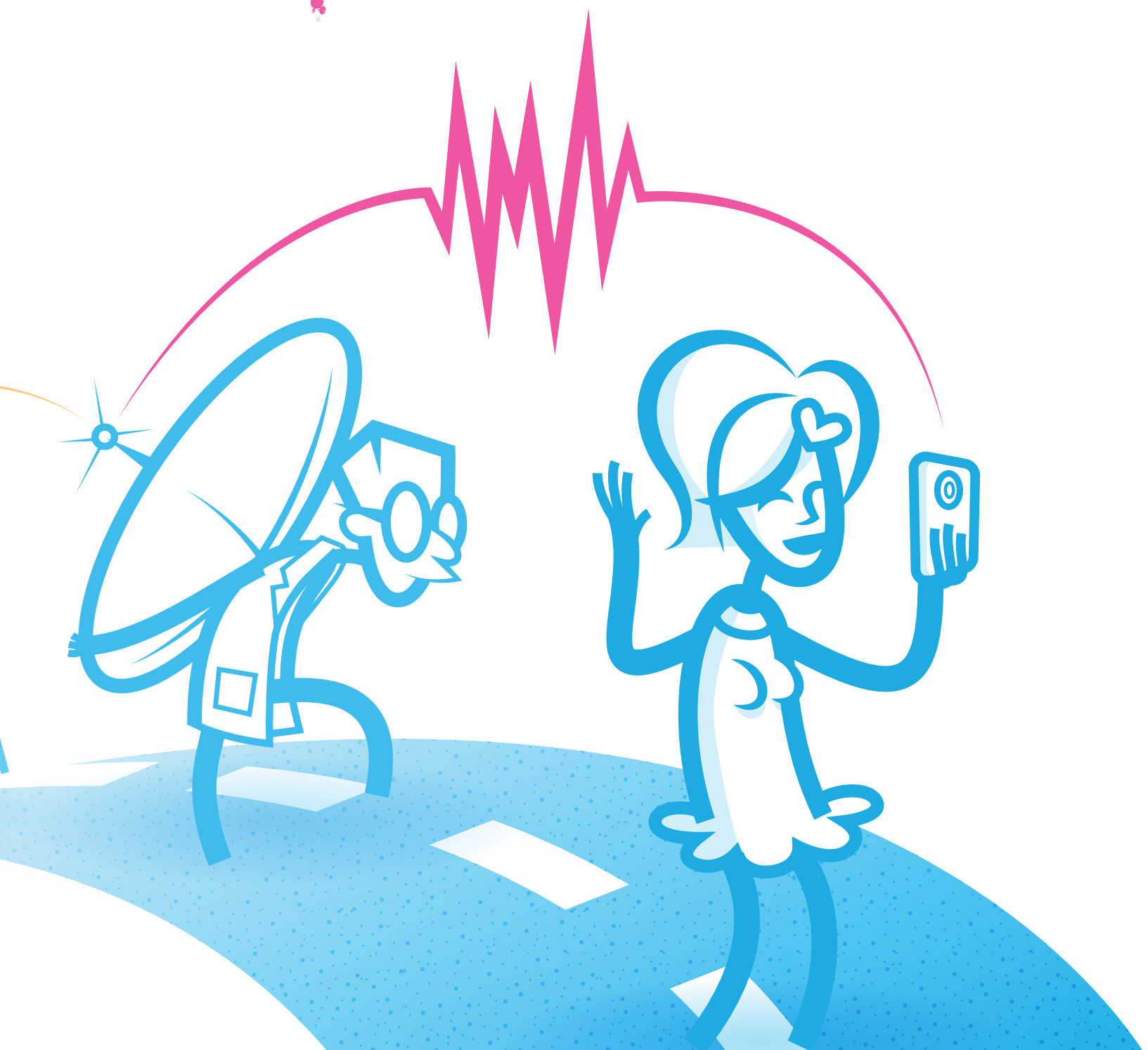




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Partners: 12 partners from 11 European countries

Website: [www.civic-epistemologies.eu](http://www.civic-epistemologies.eu)

Showcase: [www.digitalmeetsculture.net/civic-epistemologies.eu](http://www.digitalmeetsculture.net/civic-epistemologies.eu)

Facebook: [www.facebook.com/civic.epistemologies](http://www.facebook.com/civic.epistemologies)

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# CONTENTS

Project’s Objectives	2
Main Outcomes	3
Target Audience	4
Citizen Science & Crowdsourcing	5
Roadmap & Strategic Research Agenda	11
Registry of Resources	15
Pilot in Western Ireland	19
Case Studies in the UK	23
Working with Stakeholders	27
Online Presence of Civic Epistemologies	39
Final Conference in Berlin	42
Partners	43

## PROJECT'S OBJECTIVES

Digital technology has given rise to citizen engagement and allowed organizations to work closely with people and participate in new and exciting ways. The interrelationships between tools, citizens and cultural heritage institutions is of great importance, with a potential that can carve out a unique space for citizen science and crowd sourcing information to be shared in an organized manner.

There are two factors taken into account by the CIVIC EPISTEMOLOGIES project:

- Digitisation is producing a big change that is impacting cultural institutions, their practices, the way that the heritage is preserved, accessed, and made available on the Internet
- The participation of citizens in digital cultural heritage, in digitisation activities, and in co-creation experiences, including the artistic dimension, represents immense potential that is demanding to be unlocked

Two main objectives:

- To understand needs and requirements of cultural heritage institutions, research organisations and citizens associations, when they are called to participate in joint research activities
- To identify a path, made of recommendations, best practices, and information resources, for the promotion of citizen science projects in the domain of digital cultural heritage

## MAIN OUTCOMES

The main outcome of CIVIC EPISTEMOLOGIES is its Roadmap. The CIVIC EPISTEMOLOGIES Roadmap is a living document that illustrates paths and conditions to bring citizens, possibly through their associations, into research processes and practices of digital cultural heritage and digital humanities.

Accompanying the Roadmap, the following complementary outcomes have been produced by the project:

- A thorough analysis of the requirements of citizens, researchers and cultural institutions, gathered through dedicated Focus Groups
- The CIVIC EPISTEMOLOGIES registry of resources which provides links to best practices, services, projects and initiatives related to the involvement of citizens in scientific development processes
- One real-life pilot carried out in Ireland with schools and elderly people
- Two case studies about inclusion, access, citizenship and economic development

## TARGET AUDIENCE

The project targets the whole value-chain of Digital Cultural Heritage and the Humanities sector, from public funding bodies (ministries and agencies) to stakeholders (cultural content owners), commercial enterprises (publishers and creative industries), e-Infrastructure providers and end users (researchers, artists, educators, students, practitioners and amateurs).

The outreach activities of CIVIC EPISTEMOLOGIES contributes to the creation of a network of actors, who are willing to commit to the implementation of the Roadmap developed by the project. This constitutes the CIVIC EPISTEMOLOGIES Network of Common Interest that is the legacy of the project, which continues to exists after the end of the EC funding period.

### Historical Example: Oxford English Dictionary

In July 1857 the 'Unregistered Words Committee' of the Philological Society of London appealed to volunteers to read particular books and copy out quotations featuring 'unregistered' words. The response was overwhelming and in January 1858, The Philological Society decided that "efforts should be directed toward the compilation of a complete dictionary, and one of unprecedented comprehensiveness". James Murray who had been appointed as an editor issued a new appeal to the public in April 1879, asking for volunteers to read specific books in search of quotations to be included in the future dictionary.

Close to 800 volunteers responded to the appeal and returned over a three years period some 3,500,000 quotation slips.



# CITIZEN SCIENCE & CROWDSOURCING

## THE CONCEPT OF CITIZEN SCIENCE

Citizen science is enjoying increasing popularity and is becoming a new outlet for people who are not professionally trained to be researchers, but who are willing to contribute to a wide range of scholarly activities. Citizen science can be seen as the most inclusive form of open science, where academics not only share openly their research data and publication, but also involve in the development of new knowledge in large communities of volunteers.

Modern technological environments, enabled in particular by the advancement of mobile technologies and social media, allow for innovative ways to involve vast groups of such voluntary researchers in different ways. However, citizen science is not a modern phenomenon. It was particularly prominent during the 19<sup>th</sup> century in different areas including astronomy, biology, and lexicography.

The volunteers who contribute to citizen science projects have the chance to expand their knowledge and follow their interests. The academics who involve citizens benefit from extending the scale of their research, and also from saving time and resources.

A new role of a citizen scientist emerged with the advancement of citizen science. Some citizens are happy to contribute to projects in different domains, but there are also people who specialise in a particular domain and have a huge potential to contribute there. This is an entirely voluntary activity and the involvement of citizens depends on their available time, personal interests, and technological resources and literacy.

Currently citizen science is used across all domains of knowledge. Citizens help with observation on birds, jellyfish, whales, bees, and other biological species; they get involved in identifying galaxies, or help to find solutions of mathematical

problems. Citizens can also provide financing in crowd funded scientific projects, or land computer time in distributed computations.

Currently citizen science is very popular in the sciences but is not equally prominent in the domains of Humanities, Arts and Digital Cultural Heritage. In order to understand how it could be used more actively in these areas, the Civic Epistemologies project explored:

- How to increase the use of citizen science within the digital cultural heritage context. This can be done understanding better the current contexts of use, the patterns of user engagement and the stumbling blocks for various types of stakeholders involved in citizen science. In other ways this requires to identify the stakeholders relevant to citizen science, and to capture their requirements. Artists can play a mediation role. This knowledge can also allow for building better targeted awareness campaigns, and for setting up realistic indicators for the outcomes of new citizen science initiatives
- Which available e-Infrastructure components facilitate citizen science and what tools are currently missing

## CITIZEN SCIENCE IN A EU CONTEXT

The European Union supports the increased participation of citizens in research; this is coherent with the vision of “science for the people, by the people” in a European context. In times of tightening academic budgets, this domain is also a potential generator of new funding models to support the research activities expanding them beyond the participation of only the academic community.

Citizen Science in the EU context is addressed in close connection to Open Science. Citizen science and crowdsourcing are gaining popularity and are integrated in arrange of new project proposals especially those which have a strong innovation component.

A White Paper on Citizen Science was produced by the Societize project which was funded by the EC. The ongoing work of the Civic Epistemologies project is a



further major policy contribution in the citizen science for Digital Cultural Heritage and digital Humanities (DCHH) domain.

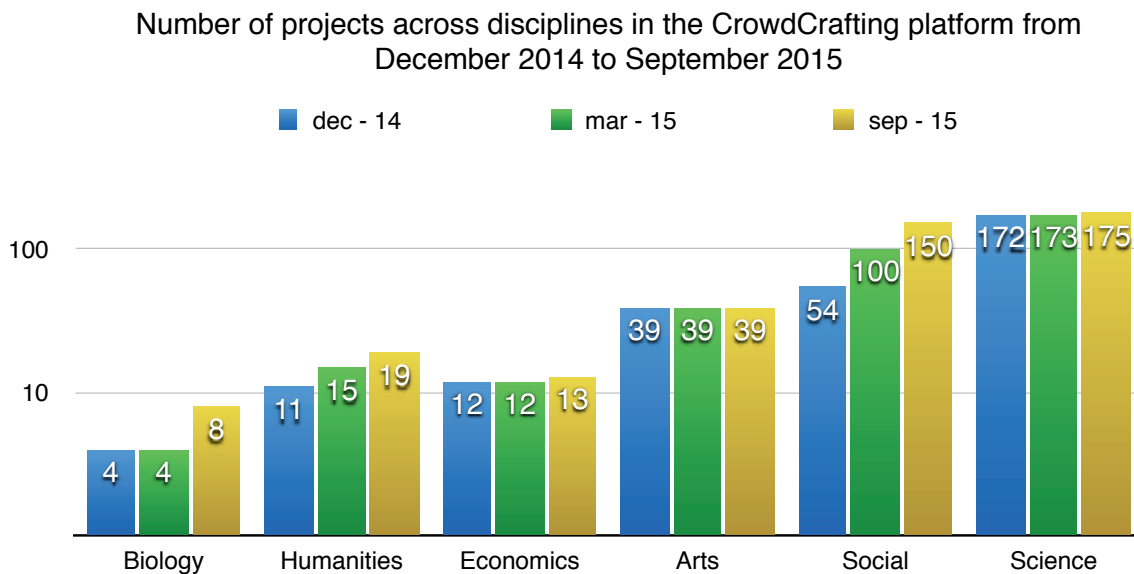
## EXAMPLES OF USE OF CITIZEN SCIENCE IN THE DCHH DOMAIN

While citizen science is popular across sciences, its uptake in arts and humanities in general is quite humble. For this sector, valuable experiences in involving the citizens were gained mostly via crowdsourcing initiatives. Crowdsourcing is similar to citizen science in attracting a wide range of volunteers to contribute to a particular activity, but this is not necessarily aimed at a research outcome.

DCHH institutions used crowdsourcing projects for a range of different tasks; Johan Oomen and Laura Aroyo suggested six different typologies of projects; each one linked to a different kind of study, and respectively tasks:

- Correction and transcription – the citizen is given access to a database (usually a text-based database like scanned manuscripts) and then she gets the task of transcribing or making corrections to the text which was already transcribed electronically via a computer program
- Contextualization – citizens submit data such as letters, stories, films, photographs or other documentary material in order to gather a meaningful context
- Complementing collection – citizens are asked to add data into databases with the ultimate aim of completing them or making the collection grow
- Classification – citizens tag the data, or label it, in order to easily group similar data and make the information more easily retrievable in the future
- Co-curation – this practice occurs mostly with projects involving the aesthetic arts. Citizens interact with institutions and voice their opinions when it comes to choosing articles or items for publication

- Crowdfunding – citizens are asked to gather together money and/or resources in order to support efforts initiated by others



This figure illustrates the growth of number of projects using one of the popular crowdsourcing platforms, CrowdCrafting, in the period of December 2014 – September 2015. Humanities have small but steady growth in projects, while the social sciences domain is the one which shows most rapid growth but still can not catch up with the popularity of initiatives within the domain of sciences.

Most of the crowdsourcing tasks suggested by Oomen and Aroyo can be integrated as parts of a research project. This would entail a partnership between a memory institution and an academic who could design and monitor the study.

A different approach is proposed by Tobias Blanke and Mark Hedges within the context of Humanities e-Science; they identify some typical scenarios and illustrate how all of them are integrating a number of scholarly primitives, namely collecting, discovering, comparing, delivering, and collaborating. While it would require an additional study to justify the use of the same or different set of primitives in citizen science, this is an approach that introduces different levels of granularity with the primitives as the smallest building blocks of more complex activities.

Some examples illustrating the diversity of citizen involvement in DCHH are:

### **Letters of 1916**

The project “Letters of 1916” (<http://dh.tcd.ie/letters1916/>) hosted by Trinity College Dublin aimed to gather letters to or from Irishmen submitted from all around the world. These letters can also be transcribed by anyone on the website. So far this initiative collected over 2230 letters and attracted over 1100 transcribers.

### **Georeferencing: help us place our digitized maps**

“Georeferencing: help us place our digitized maps” (<http://www.bl.uk/maps/>) is a project of the British Library which makes use of an online interface and volunteers to identify historical maps and correctly place them in their modern day location. So far over 9.000 maps had been georeferenced, but the task is quite big and over 41.000 maps are still to be handled.

### **Hooked on music**

A more unconventional citizen science project where citizens contribute to a study of human cognition is Hooked on music (<http://www.hookedonmusic.org.uk/>). Music is fundamental to many people’s identities and remains a strong trigger for memories in all ages. Scientists, however, do not have a solid theoretical explanation why exactly do some pieces of music lodge in our memories - is it solely a question of personal and cultural context or is there something in the music itself? The Music Cognition Group at the University of Amsterdam, in partnership with Utrecht University, the Netherlands Institute for Sound and Vision, and the Manchester Museum of Science and Industry, undertook Hooked on Music, a citizen-science experiment to uncover the musical characteristics that are most responsible for long-term musical memory. An online game helped to attract more than 65,000 users - a huge group of subjects which no lab experiment could possibly achieve! The data gathered provide some interesting insights into the nature of music memories and recollection. Such research can help to tackle aspects of cognitive decline in older age.

## WHAT ARE THE CHALLENGES IN ROADMAPPING CITIZEN SCIENCE IN THE DCHH DOMAIN

The major challenges to provide a roadmap for citizen science in the DCHH domain relate to the nature of tasks, the motivation of citizens and other stakeholders, and available and lacking e-Infrastructure:

- The nature of tasks in the DCHH is very diverse and requires clear definition and a clear understanding on the level of quality to be achieved. Some tasks like transcription of historical texts might require additional training of the citizens
- The motivation of participating citizens is another critical factor. Science enthusiasts are a very popular group, especially in areas such as local history, or genealogical research. However, they are mostly used to do their individual research. The transition to crowdsourcing or citizen science would be a domain where further work is needed. We also need deeper understanding of the motivation of policy makers, cultural heritage institution management and staff, and academics which are all potential stakeholders in the domain
- The e-Infrastructure necessary to support citizen science in DCHH needs to address the specific needs of these domains. Monitoring what tools are available and boosting the development of newly identified needed ones would facilitate the practical uptake of citizen science

All these aspects had been addressed in the work of Civic Epistemologies.

## ROADMAP & STRATEGIC RESEARCH AGENDA

The CIVIC EPISTEMOLOGIES projects main outcome is a validated Roadmap for the use of e-Infrastructure in the research domain of digital cultural heritage and digital humanities (DCCH). This Roadmap aims to support the participation of citizens, together with cultural institutions, in the research processes and the participation of the creative sector, including artists and creative industries, in the exploitation of digital cultural content. It illustrates a path towards the engagement of citizens in the research and valorisation of cultural heritage, by using digital tools and online communication offered by the e-Infrastructures:

- A short-term action plan (2016 - 2018) is proposed in order to initiate the development of a set of e-infrastructure services on a level that will be self-sustainable and continue to progress on its own
- Medium-term (2018-2020), i.e. two years after the end of the Civic Epistemologies project)
- Long-term (beyond 2020) for the logical continuation of the work

The Roadmap indicates how to make possible for each actor in the DCCH domain to define its own practical action plan with a realistic timeframe for the implementation of its stages. Several different types of actors are targeted by the Roadmap, and mainly the following:

- Memory institutions (museums, libraries, archives)
- Humanities research (universities, academies)
- Artists and artistic production centres, with particular regard to the new forms of digital art
- Schools and the education sector in general
- E-infrastructure providers
- Policy makers

- Citizens in general, and through their activists associations

Creativity and arts have here an important role as facilitator for establishing a dialogue that brings together a range of different actors and citizens from across the society.

The Civic Epistemologies project has applied a mixed methods approach to understand stakeholders' different demands and expectations in the citizen science domain. Besides exploring the existing body of knowledge, specifically designed user studies has been undertaken, combining a web survey within the project consortium with focus groups aiming to capture the opinions of different stakeholders.

A first draft version of the Roadmap was compiled in January 2015 based on the preliminary outcomes of the user studies performed by the project. It provided an initial description of what a Roadmap for the use of e-Infrastructure to support citizen research could look like. It was presented early in the project as an internal document for discussion, and was broadly disseminated to get as much feedback as possible. In June 2015, a second draft version was produced with the aim to take a step further in constructing the Roadmap. This version took into account feedbacks from stakeholder groups received so far, recommendations from external experts, and outputs from activities carried out in the project.

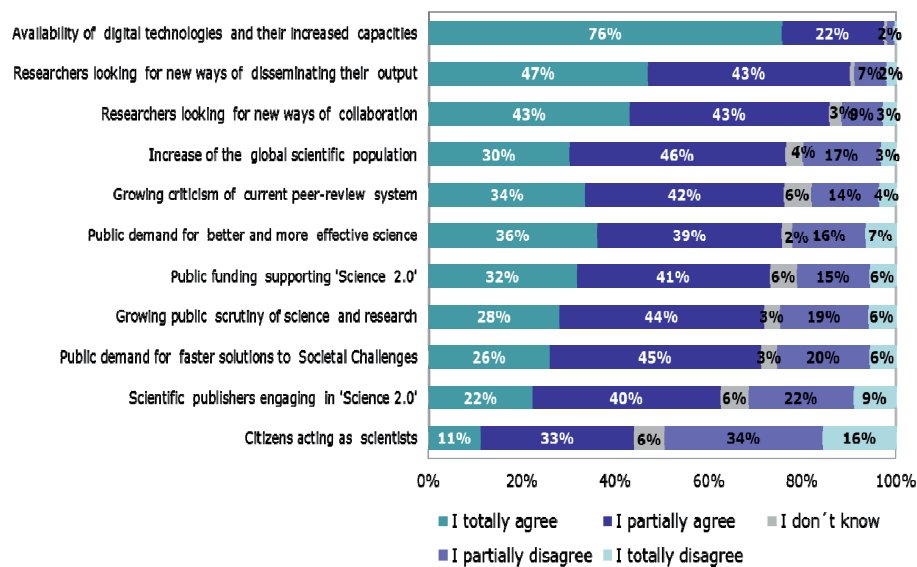
The development of the Roadmap has been supported by a set of targeted activities conducted by the partners in strong association with the stakeholders participating in the CIVIC EPISTEMOLOGIES' network of common interest, namely:

- The compilation of a Registry of Resources
- One real-life pilot on Irish place names and place-based heritage research
- Two case studies in the UK about: "Hidden' Cultural Heritage: Inclusion, Access and Citizenship" and "Local Cultural Heritage: Inclusion, Access and Economic Development"
- A wide programme of focus groups and workshops, to get a common understanding of concerned problems, opportunities, difficulties and challenges

## A Roadmap for Citizen Researchers in the Age of Digital Culture

The Roadmap is intended as a living document, and all the targeted stakeholders are invited to contribute by accessing a dedicated web-space, where it is possible to download the latest version of the Roadmap and to provide feedback and comments. This is a kind of forum dedicated to the discussion about the use of e-infrastructure services and facilities to support citizen science and crowd sourcing targeting the DCHH domain.

The access point to this web-space is: [www.civic-epistemologies.eu/roadmap](http://www.civic-epistemologies.eu/roadmap)



European Commission, *Validation of the results of the public consultation on Science 2.0: Science in Transition*, February 2015

## A STRATEGIC RESEARCH AGENDA

The Strategic Research Agenda takes a closer look at the researcher's perspective on the opportunities and challenges of Citizen Science. It starts by examining the public consultation process organised by the European Commission on 'Science 2.0: Science in Transition'. The results of this consultation, though tackling the broader topics of Open Science, also provides insight into the current general perception of universities, research funders, libraries, researchers, and publishers towards Citizen Science. Additional attention is paid to the current support of

the European Commission towards research projects addressing citizen science such as the Societize project, and their continued support on of topic in the EU Framework Programme for Research and Innovation, Horizon 2020.

The second part of the study focuses on a number of high quality examples of citizen science projects that can provide a deeper insight in the drivers, barriers and opportunities for researchers in the humanities to engage with citizen volunteers. It concludes by defining a number of challenges preventing a wider engagement and collaboration with citizens in scientific research projects, such as data quality concerns, data ownership and the lack of (access to) knowledge on how to deal with data legislation, as well as the often limited technical skills available to researchers in the cultural heritage and humanities domain.



## REGISTRY OF RESOURCES

The Registry of Resources supplements the Roadmap by identifying tools, workflows, approaches, solutions, demonstrators, and applications useful for citizen science. The Registry contains two kinds of information, useful to start up and to run citizen science projects:

- Examples of past or ongoing projects which can provide indications about the subjects of research and the roles played by citizens. The analysis of these examples allows the reuse of successful project patterns and provides inspiration for new projects. Thus, the Registry includes approaches, solutions, demonstrators or simply instances of citizen science and crowdsourcing projects
- Information on available technical means, which can provide indications about the development and implementation of citizen science projects. Thus, the Registry includes references to services to setup the collaboration, communicate between professional and citizen researchers, collect, store and possibly publish or reuse results of the work, such as software applications, technical frameworks and platforms. This knowledge may be even more valuable, as it is often hidden: it is easier to find examples of projects and description what they actually do, but usually the description of how exactly those projects have been implemented and what are the building blocks to launch a citizen science initiative, are missing. Another important element influencing decisions how the project should be organized is standards which define boundaries and assure required quality of work. Hence the registry contains also information about standards

The Registry provides a living collection of knowledge that has been useful for preparing the Roadmap. It also is offered as a source of information for wide public interested in running citizen science or crowdsourcing projects. The real added value of the Registry is the experience of people who have organized and have taken part in citizen science projects and who are expected to continue to contribute to improving this source of knowledge. Note, that the Registry has been

conceived as a highly distributed resource. In this light, the strategy of collecting the data for the Registry, involve and will continue to involve many people, as representatives of citizen science stakeholders, namely:

- Professionals from cultural heritage institutions (museums, archives, libraries, ...)
- Researchers and academics
- Professionals of the e-Infrastructure providers
- Entrepreneurs active in DCCH area


## COLLECTING DATA FOR THE REGISTRY

Two edit-a-thon sessions were conducted during the project's events in order to collect best practices examples. More sessions of edit-a-thon will be encouraged by the partners in the future. Further, data is also collected in two complementary ways:

- Via website (directly in the Registry): the user needs to create his/her account in the registry. The interface is designed to be user friendly. A simple user manual is available for download
- Via e-mail (or through the online form). The e-mails with requests to add/modify items in the registry may be sent to the project's main contact ([info@civic-epistemologies.eu](mailto:info@civic-epistemologies.eu))


Quality and safety of the collected data is a crucial issue and the Registry addresses it in a twofold way:

- Limiting the write access to trusted users, by granting different levels of access rights to people who like to contribute to the registry
- Moderating the contribution, by the appointment of a moderator, who is enabled to modify or reject contributions if needed



**Citizen Science Registry of Resources**

TOOLS , WORKFLOWS, APPROACHES, SOLUTIONS, DEMONSTRATORS, AND APPLICATIONS  
USEFUL FOR SUPPORTING THE INVOLVEMENT OF CITIZENS IN THE SCIENTIFIC  
DEVELOPMENT PROCESS.



LIST   INSERT   LOGOUT

**FILTER**

Add attribute:  

Category

+

Apply

SELECTED 25 ITEMS OUT OF TOTAL 25.

**3D-Stock.eu**

Web

http://www.3d-stock.eu

Category

software tool

EditMore...

**Altes Leipzig**

Web

http://www.altes-leipzig.de/

Field

humanities

EditMore...

**Citizen Science Center**

Web

http://www.citizensciencecenter.com/

Category

community portal, source of information

EditMore...

**Civic Hungary**

Web

www.oszk.hu

Category

source of information

EditMore...

Caption to be added

## LEARNING RESOURCES

A study was conducted to understand the skill gaps, which can hamper the cooperation between cultural heritage stakeholders, researchers and citizens.

The task identified a range of resources and associated activities that are necessary to support the development of new skills that both the citizens and the cultural managers need to gain in order to be ready to cooperate in joint research.

The study resulted in the following outcomes:

- an inventory of existing accessible teaching materials such as Massive Open Online Courses (MOOCs) and Open CourseWare that can fill the identified gaps
- an IPR guidebook focusing on creative citizens to unleash their creativity and providing exploitation models for their rights
- a proposal for a standard for creative citizens skills, as the basis for further development of a 'creative citizens registry'

The description of these learning resources is part of the Roadmap.

## PILOT IN WESTERN IRELAND

The Irish pilot study was conceived as an exploration in the potential to harness the current generation of teenagers' perceived skills with everyday digital technologies and smart devices, to record and learn about non-renewable disappearing heritage.

The pilot focused on placenames and place-based oral history in Ireland, through interviews with local senior knowledge holders within their local communities.

The aim was to discover, at a more abstract level, if we can use cognitive surplus and the wisdom of the crowd socio-technical approaches not just to connect in virtual or online worlds, but to overcome a digital and intergenerational experience social divide in local communities.

During the course of the study, the experts from Waterford Institute of Technology partner engaged with a range of stakeholder volunteers, including teenagers from De La Salle and Gaelcholáiste Phort Láirge secondary schools, senior citizens from a Tramore Local Family Heritage group, placenames and place-based heritage experts and community groups. A group of young volunteer teenage students, aged 15-17 worked at the Waterford Institute of Technology for three weeks with the pilot study coordinator, to co-create a digital toolkit for Intergenerational place-based heritage recording.

The tools were drawn from freely available digital applications for smartphones and computers.

The volunteers interviewed professional people experienced in placename research, architectural conservation, community heritage and oral history, whose guidance was sought in developing simplified approaches for citizen powered digital heritage recording of placename heritage.

The study is set in an Irish cultural and historical context. Existing relevant cultural artefacts, such as Irish Survey, the Ordnance Survey of Ireland, the official governance of placenames in Ireland, the digitization of placenames at Logainm.ie, the play 'Translations' by Brian Friel, and the digitization of the Irish Folklore Collection at

Dúchas.ie – provided rich supporting material for the pilot study. Participatory approaches guided a meeting with senior citizens from a local community Tramore Local Family Heritage group. Those interviews, wherein the seniors' recollections were recorded provided inspirational insights to the young people about societal challenges of earlier eras, as they described rationing, transport, employment, emigration and social customs, whilst describe transformation of local places across time. They also provided initial sample recordings for analysis and editing. Some sample audio segments are made available to the public via a website that was also co-created at that time to showcase the pilot, share their methodology and toolkit, to engage with other students.

The pilot study indicates that citizen science projects often require a flexible and adaptable approach, as there are usually unknown factors, regarding volunteer citizens availability, skills, interests and accessibility. Many citizens are capable in harnessing existing cultural and digital resources and repurposing them for particular local aims, but others require more assistance and some tasks require expertise.

There we find a requirement for ongoing networks between experienced professional humanities researchers, cultural institutes and local citizen volunteers to be established to support the growth of citizen science for the digital humanities. Such a network could be tasked to provide advice, guidance and practical supports such as, for example, copyright access for citizen led heritage studies, privacy and security guidelines, clear guidelines on attribution, acknowledgments and authorship, reusable templates for codes of conduct and consent forms.

Mentorship programmes could also be set up to enable citizens to overcome the potential limitations of non-professional researchers in managing some aspects of the work, which require mature reflection, such as editing.

In essence, we find that while there is great potential to extend the reach of cultural and heritage research with citizen volunteers, citizen powered projects should be adequately supported by networks of experts to ensure firstly that the heritage data and artefacts collected and created are of a sufficient quality, and secondly

that suitable resources and spaces are made available to knit citizen led work into the fabric of cultural institutes.

From our experience with the Irish pilot we can conclude that many different types of citizens are generous with their time and knowledge, interested and eager to make meaningful contributions to their local community and place-based heritage recording, but they need a complex range of socio-technical structures to support and assist them.

Involving existing community groups and social institutions in shared decision making, feasible with co-design and participatory approaches, is significant for social interest and sustainability of this form of research. The experience of engagement through the passing on of local place-based heritage can assist seniors to appreciate the value and worth of their own personal recollection, whilst for teenagers the process of learning about how previous generations lived in one's local area makes history more immediately relevant helps young people see their own position in the community and its potential from a longer term view.

Website: [www.civic-epistemologies.eu/pilot](http://www.civic-epistemologies.eu/pilot)



Photo courtesy of WIT, 2014





## CASE STUDIES IN THE UK

Two case studies, quite different in nature and in content, offered insight into the relationship between marginalized communities and the cultural heritage sector and the affects digital technologies can have on both vulnerable groups and the average citizen. The research team of Coventry University examined already existing digital scholarship. It designed two very different sets of inquiries and spent months investigating, gathering and analyzing the data.

### HIDDEN CULTURAL HERITAGE: INCLUSION, ACCESS AND CITIZENSHIP

This case study examines how community groups of citizens engage with cultural heritage and participate in the generation and reuse of cultural heritage using digital technologies. 'Hidden' cultural heritage refers to culture that is hidden because:

- it takes place in contexts that have limited public exposure
- it resides in the individual histories and experiences of the individual citizen
- it is not the focus of cultural institutions because it is unknown or falls outside conventional archiving strategies
- it emerges and resides within the memories, bodies and creative expressions of those who participate in it

The case study focuses on groups who volunteer to participate in cultural activities, whether theatre, dance, music, art, film making, photography and so on, as part of their own cultural enrichment and journey towards a sense of citizenship. These groups are drawn from a UK arts project: Arts at the Old Fire Station in Oxford – a charity and social enterprise that brings together arts workers and homeless people for professional development.

Websites: [www.oldfirestation.org.uk](http://www.oldfirestation.org.uk)  
[www.crisis.org.uk/pages/crisis-skylight-oxford.html](http://www.crisis.org.uk/pages/crisis-skylight-oxford.html)



Photo courtesy of Josh Tomalin, 2015

## LOCAL CULTURAL HERITAGE: INCLUSION, ACCESS AND ECONOMIC DEVELOPMENT

The value of Citizen Science lies also in the contribution it can make to generating new perspectives and understandings of the contribution of local cultural heritage to local economic regeneration and growth.

Coventry is, in essence, a medieval city that has witnessed great changes brought about by craft-based industries and later industrial processes. In the twentieth century, much of the centre was destroyed in the devastating air raids of 1940. However, a significant proportion of the historic fabric of the city survives. Many historic buildings, although of great value in themselves, have been adapted for contemporary use. In the context of Coventry, heritage is regarded as a dynamic concept: historic buildings and sites are conserved and enrich the environment for residents and visitors but may also provide accommodation for cultural and creative enterprise and other activities.

## A Roadmap for Citizen Researchers in the Age of Digital Culture

An innovative app (developed by the Serious Games International) is used by a selected group of citizens who are enabled to both access information, and more importantly contribute knowledge about their location. The case study also engaged stakeholders, ranging in scale from construction and property companies to smaller creative enterprises and individuals to academic researchers

Websites: [www.visitcoventryandwarwickshire.co.uk](http://www.visitcoventryandwarwickshire.co.uk)  
[www.seriousgamesinternational.com](http://www.seriousgamesinternational.com)



Godiva Statue Coventry 1" by Keith D - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons





A modified version of Coventry\_spires.jpg originally uploaded by the author G-Man to commons with PD license. Licensed under CC BY 2.0 via Wikimedia Commons

## WORKING WITH STAKEHOLDERS

The project held a programme of meetings, including workshops and focus groups, to establish factual exchanges with the target groups and to get them involved in the validation of the CIVIC EPISTEMOLOGIES Roadmap.

### WORKSHOPS: MALTA, LEUVEN AND BUDAPEST

#### Workshop on User needs

This workshop was organised in November 2014 in Valletta, hosted by the University of Malta, to discuss requirements of the various stakeholders relevant to citizen science in cultural heritage institutions. The participating experts suggested scenarios and use cases to illustrate methods of engagement with citizens, and the user interaction within the technological solutions used for the various research lifecycle stages. The event was attended by keynote speakers and experts from all over Europe, the project's partners and local representatives from cultural institutions.



Photo courtesy of Civic Epistemologies project



## Workshop on the Roadmap

This workshop was organised in February 2015 in Leuven, hosted by KU Leuven, to present the draft Roadmap to a group of selected representatives of the project's stakeholders. The participating experts provided feedbacks, comments and suggestions about the strategic document, with indications how to improve its potential impact on decision makers and practitioners. Beyond the project partners, participants included cultural heritage representatives, curators of museums, librarians and archivists, researchers in digital humanities, citizens' associations, creative enterprises and representatives of the e-Infrastructure community.



Photo courtesy of Civic Epistemologies project

## Workshop on Innovation in Cultural Heritage institutions

This workshop was organised in July 2015 in Budapest, hosted by the Hungarian National Library. On the basis of the feedback received at the workshop in Leuven and further online, the workshop in Budapest was the occasion to present the advanced version of the Roadmap. The workshop was targeted mainly to cultural institutions, in order to identify policies and practices, which should apply to cultural institutions in order to be ready to cooperate with citizens and their

organisations in research on cultural heritage, and how to assure the quality of the results of such cooperation. The discussion explored also how the availability of e-infrastructure services can support this process of innovation. The conditions for cultural heritage institutions to participate were investigated, with particular regard to training, equipment, new workflows, and IPR management.



Photo courtesy of Civic Epistemologies project

A full report of the workshops is available on the project's website here: [www.civic-epistemologies.eu/workshops](http://www.civic-epistemologies.eu/workshops)

## FOCUS GROUPS: MALTA, BARCELONA, STOCKHOLM

Three focus groups, one in Malta, one in Barcelona and a third one in Sweden were held between October and December 2014 to initiate the study on the requirement for citizen participation in the research on cultural heritage.

The aim of the focus groups was to analyse the participants' views on the potential strength of the citizen scientists and collect their feedback.

Three project partners were in charge of the focus group, respectively University of Malta, Coventry University and National Archives of Sweden. The participants in the focus group held in Malta consisted of policy makers and cultural heritage managers, Barcelona's group was made up of citizen scientists, while the members in Sweden were archivists and members of citizens' associations on genealogy. The decision to target different types of stakeholders in the three focus groups aimed to capture more clearly the differences in requirements of these three key stakeholder communities.

A protocol for the organisation of the focus groups was established at the beginning of the project, in order to produce comparative results in each group. (The Focus Group Protocol is available for download on the project's website at [www.civic-epistemologies.eu/focus-groups](http://www.civic-epistemologies.eu/focus-groups))

## **Focus Group in Malta – Policy Makers and Cultural Heritage Institutions**

This focus group was held in October 2014, in Valletta, attended by policy makers, managers of cultural heritage institutions and library studies students from the University of Malta.

Most participants have heard of citizen science but not everyone was confident what it really means. Surprisingly, some of the participants who initially were not sure about the meaning of "citizen science", discovered during the group that they actually contributed to citizen science initiatives before. This illustrates one particular point about future awareness campaigns, which might include providing examples of activities which in fact relate to citizen science but which are not "branded" as such.

The participants discussed about the involvement of volunteers in projects undertaken by institutions, which helps to establish long lasting relationships and to produce engagement of the public. Satisfied citizen scientists can help in future projects and might serve also as an effective "word-of-mouth" advertising



the work of the institutions, shortening the distance to people and triggering a positive sharing of diffused memories.

Political awareness of the role of citizen science might get more resources from governments to institutions.

Involvement of young generations was also considered to have a strong potential, both for the contributions they can bring currently to the research on digital cultural heritage and for their future participation in citizen science initiatives.

In general, the group considered that citizen science can be a highly useful method, which can also produce large amount of valuable research data, but often cultural institutions are not yet ready to employ it. While it seems easier to use citizens in a scientific research, the participants were finding it hard to clearly see a path one could take to make use of such an encompassing resource in the cultural heritage sector.

A certain number of preliminary settings are worth to be established:

- A policy framework, job assignments and identification of roles are necessary to be established at the beginning of the collaboration
- Some forms of incentives are needed for motivating the participation of volunteers
- Volunteers need to be trained by professionals who work with citizens and monitor the progress of the research
- The cultural heritage institutions will monitor the quality of the citizen researchers' work by appointing a project leader and establishing a programme of the activities to be carried out and check points
- A technical infrastructure is necessary, including an institutional repository to upload and download files and documents and to be used by the researchers and citizens as their reference point

When organising such an initiative, obstacles arise:

- Taking in volunteers can be difficult, but choosing the right ones is harder. Sometimes, someone can dedicate his/her free time to the institution, but there may be someone with more background experience that can be an asset to the institution
- Funding is also a problem. If it is a new project, some sponsors may not be sure if it is worth it or not. So the cultural institution needs to prove that its project is worthwhile and will be successful
- Considering that the institution has reached the desired number of volunteers, the issue of maintaining the interest of the volunteers will come up in time



Photo courtesy of Civic Epistemologies project

## Focus Group in Barcelona - Citizen Scientists

The focus group helmed by Coventry University, took place in December 2014 in Barcelona and was composed of non-professional researchers.

The project consortium does not include a partner from Spain and organising the focus group in Barcelona provided a chance to tap into the experience and knowledge of local stakeholders. Barcelona is a city that enjoys a reputation for being at the forefront of ICT developments and for its connectivity and for this reason the focus group was located there.

The term “citizen science” was new to the participants, they were not clear of its meaning and its usage and there was a general feeling of being intimidated by the term. After the initial discussion, the participants started using the term quite comfortably and actually all participants agreed they had citizen science experience. Each member of the group had been involved in various projects and investigations – ranging from EU-funded projects, international, national and local projects as well as Lifelong Learning Council of Europe initiatives. One of the participants was active in his local library and had been part of the Immigration Museum. Another participant was working along side the University of Barcelona’s CREA Research Centre. All the participants were currently supporting many of the national and international projects being carried out at the Àgora Association or Huera organization in the district of La Verneda, in Barcelona, Spain.

The use of citizen scientists needs to be carefully understood and take into account the varied needs of the volunteers and the target group. The motivations of the professionals needs to be clearly outlined which would allow the volunteers to have a clear understanding of how and what is expected from them.

The participants agreed that the quality of the work needs to be controlled, even if there was a general agreement that when people feel part of something, there is pride and great care that is taken. The researcher must monitor the progress and process of the work but standard and quality can be monitored also by the non-academics or citizen scientists involved, including the volunteers.

Citizen science projects are perceived to have benefits for both the researcher and the people who engage with the project. The participants highlighted that data collected within citizen science projects are more comprehensive and represents a wider demographic picture. In this light, citizen science could lead to a more inclusive society, gathering a collective memory.

The opinions about incentives for the volunteers (i.e. what are their main motivations to contribute their time and knowledge to a citizen science project) were different. All the participants agreed that monetary or commodities are not the unique ways to gather volunteers. Trying to include their voices and showing the volunteers the short-term and long-term benefits of participating, could be enough.

Several challenges exist in involving people, including organisation issues, access to and handling of resources, trainings, creating a common sense of belonging.

The use of the Internet, social media and other digital technologies can have an important role for the organisation of the projects, as well as the use of TV and media, which contribute to attracting attention to the cultural heritage of a community and country. Through their programming and commissioned projects, media offer a way for citizens to engage with cultural heritage content. Media also helps people from various backgrounds to participate, even those that are often excluded and marginalized.



Photo courtesy of Civic Epistemologies project



## Focus Group in Sweden - Activists

The focus group held by the National Archives in Sweden took place in Stockholm in December 2014.

Both local/regional and central/national levels of activist organisations were represented. The participants specifically discussed the international situation, with the purpose to get an idea how general the participants' viewpoints were and what strategies that are used by activist organisations in different countries.

A first reaction from all the participants was (after looking at a video about citizen archivists produced by the National Archives and Records Administration in the USA) that Sweden is more advanced with respect to the USA when it comes to citizen science/research in archives. In Sweden, activist (i.e. genealogical) societies are organising these kinds of activities themselves. Obstacles may consist of a lack of financial and technical resources and sometimes also the attitudes of the cultural heritage institutions.

The general pattern, as the participants see it, is that citizens normally participate in research activities through their local or regional societies. The cultural heritage institutions are seldom first on stage in these topics.

One striking limitation in today's work of the cultural institutions (at least in Sweden) is their habit to communicate with researchers through folders and fact sheets placed in their reading rooms. Using social media would be a more natural way to communicate. As an example, the National Archives of Sweden have about 1 million unique visitors per year on its Internet sites but only about 30 000 visitors in its 13 reading rooms spread all over the country. The most useful outcomes of organising citizen science projects are, from the perspective of a cultural heritage institution:

- increased interest in the institution and its collections/holdings
- more work will be done
- an opportunity to engage competences that are normally not available internally

The discussion showed that it is obvious that the activist organisations (genealogical societies) in Sweden see themselves as an important part of the knowledge society with an ability to participate in citizen research projects, mainly crowdsourcing initiatives. If there are no cultural heritage institutions in place (or not willing) to support them, they have the strength to organise and run some of these projects themselves using cultural heritage institutions as “a source for crowding”.

It did not become clear if this is the case in other Member States as well or in other countries around the world. In any case, genealogical societies and other activist organisations represent a strong movement that is using different strategies for reaching their goals: in Sweden by organising themselves in a nation wide federation strong enough at a political level to be recognised as an important partner to cooperate with or to listen to; in some other countries by using media (like TV programmes about amateurs digging for archaeological remains in their neighbourhood) or connecting themselves to research projects or programmes at universities with high level of awareness (like First World War photos and personal letters).

The drivers behind private persons taking part in citizen science projects are normally:

- reward of some kind (could be small, symbolic and of less monetary value)
- personal interest
- idealism (helping the local community in some way, religious duty, etc.)
- that the results could be used in the person’s private research

The following conditions are important for organising citizens’ research activities:

- the results of the activities have to be open for all to use (“open access”)
- the technical facilities have to be in place from the beginning and also easy to use
- the planning of the activities has to be made in cooperation with representatives of citizens, in order to incorporate their knowledge right from the beginning

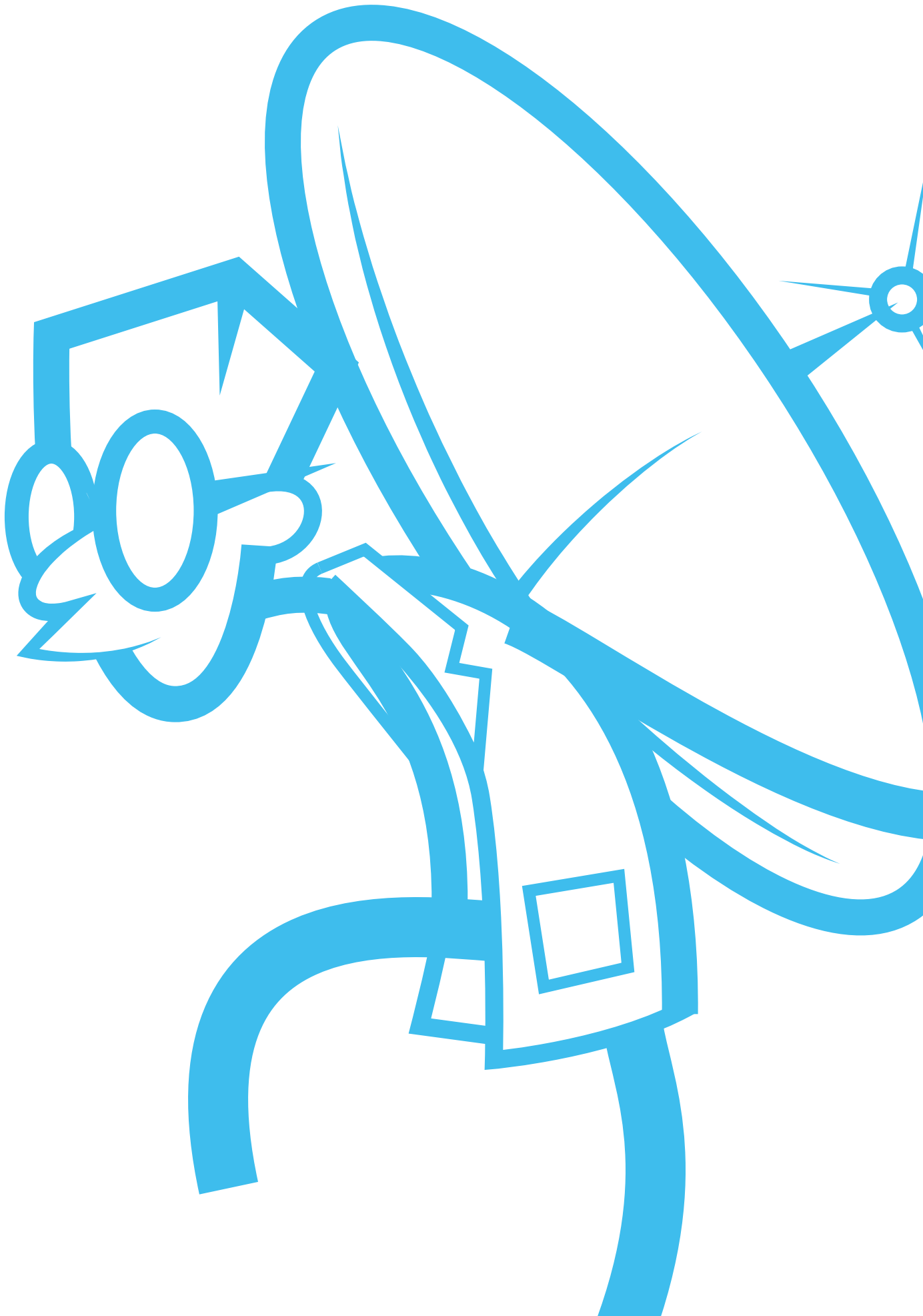
## A Roadmap for Citizen Researchers in the Age of Digital Culture

It was discussed how the cultural heritage institutions could open up for more initiatives in citizen science. Examples of projects were mentioned where activist organisations, the academy and archives cooperated.

All agreed, including the Director General of the National Archives, that the number of “windows of opportunities” for citizen science has to be greater than today. The cultural heritage institutions also have to express their responsibility for new initiatives in this field. Otherwise, other players will take the lead, and they will do it regardless of whether the results will gain the interest of these institutions or not.



Photo courtesy of Civic Epistemologies project





# ONLINE PRESENCE OF CIVIC EPISTEMOLOGIES

## THE PROJECT WEBSITE



[www.civic-epistemologies.eu](http://www.civic-epistemologies.eu)

The website is both the cornerstone of the project dissemination strategy to promote project activities and results to a wide audience, and the access point to the main outcomes.

The project's blog collects news, events and contributions that are directly connected to the CIVIC EPISTEMOLOGIES themes. Any registered user can contribute through the "Send your post" form.

The network section provides information about how to join the CIVIC EPISTEMOLOGIES community. Furthermore, the project website serves as an internal collaborative space for the project's partners.

CIVIC EPISTEMOLOGIES website implementation is based on a very simple logic and a fresh web design, which is intended to drive the user's attention to the main functions of the portal.

## **SOCIAL CHANNELS**

Web 2.0 social networking, bookmarking, blogging, and e-mail services are at the immediate disposition of users. Visitors of CIVIC EPISTEMOLOGIES webpages can bookmark an item using social media services such as Facebook, Twitter, Pinterest, LinkedIn, and Google+ . Bookmarking is available on each blog page (news, events, etc.).

CIVIC EPISTEMOLOGIES has a Facebook page and a Twitter account where all the news and events published on the blog are automatically posted for a wider dissemination.

Facebook: [www.facebook.com/civic.epistemologies](http://www.facebook.com/civic.epistemologies). Twitter: @citizen\_CH

## **SHOW-CASE ON DIGITAL MEETS CULTURE**

CIVIC EPISTEMOLOGIES opened a show-case on Digital Meets Culture – [www.digitalmeetsculture.net](http://www.digitalmeetsculture.net) -, an interactive online magazine in the digital cultural heritage area. Digital Meets Culture is dedicated to the theme of digital technologies applied to cultural heritage and the arts, with a rich archive of articles, information and events about projects and initiatives in the field of the digital technologies applied to culture and arts, with a sharp focus on selected, high profile audiences. The portal has gained notoriety in the global digital cultural heritage community, with c. 19,000 visits per month and more than 700 registered users.

## A Roadmap for Citizen Researchers in the Age of Digital Culture

The Digital Meets Culture showcase dedicated to CIVIC EPISTEMOLOGIES, customised with the colours and graphic design of the project website, is organised with an information page containing a presentation of the project, the interactive partner's list, RSS function to capture news from the official CIVIC EPISTEMOLOGIES website, contact points, and the link to the official website. The showcase shows also a series of articles related to the project activities and partners, and includes interviews, chronicles of project meetings and so on.

Digitalmeetsculture's Showcase:

[www.digitalmeetsculture.net/civic-epistemologies](http://www.digitalmeetsculture.net/civic-epistemologies)



[www.digitalmeetsculture.net/civic-epistemologies](http://www.digitalmeetsculture.net/civic-epistemologies)

## FINAL CONFERENCE IN BERLIN

The EC funding period of CIVIC EPISTEMOLOGIES ends in November 2015 with the delivery of a Roadmap. The Roadmap indicates a set of steps to be followed for progressing in the direction of improving the relationship between cultural heritage and the society.

The CIVIC EPISTEMOLOGIES conference is the occasion to reflect on the wide range of themes addressed by the Roadmap. The programme foresees the participation of delegates from all over Europe, representing policy institutions, research and cultural organisations:

- representative of the European Commission
- representative of the German Ministry of Research and of the Italian Ministry of Economic Development (the Coordinator of the project)
- representatives of the partners; they will illustrate the results of the project, sharing the lessons learnt also through concrete case studies and pilots

A wide audience is targeted, including: policy makers, cultural managers and curators, association of citizens, representatives of the educational sector, creative and cultural enterprises.



Wikimedia Commons, Jean-Pierre Dalbéra, CC BY

## PARTNERS

### Ministero dello Sviluppo Economico, Project coordinator



The Department of Communications of the Ministry of Economic Development, is responsible for a wide variety of policies for the development of telecommunications infrastructures, information and communication technology-based smart services and applications that constitute key factors for economic development. The Department of Communications is involved in the development of the National Broadband Plan to bridge the digital divide, in the planning of Italian strategy for the implementation of the Digital Agenda for Europe and in the development of all the national e-Infrastructures driving the economic development.

Website: [www.sviluppoeconomico.gov.it](http://www.sviluppoeconomico.gov.it)

### Promoter srl, Technical coordinator



Promoter SRL is an SME based in Pisa. It regularly participates in research and innovation activities, both at local and European level. The company operates in several fields, including technical development of ICT platforms and web-design, multimedia production, electronic and web publishing, corporate consulting, dedicated online services for the promotion of culture and tourism.

Promoter is the editor of [www.digitalmeetsculture.net](http://www.digitalmeetsculture.net) magazine.

Website: [www.promoter.it](http://www.promoter.it)

## Riksarkivet



### Riksarkivet

The National Archives (Riksarkivet) is one of the oldest public agencies in Sweden with a history leading back to the Middle Ages. Today, the National Archives has the supervision of public records of all state agencies. The National Archives has been – and still is – a partner in several EU funded projects concerning digitisation, Internet access, and digital preservation.

Website: [www.riksarkivet.se](http://www.riksarkivet.se)

## Stiftung Preussischer Kulturbesitz



### Institut für Museumsforschung

Staatliche Museen zu Berlin

The Foundation is one of the world's major cultural organisations. The Staatliche Museen zu Berlin (National

Museums in Berlin), the Staatsbibliothek zu Berlin (State Library), the Geheimes Staatsarchiv (Secret State Archives), the Ibero-Amerikanisches-Institut (Ibero-American Institute) and the Staatliches Institut für Musikforschung (State Institute for Music Research), all with their origins in the collections and archives of the State of Prussia, are linked to form a close network for cultural transmission. The Institute for Museum Research is the Research Institute working for and on all museums in Germany, being involved in standards development relating to digitisation.

Website: [hv.spk-berlin.de](http://hv.spk-berlin.de)

## National Széchényi Library



BIBLIOTHECA NATIONALIS HUNGARICA

The National Széchényi Library is the Hungarian national library since 1802. It hosts the Hungarian national union catalogue. Its collections consist of paper documents published in Hungary: more



than 2 million books, periodicals, manuscripts, documents, images. The library recently launched the eNSL service to provide copy on demand and e-Infrastructure support to digitization. The library participated in the Europeana initiative contributing with its collections.

Website: [www.oszk.hu](http://www.oszk.hu)

## Katholieke Universiteit Leuven



The Media Lab of the Institute for Cultural Studies at KU Leuven's Faculty of Arts specialises in e-learning for the Humanities and digital cultural heritage, with expertise in digitization techniques, metadata, databases for humanities research. The Faculty of Arts Photolab also hosts the dArts digital photo repository, which currently has 230.000+ digitized images on Archaeology and the Fine Arts with high-quality metadata, including the Sagalassos collection.

LIBIS is a division of Leuven Research and Development and part of the University Library. As a centre of expertise, LIBIS has a strong experience in metadata modelling, data interoperability, archiving and preservation, web-publishing of cultural heritage content and user involvement.

Website: [www.arts.kuleuven.be/home/cs](http://www.arts.kuleuven.be/home/cs)

## Coventry University



Coventry University has an established regional, national and international presence. Its trading arm, Coventry University Enterprises, has extensive experience in the delivery of EU-funded activity. Its School of Art & Design has academic, practical and technological expertise ranging from crafts to digital archiving, dance analysis, screendance, digital library

development, pedagogy in immersive environments and e-learning, public policy and the creative industries.

Website: [wwwm.coventry.ac.uk](http://wwwm.coventry.ac.uk)

## University of Malta



**UNIVERSITY OF MALTA**  
**L-Università ta' Malta**

The University of Malta (L-Università ta' Malta) is the only highest educational institution in Malta which offers education and conducts research in librarianships, archival and information science. The Library, Information and Archival Sciences department from the Media and Knowledge Sciences faculty is the local partner. The Faculty also hosts an Audio-Visual library which had a unique collection of materials used for research and teaching purposes; conversion of materials on obsolete media into digital form started is one of the ongoing activities.

Website: [www.um.edu.mt](http://www.um.edu.mt)

## Poznan Supercomputing and Networking Center



PSNC is affiliated to Institute of Bioorganic Chemistry Polish Academy of Sciences and was established in 1993 by the State Committee for Scientific Research. PSNC serves as a HPC service

provider, the operator of Poznań Metropolitan Area Network, national academic network provider and a network services provider. It is a leading HPC centre in Poland with its 500+ Tflops of computing power, storage and data management infrastructure. It is also active in digital libraries and content management, it is involved in regional and national projects dealing with data preservation and enabling open, efficient and reliable access to documents, books and manuscripts.

Website: [www.man.poznan.pl/online/en](http://www.man.poznan.pl/online/en)

## Waterford Institute of Technology



Waterford Institute of Technology

The Telecommunications Software & Systems Group (TSSG), is an ICT research centre based at Waterford Institute of Technology, founded in 1996. TSSG's engineering, computing and communications expertise ranges from network management, pervasive technologies, context and social network analysis, data mining, social computing, cloud computing, data management, security and privacy, software verification and validation, user experience design and evaluation, to web and mobile application development.

Website: [www.wit.ie](http://www.wit.ie)

## Arctur d.o.o.



Established in 1992, Arctur has progressed to become the main Slovenian commercial supplier of Cloud Computing services & solutions, High Performance Computing and innovative Web Services in a distributed, high-redundancy environment. The company has extensive experience in programming, server virtualization and deployment, integration of disparate IT-systems, IT support of project-management and server farm leverage for the deployment of Software as a Service (SaaS). Understanding the importance of continuous progress, Arctur has its own R&D department, registered with the Slovenian Research Agency.

Website: [www.arctur.si](http://www.arctur.si)

## Stichting European Grid Initiative



The Stichting European Grid Initiative (also referred to as “EGI.eu”) is a not-for-profit foundation established under Dutch law to coordinate and manage the European Grid Infrastructure federation on behalf of its members: National Grid Initiatives and European International Research Organisations. EGI.eu

offers a variety of services to the wider EGI community such as overseeing infrastructure operations, coordinating user community support, working with technology providers, representing EGI in collaborative projects, steering strategy and policy development, organising flagship events and publicising the community’s news and achievements. EGI.eu supports more than 22,000 researchers across many scientific fields with a wide range of technical services such as high-throughput data analysis, federated cloud, federated operations and community building.

Website: [www.egi.eu](http://www.egi.eu)



Information Technology, Research & Innovation

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[www.civic-epistemologies.eu](http://www.civic-epistemologies.eu)

[www.digitalmeetsculture.net/civic-epistemologies](http://www.digitalmeetsculture.net/civic-epistemologies)

Twitter: @citizen\_CH

Facebook: [facebook.com/civic.epistemologies](https://facebook.com/civic.epistemologies)

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