Input for Stakeholder Communities workshop – The archaeological research community perspective

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A. Technical challenge
2. Non-interoperability, findability, sustainability and accessibility of scattered institutional repositories (again API’s meta-data standards etc.).

Archaeology is an extensive and multi-disciplinary field of research that spans several domains of the humanities and the natural sciences, cultural heritage research and public administration, academic scholarship as well as commercial services.

Archaeological research infrastructures form a very heterogeneous and fragmented landscape. The heterogeneity of the research methodologies of the archaeological community, together with the heterogeneity of the information technologies that are currently in use by researchers are fundamental challenges to be addressed.

The ARIADNE project, coordinated by PIN, addresses the fragmentation of archaeological datasets in Europe and aims to foster the (re-)use of data through the interoperability of digital archives with the implementation of an e-infrastructure that meets the needs of a large segment of the archaeological community. The infrastructure will support a culture of sharing and collaborative use of archaeological data across disciplinary, organizational and national boundaries.

A stakeholder survey carried out within the ARIADNE project revealed that researchers are first struggling to know what data exist. The wishes expressed by the stakeholders allowed the detailing and prioritization of the functionality of the infrastructure service design. These can be clustered in five main categories of user needs:

1. Data transparency: inconsistent interfaces, insufficient provenance information and scattered and heterogeneous resources are the challenge for archaeologists wishing to use data.
2. Data accessibility: data appeared as difficult to find, because not online, and when online, difficult to access. Lack of downloadable “raw data” for re-use, such as the database used for the creation of a scholarly edition, which is not usually shared is also a big concern among archaeologists.
3. Metadata quality: due to the lack of awareness about the importance of metadata for data sharing, most researchers often do not produce metadata for various data(sets) they generate in projects. To allow data sharing the additional effort to produce metadata needs to be covered someway.
4. Data quality: users often complain lack of usefulness because data are structured in different way, are incomplete or lack important details, and are not up to date.
5. International dimension: researches between different institutes and access to a wider geographical dataset will help facilitate cross-collaboration and enhance funding opportunities.

To address these challenges ARIADNE had decided to pursue its mission by following a pragmatic approach, based on the recognition of the existing data and service resources and on the development of an infrastructure where data and services resources can be registered, discovered, and accessed in a

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1 ARIADNE - Advanced Research Infrastructure for Archaeological Dataset Networking in Europe (EU, 7th Framework Programme, 02/2013-01/2017), http://www.ariadne-infrastructure.eu
uniform and integrated way in support of the existing research methodologies and regardless of the different architectures that support the resources in their original format.

Concerning issues about online accessible data, users of the ARIADNE portal will benefit from an innovative mechanism that allows a quick scan of data resources to quickly assess their usefulness, including some pre-filtering or ranking services.

As regards metadata, their production may be facilitated by specialized tools. The ARIADNE infrastructure will support advanced e-research practices enabling aggregation, integration and mining of datasets. These will be performed through:

- identification of available datasets through faceted search functionality
- data aggregation, search and delivery
- links to relevant tools/workbenches
- deep and dependable linking between datasets and tools
- ontologies for data mining, integration, and analysis.

Having access to international data(sets) was perceived as “very important”, because of comparative research for broad synthesis or meta-analysis. ARIADNE will help enrich services of underlying repositories, by suggesting and providing links to similar or complementary collections or individual items held by other domain repositories.

Many archaeologists, like the researchers in most other disciplines, are not prepared yet to make data openly available to others outside a research project or organisation. To overcome this “data selfishness”, the ARIADNE project contributes to the emergence of a culture of open sharing of archaeological data, trusted data archives (where missing at present), and mobilization of data resources that are interoperable and re-useable.

ARIADNE will provide the archaeological sector with a common, European-level data infrastructure and portal. The solution will require sustained efforts to allow for maintenance and extension, e.g. mobilization of data resources of all EU Member States and integration with relevant other European data infrastructures.

B. Community and policy challenges

2. Funding bias adverse to multi-disciplinarity

ARIADNE promotes coordination among many on-going but currently fragmented efforts in building e-infrastructures, data and knowledge resources for archaeological research in Europe and beyond. It is hoped that this will foster cohesion and synergies among initiatives, yield effective spending of available funds, and results in sustainable digital archives, e-infrastructures and services as needed by the research community.

Regular coordination activities at the European level are necessary to ensure interoperability of the e-infrastructures and digital resources as required by heritage science, i.e. archaeological, cultural heritage and related humanities research. Such coordination activities have already started in the PARTHENOS project.

In the medium- and long-term perspective (5-10 years) also synergies with e-infrastructures of other related domains research may be sought, environmental and life sciences, for instance. Notably, we do not see archaeology as belonging exclusively to the humanities; rather this field of research is multi-disciplinary, involving research across many disciplines.

This effort is prevented by the lack of funding for multi-disciplinary research projects, as registered in the last years. From a recent analysis of projects granted by the European Research Council, for instance, only 6% of granted projects in the “Study of the past” panel includes funds for multidisciplinary projects. Additional funds for multidisciplinary projects should be mobilized.

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