CIVIC EPISTEMOLOGIES
Civic Epistemologies: Development of a Roadmap for Citizen Researchers in the age of Digital Culture

How to get forward:

The Civic Epistemologies Roadmap on citizen science for digital cultural heritage

Borje Justrell, National Archives of Sweden(Riksarkivet)

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The CIVIC EPISTEMOLOGIES Project

CIVIC EPISTEMOLOGIES is about the participation of citizens in research on Digital Cultural Heritage and Digital Humanities. The projects main outcome is a sound Roadmap for the implementation of an

e-infrastructure

- to enable creation, access, use and re-use of digital cultural heritage and humanities content
- to provide learning resources
- to provide communication services to multidisciplinary research teams located in different geographic places
- to enable citizens to participate in a range of research goals established at European level together with cultural institutions and universities.

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

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Main Challenges

CIVIC EPISTEMOLOGIES has identified three main challenges:

1. **Turning the wheel of citizen engagement**

The participation of Europe's citizens in scientific research represents an important opportunity for improving European competitiveness, but this opportunity has not yet been fully developed. In this framework, CIVIC EPISTEMOLOGIES targets use and usefulness of citizens' engagement in cultural heritage practices and humanities research; such engagement has a twofold benefit for culture:
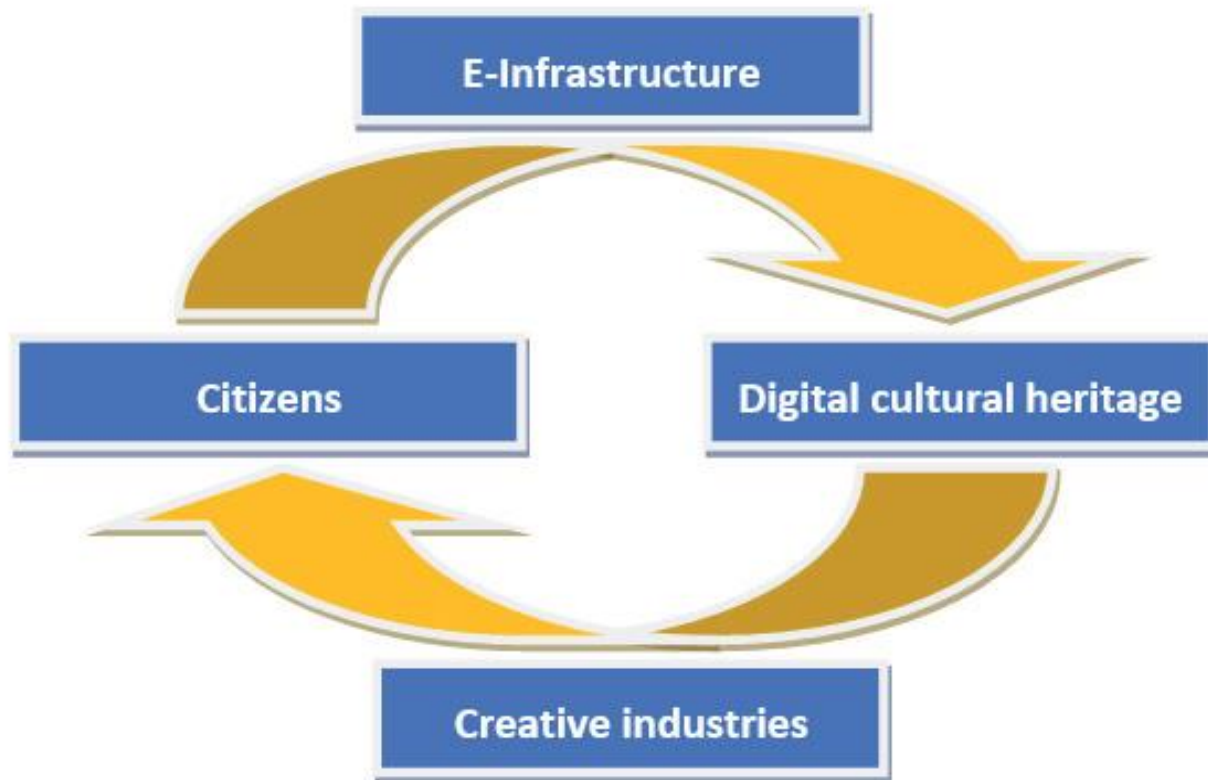
• To be enriched by the citizens' contributions

• To become more widely used and exploited (for example with the participation of creative industries)

The Wheel of Citizen Engagement

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Main Challenges

2. Co-producing and co-creating knowledge

There is a considerable interest among the public in exploring, recording and cataloguing their own cultural heritage or that of their community or locality.

For cultural heritage institutions and academies citizen engagement offers occasions to be closer to citizens who are actually their audience. For cultural heritage institutions it also adds to the knowledge base of their collections, and opens up new ways for their collections to be used.

But it does also create challenges, raising issues about curatorial authority over interpretation and on skill development to empower citizens to participate in research etc.

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Main Challenges

3. Ethical and social issues

Citizen science demands a thorough awareness of the roles of each actor in the research and a clear allocation of responsibilities. This is even more complex when several players are involved: academies, citizens, and cultural heritage institutions.

The dialogue between these groups is not always simple; they use different specialist languages and jargon.

Also the interests of each group are different: academies look for improving their knowledge, cultural heritage institutions aim is to preserve the knowledge of the past, and citizens look for a deeper involvement in interpretation of their culture and for exciting experiences.

Developing sound terms of reference of citizen science projects is an important challenge to be faced by the concerned stakeholders.

Work Done to Benefit From

The Civic Epistemologies project has looked into other domains to find out if there are experiences of distributed services in digital culture heritage and humanities that are transferrable to the field of citizen science.

Apparently, very little has been done so far, but digital preservation seems to be the area in which distributed services offered by e-Infrastructure for the digital cultural heritage sector has been mostly explored.

The need for robust support in digital preservation was identified by the INDICATE project and its "sister" project DC-NET. A succeeding project, DCH-RP, developed a Roadmap for preservation of digital cultural heritage content, mainly by using distributed services (e-Infrastructure).

The Europeana Cloud project also addresses the problem of storage and permanent accessibility of cultural data records.

An initiative with the aim to facilitate long-term access and use of European Arts and Humanities digital data is also DARIAH, the Digital Research Infrastructure for the Arts and Humanities, established as a European Research Infrastructure Consortium (ERIC) in 2014.

Work Done to Benefit From

The advancement of Information and Communication Technologies (ICT), the Internet and mobile technologies opens a new perspective for bringing together different communities, unified by their interest to contribute to research.
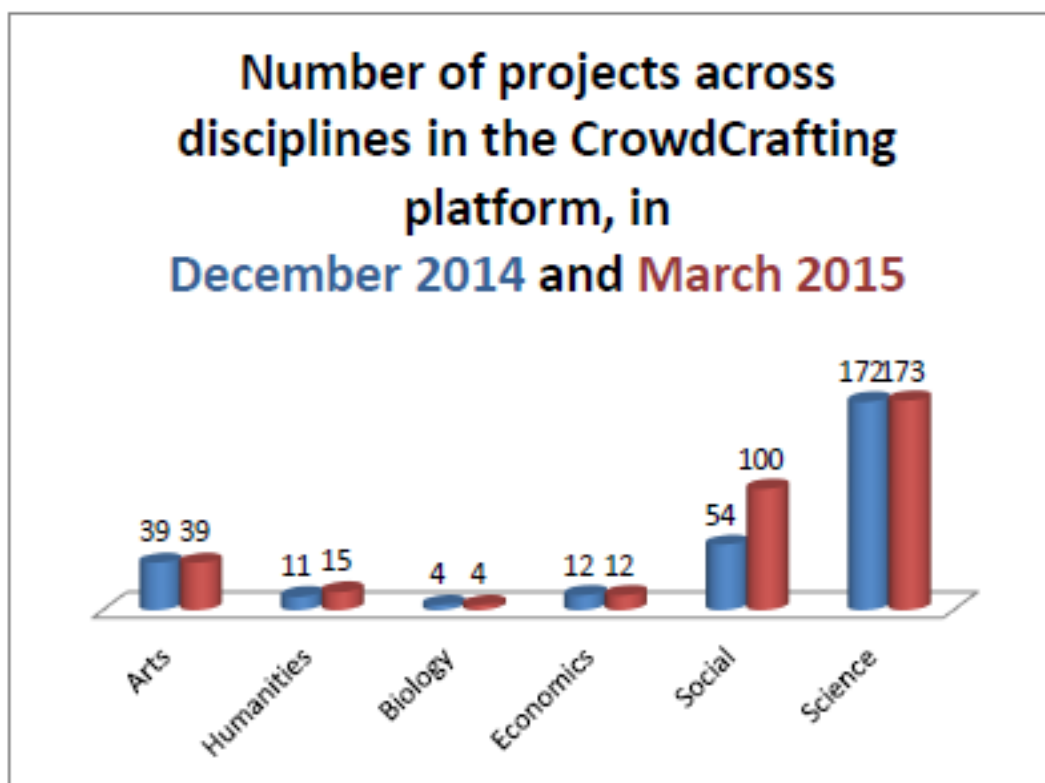
Result: A rapid growth of citizen science initiatives/projects around the globe; the interest has grown to such an extent that specialised platforms have been created which allow defining research tasks and involving users; e.g. *Zooniverse* and *CrowdCrafting.*

Why are Humanities not using citizen science more actively?

Number of projects across disciplines in the CrowdCrafting platform, in December 2014 and March 2015

Arts: 39 39
Humanities: 11 15
Biology: 4 4
Economics: 12 12
Social: 54 100
Science: 172 173

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Work Done to Benefit From

The *Socientize* project has identified a number of drivers and barriers for citizen science, some of them with bearing on the use of e-Infrastructure.

One of the main drivers: By providing storage, accessibility, and computing power for managing the data, e-Infrastructures enables citizen science, especially if citizen-based resources like networks of desktop computers, mobile phones and other private devices are to be used in a project.

Examples of barriers: Access and interoperability of the citizen science data sets need – generally speaking - to be improved; when such data sets have been created by scientists for their own needs, these data are sometimes difficult to use for other groups, like citizens or researchers.
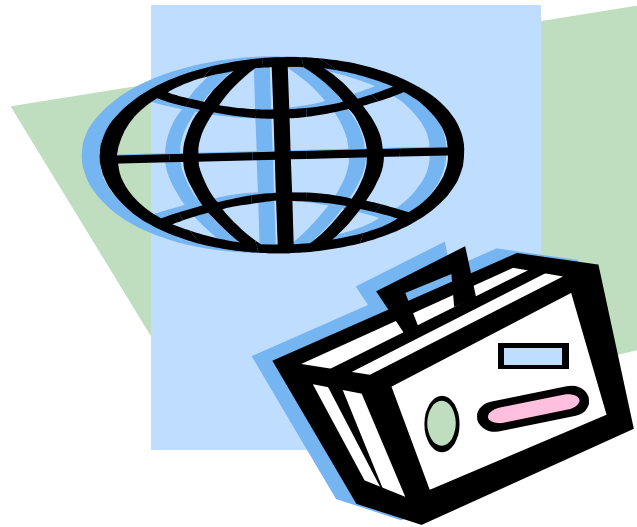
But - opening up for wider use of data sets, immediately raises the question of ownership and IPR issues.

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The Roadmap

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The Aim

The aim of this Roadmap is to illustrate a path towards the engagement of citizens in the research and valorisation of cultural heritage, by using distributed services like digital tools and online communication offered by the e-Infrastructures.

But, these services are meant not only for the participation of citizens (together with cultural and academic institutions) in the research processes. These services shall also support

• the participation of creative industries in the exploitation of digital cultural content

• artists in their role of mediator between sectors not used to work together

• providers of added value services for the benefit of the society at large

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The Road Map to Preparedness

Start

Finish

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Center For Public Health Preparedness
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The Roadmap – an on-going process

The Roadmap is intended to be a living document, open to contributions from researchers, e-Infrastructure providers, cultural managers, artists, students, teachers, and citizens interested in the matter.

An online version of the document is published on the CIVIC EPISTEMOLOGIES website where visitors can deliver their comments to improve and ameliorate; it is in other words an instrument offered to the community for free use and re-use.

http://www.civic-epistemologies.eu/roadmap

Some Basic Elements and Assumptions

Elements

• The 'map' draws the landscape of citizen science for the digital cultural heritage and humanities research – in this case much depends on the maturity of the scientific processes in this domain and on the flexibility and usefulness in services provided by e-Infrastructures.

• The 'road' points to an action plan – in this case also to a set of recommendations aggregated around each targeted stakeholder group.

Assumptions

The Roadmap is built on two implicit assumptions:

• Existing e-Infrastructures for research and academia are efficient channels also for the

delivery of distributed services to be used by the cultural heritage and humanities domain for supporting citizen science

• It would be possible to establish common policies, processes and protocols which allow the

this domain to access e-Infrastructures, despite the fact that e-Infrastructures often are

national entities, sometimes with different policies and procedures for access and usage

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Overview of the Handbook

Five chapters:

1. Introduction –introduces the concept of citizen science in the domain of Digital
Cultural Heritage and Humanities and provides links and references to connected
areas of work. It also introduces the relationships between arts, creativity and technology and
the role that artists and creativity can play in the context of citizen science initiatives.

2. Our vision –presents the vision of the CIVIC EPISTEMOLOGIES partners.

3. The Roadmap - focuses on the Roadmap and its different parts. The Roadmap itself
consists of five parts, each of them set out in separate sections presenting:
- a short review of what the Roadmap stands for
- the presentation of the targeted groups of stakeholder and their requirements
- the lessons learned during the implementation of the project activities and identified gaps
- the main components of the Roadmap, namely timeframe and areas of action
- the on-line forum as an instrument for the development of the network of common
interest

4. A proposed action plan - points out the most important actions to take in the major
areas of the Roadmap and provides a list of recommended actions to be taken by the targeted
stakeholder groups when they want to initiate a citizen science project.

5. Conclusions - summarises on a general level the discussion of the previous chapters.

Who are the stakeholders?

These are the key ones, all with different roles to play:

• **Cultural heritage institutions and academic institutions** (e.g. the research communities)

- to identify clear protocols of interaction with citizen scientists and internally

- as programme owners and decision makers on different levels, allocate budgets and implement good governance

• **E-Infrastructure providers**

- to plan for future deployments

• **Citizen organisations**

- to associate and organise activists into representative bodies

• **Policymakers**

- to support institutional conditions and make necessary financial resources available
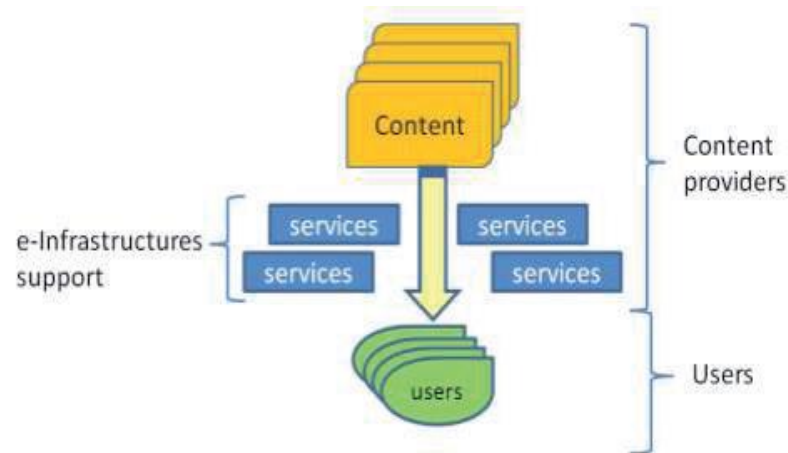
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Who are the stakeholders?

The academic institutions, in their role to identify the protocols for citizens' engagement, not only will enhance the citizens' roles within communities of interest at local, national and potentially global levels, but also increase the reach and impact of their research.

The role of cultural heritage institutions will also change: from being traditionally just content providers to becoming also service providers.

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Who are the stakeholders?

Other identified complementary stakeholder groups are:

• **Artists and the creative sector in general**

• **Schools and the education sector in general**

For them citizen science is not expected to be considered as a core activity

Artistic and creative practices contribute to the establishment of engagement processes. Artists can act as mediators between the cultural institutions and citizens, inspiring co-creation initiatives which can take place both online and in the physical premises of museums, libraries and archives.

Schools and educational practices can successfully host citizen science initiatives, contributing to attracting youngsters' interests and creating new liaisons between the schools and the society.

Disparate needs and requirements makes the question of dialogue and establishing a common framework particularly important. A valuable reference is the *RICHES Taxonomy*

Gaps

Some gaps are expected to be filled when implementing the Roadmap:

1. THE LAST MILE

- Lack of know-how

- Better uptake of intangible cultural heritage

- Better focus on business value

- Need for enhancing cohesion and inclusion

- Need for new opportunities of funding

- Need for digital tools and technical platforms for including the public

2. E-INFRASTRUCTURE SERVICES FOR CITIZEN SCIENCE

3. NEED FOR A NEW MIND-SET

The Main Components of the Roadmap

A timeframe

The CIVIC EPISTEMOLOGIES Roadmap should make it possible for each institution in the cultural heritage and humanities domain to define its own practical action plan with a realistic timeframe for the implementation of its stages.

Three time frames have been considered:

• **Short-term (2016- 2017)**. The purpose of proposing a short-term action plan (2016) is to initiate the development of e-Infrastructure services on a level that will be self-sustainable and continue to progress on its own.

• **Medium-term (2018-2019)**. The medium-term action plan covers the two years after the end of the CIVIC EPISTEMOLOGIES project and it concerns the production phase, when the developments initiated during the short-term action plan are deployed.

• **Long-term (2020 and beyond)** for the logical continuation of the work and full implementation of the citizen science initiative.

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The Main Components of the Roadmap

Seven areas of action

Based on an analysis of the state of the art and the requirements expressed by different stakeholder groups, seven main areas have been selected for actions:

1. **Empowering existing e-Infrastructures with new services**.

This action aims to develop and make available the specific new services that can satisfy the needs of digital cultural heritage and humanities research communities.

2. **Tailoring new services to the requirements of each research community**.

This action aims to customise the new services on the basis of the individual specifications of the research project where the services are going to be used. Terms of reference, definition of roles and responsibilities, and guidelines will be important components.

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The Main Components of the Roadmap

3. **Improving interoperability and re-use**.

This action concerns the implementation of a better integration of internal and external digital resources within the overall workflows for handling research data. This action is important in order to put in place a set of measures to avoid building 'digital silos' within the organisations participating in the research.

4. **Establishing the conditions for cross-sector integration**.

Cross-sector integration is a key condition for maximising the efficiency of successful solutions, transferring knowledge and know-how between different sectors. A scalable and modular approach to the e-Infrastructures deployment is needed that will allow serving research better and reduce costs of development.

The Main Components of the Roadmap

5. **Developing governance models for infrastructure integration**. T

The agreement on governance modules is a necessary condition for successful institutional participation in larger e-Infrastructure initiatives. This includes also aggregation and re-use of digital resources.

6. **Exploring artistic and creative practices as an instrument for engagement**.

This is an area which still requires to be recognised and exploited in terms of its potential for social innovation and cohesion.

7. **Developing ad-hoc training and awareness opportunities for targeted users**.

Training and awareness of target users is a key pre-condition for the successful implementation of a citizen science initiative. The actors involved come from different background and have different experiences, therefore they should reach a compatible level of knowledge that can allow sharing information and understanding instructions from the project leaders.

The Main Components of the Roadmap

A web space dedicated to the Roadmap

By the end of the project, this web-space will continue to be hosted in a dedicated section of CIVIC EPISTEMOLOGIES website at http://civic-epistemologies.eu/roadmap.

A Proposed Action Plan

The action plan consists of two parts:

• A list of proposed actions, following the timeframe and the selected areas for actions

• A list of recommendations aggregated around each targeted stakeholder group

Proposed actions

Short-term (2016- 2017)

STEP 1: TO START UP (basic considerations to be taken into account)

STEP 2: TAKE ACTIONS IN IDENTIFIED AREAS OF THE ROADMAP

STEP 3: CHOOSE SERVICES TO ADDRESS

Medium-term (2018-2019)

STEP 1: WHERE ARE WE NOW AND WHICH ARE THE NEXT STEPS

STEP 2: TAKE FURTHER ACTIONS IN THE MAJOR AREAS OF THE ROADMAP

STEP 3: PLAN FOR ACTIONS DURING THE LONG-TERM STAGE

Long-term (2020 and beyond)

The focus of the long-term action plan should be to

• Review the plan established in the previous phase

• Implement services and tools identified and developed in earlier stages

• Fill in remaining gaps in cross-sector interaction

• Offer a mature business model for the use of chosen services provided by e-Infrastructure

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Recommendations

This is a list of recommendations aggregated around targeted stakeholder groups.

The recommendations can be seen as general requirements for fulfilling a citizen science project and are based on the results of the user studies conducted during the CIVIC EPISTEMOLOGIES project.

For each stakeholder group the recommendations are connected to the three stages of a generic citizen science project, namely: preparatory, deployment, and monitoring stages.

Some Conclusions

Over the past decades we have witnessed a sustained growth in the scope and scale of participation of people from outside established research organisations in all aspects of scientific research. Cultural heritage and humanities are not an exception, although the number of projects is not as high as in other domains of science.

One of the most important lessons learned, which the Roadmap tries to disseminate, is the necessity to consider a shift in mentality in both the cultural heritage and the academic sector. The participation of non-professional curators in the development of new knowledge has to be fully accepted, and appropriate procedures and guidelines have to be designed and applied in line with that. Otherwise, there is a risk in missing a big opportunity in mobilise additional non-conventional resources for the research on cultural heritage and humanities.

Finally, the exploration of how artistic and creative practices can support the research on cultural heritage and humanities has also started. It is a process that will require time to become actually a standard approach, but its potential, also in the domain of the citizen science in digital cultural heritage, is high and very worthwhile to be pursued.

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