

## Archaeological Project Management<sup>1,2</sup>

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### Abstract

In recent years, one could get more information on the projects being implemented, which may be related to obtaining other types of funding. Achieving success in project management requires extensive knowledge and its applications.

Projects can be made according to very different criteria (Oliński M., 2016): because of the size of the project (employees, duration, financial outlays); because of purpose for destiny (internal, external); place of implementation (in enterprises, public administration, schools, local government units, hospitals, etc.); type of project (innovative, investment, development, research, teaching, etc.); source of financing (from domestic, foreign, mixed funds); on the expected profitability (modernization, introduction of a new product, higher productivity, etc.); as well as by projects typical for the computer industry.

Due to the type of the project, archaeological projects can be distinguished, which on the one hand can be designed by scientists which on the one hand can be designed by scientists. The main stages of the project implementation are as follows: 1) planning, 2) data collection, 3) analysis, reports, transfer of sources and documentation, 4) long-term storage. (EAC Guidelines 1).

The article will present the specificity of archaeological project management, based on the example of the project entitled: "Pafos-Agora and infrastructure and economic activity of the Hellenistic capital and Roman Cyprus on the basis of interdisciplinary investigations" carried out at the Institute of Archaeology of the Jagiellonian University<sup>3</sup>.

The research is carried out on the basis of literature analysis, field observations, research and project management and members of the archaeological expedition.

**Key words:** *project management, international project, archaeological project.*

JEL code: M10, M12

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<sup>3</sup> Project page: <http://www.paphos-agora.archeo.uj.edu.pl/>

## Introduction

Archaeology (from Greek: *archaios* - old, *logos* - speech, story) –is a word meaning speaking, inquiring about the past, about old things. There are many definitions of archaeology. Most of them describe it as a science exploring ancient human history based on the material remains of its activity. The most important of the tasks of archaeology is the desire to recreate in the most complete way, the manner and conditions of old people's lives. The purpose of archaeology is also to preserve the world's cultural heritage and protect it from destruction or robbery. As the subject of archaeology is a man, it is assumed that it "begins" with the appearance of the first objects considered to be made by our ancestors and "lasts" respectively to modern times, because the object thrown away by us in the trash is becoming part of the just created future cultural heritage. (Ławecka, 2011).

The document that created the legal basis for a specific cultural policy of the European Union was the Treaty on European Union, the so-called the Maastricht Treaty, which entered into force on November 1, 1993. In art. 128 of the Treaty, Member States have defined the purpose, competence and scope of Community action in the field of culture. In art. 128 paragraph 1 The Community has set as its goal, the contribution to the cultures flourishing of the cultures of the Member States, respecting their national and regional diversity while at the same time emphasizing the common cultural heritage. This meant the legitimacy of the role and importance of cultural diversity of the Member States of the Community in the integration project, while granting the Community the competence to take action to promote a common heritage. In art. 128 paragraph 2 The Community clearly defined the scope of its activities in the field of culture and subordinated them to the principles of complementarity and subsidiarity.

Community action was aimed at encouraging cooperation between Member States and, if necessary, supporting and supplementing their activities in listed areas. They consist of the following:

- increasing the level of knowledge and popularizing the culture and history of European nations,
  - preservation and protection of cultural heritage of European significance,
  - non-commercial cultural exchange,
  - literary and artistic works, including audio-visual items.
- (Jurkiewicz-Eckert D., 2015).

The purpose of this article is to present the specificity of archaeological project management. The article was inspired by the project entitled "Pafos-Agora and the infrastructure and economic activity of the Hellenistic capital and Roman Cyprus on the basis of interdisciplinary research" carried out at the Institute of Archaeology of the Jagiellonian University in Poland.

## Introduction to project management

The system approach to project management assumes that the project should be perceived as a form of conversion of a given form of effort into a result (Maylor H., 1996).

The concept of project, both in theory and practice, takes on a variety of forms and meanings (Drobnik A., 2005).

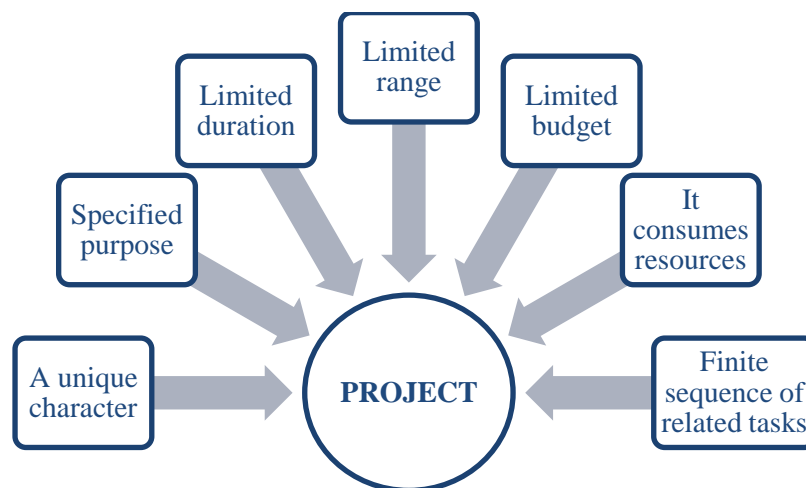
Quoting Kerzner, the project should be considered every series of tasks that characterize (Kerzner H., 1998):

- a specific goal, necessary from the point of view of specific technical parameters,
- dates, which is the start and end time,
- financial constraints,
- the use of resources such as people, equipment, money.

According to Young, the term design, should specify a set of combined activities, organized in a structured way, with a clearly defined start and end date, to achieve specific results that will meet the organization's needs resulting from its current business plans and the overall development concept (Young T.L., 1996).

According to Rosenau, the project has four characteristics that differentiate it from other planned and managed activities, these are: three-dimensional goals, uniqueness, use of resources, implementation within the organization (Rosenau M.D., 1992).

Based on the literature recognition and practice, we can identify common features of the project, which are presented in Fig. 1.



Source: Authors' own work

**Fig. 1. Features of the project**

The concept of project management can be understood as the process of making decisions necessary for the proper implementation of project tasks and their implementation (Pawlak M., 2006).

Project management is also a team of managerial activities related to the implementation of projects and a set of principles, methods and measures used in these activities (Trocki M., 2003). Haberfellner by project management understands all activities related to the preparation and implementation of decisions related to the implementation of projects, with a view primarily to managing the problem solving process (Haberfellner R., 1992).

There are three main problem areas of project management (Trocki M., 2009):

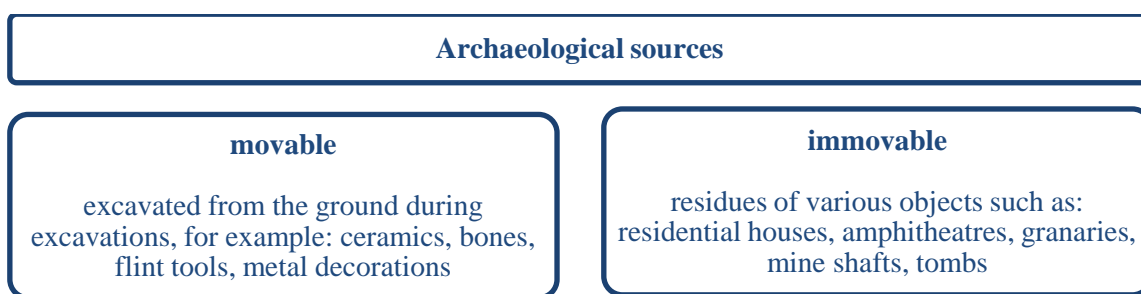
- Functional project management:
  - What is the subject of the project?
  - What goals are to be achieved and what tasks should be performed and in what order?
  - What resources do you need to commit to the project and these tasks?
- Institutional project management:
  - How should tasks, competences and responsibilities be assigned to the project?
  - How should the implementation of the project be included in the organizational structure of the enterprise?
  - What should be the flow of information between elements of this structure?
- Personnel project management:
  - What are the main values, management styles or behavioural patterns that are necessary during the project implementation?
  - What tasks related to motivation or staff training should be implemented?
  - What requirements for knowledge or skills of employees are necessary from the point of view of the project and who can meet them?

### **Archaeological project management**

To understand the specificity of an archaeological project, it is necessary to clarify such terms as archaeological sources and archaeological sites.

We call archaeological sources all material traces of people's activities from the earth or water in the past, enabling the reconstruction of various areas of their lives.

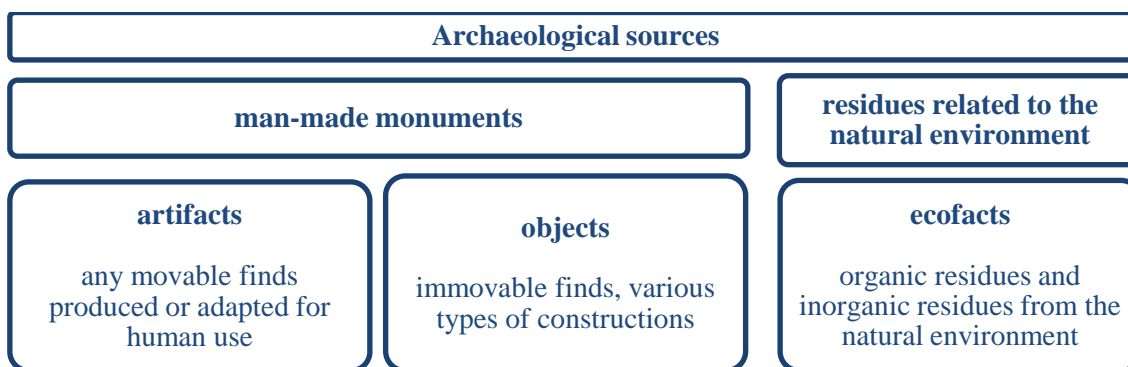
Archaeological sources can be divided into movable and immovable, as shown in Fig. 2



Source: Authors' own work (Ławecka D., 2011, p. 81)

**Fig. 2. Archaeological sources according to the static criterion**

The category of archaeological sources includes residues produced by man and by nature, as shown in Fig. 3.



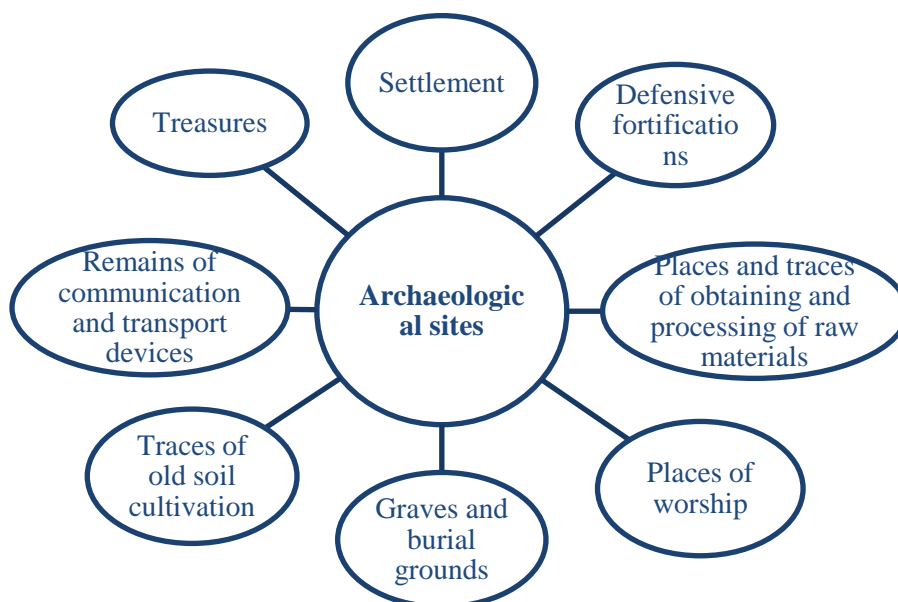
Source: Authors' own work (Ławecka D., 2011, pp. 81-82)

**Fig. 3. Archaeological sources according to the origin criterion**

According to Mazurowski, the position is called a section of area, in which archaeological sources are grouped together with the context explaining them, having the property that it is separated from other similar spaces in which there are no archaeological sources, and thus constitutes a compact area from the point of view of research methodology field.

Ławecka reports that the archaeological site is every material trace of human activity in the past. In the case of most positions, it will be true to say that it is a spatially compact area where artefacts, ecofacts and objects co-exist. (Ławecka D., 2011).

The division of archaeological sites can be made according to various criteria, for example visible on the surface and below ground level, or simple and complex. The division of archaeological sites is important because of the functions they performed in the past. Exemplary types of archaeological sites, due to their functions in the past, are presented in Fig. 4.



Source: Authors' own work (Ławecka D., 2011, pp. 83-84)

**Fig. 4. Types of archaeological sites, due to the functions they performed in the past**

The term 'archaeological project' or 'project' will be used to describe any piece of archaeological activity that results in an archive.

A project is understood generally to be a temporary piece of work undertaken to meet stated goals and objectives which will operate to a timetable and an end date, deliver a product, and have defined scope and resources. It will usually have a project manager and be undertaken by one or more persons brought together for that particular activity. (EAC Guidelines 1).

An archaeological project is any programme of work that involves the collection and/or production of information about an archaeological site, assemblage or object in any environment, including in the field, under water, at a desk or in a laboratory. Examples of an archaeological project include: intrusive projects such as excavation, field evaluation, watching brief, surface recovery and the destructive analysis of objects; non-intrusive projects such as landscape or building survey, aerial survey, remote sensing, off-site research such as desk-based assessment and the recording of objects or object assemblages. The re-investigation of archives in curatorial care also constitutes an archaeological project. (EAC Guidelines 1).

EAC Guidelines 1, identifies the stages of the archaeological project (the first three are the main stages):

- 1) Planning,
- 2) Data Gathering,
- 3) Analysis, Reporting and Archive Transfer.
- 4) Care and Curation (long-term storage).

**Planning.** The start-up or initiation stage, a time when: documents such as project outlines and/or designs, tenders, work specifications and methodologies, will be written; research aims and objectives identified; project scope, stages, products and tasks described; a project team identified, specialists consulted and resources allocated; temporary care and long term curation procedures and repositories identified; project review schedules agreed and communication, disaster management and health and safety plans devised. This is the stage where archive creation and compilation begin.

**Data Gathering.** In archaeology this stage is often applied to fieldwork but for the purposes of the Guide, data gathering means the execution stage of a project, when archaeological data and/or materials (finds) are collected. Whether the archaeologist is undertaking original research in the field, the office, laboratories or stores, this is the stage where factual data is recorded with minimal interpretation.

**Analysis, Reporting and Archive Transfer.** This stage is commonly called post-excavation, however not all archaeological projects will involve excavation, as for example in building recording, survey or finds analysis and this stage has been renamed to reflect modern archaeological practice. Analysis involves fuller, targeted recording and interpretation, whether that is of the field records, a finds assemblage or the results of a geophysical survey. The resulting records, such as data and images, will be included in the archive. This stage will normally end with a final report. Different types of analysis may result in the creation of several reports, some of which will be included in the final project report. The acceptance of those reports into the project archive is an important element of creating an accessible resource. Once analysis and reporting have been completed, it is expected that the project will no longer generate new records,



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materials (finds) or samples and the project archive will be compiled and prepared for transfer to a repository for long term curation.

Care and Curation (long-term storage). Curation is the process of ensuring that archive materials remain stable, secure and accessible in the long term. It is an ongoing process that ensures the integrity of an archaeological archive after the project has been completed but the care of all archive components is a process that should start at the beginning of a project, from the point any documentation is created or material objects (finds) are collected. Any archaeological materials or documentation created or collected from the planning stage onwards will require temporary care until transfer to a repository for long term curation. Care of the components selected for archiving is an activity which forms a thread running throughout an archaeological project and will involve both temporary care and long-term curation of the documentary and material (finds) archive.

(EAC Guidelines 1).

### **Information on the Project**

The ancient town of Nea (New) Paphos was founded by the end of 4th or the beginnings of 3rd century BC and after some time took on significance by becoming the capital of the island in the Hellenistic and Roman times. It replaced the Old Paphos (Palaepaphos, today Kouklia village) in its economic and administrative functions. However, Old Paphos remained the main centre of the Aphrodite's cult on the island. The monuments of Nea Paphos uncovered, starting from the 60's of the 20th century by Cypriot archaeologists and numerous foreign missions, have been inscribed in the UNESCO World Cultural Heritage list. (Papuci-Władyka E., 2016).

In 2011, a license granted by the Department of Antiquities in Nicosia allowed to commence archaeological research of the Agora in the ancient town of Nea Paphos in Cyprus. The Paphos Agora Project (PAP) is headed by the Department of Classical Archaeology of the Jagiellonian University (JU) Institute of Archaeology. The project aims to investigate the history and development of the city's central part – the main marketplace, the Agora. The research goes also beyond the Agora itself and aims to answer open questions concerning the economic infrastructure and trade activity of Nea Paphos during Hellenistic and Roman times. (Papuci-Władyka E., 2016).

The Paphos Agora Project (PAP) had modest beginnings – first team consisted of only 20 people. By the 2015 season, mission had grown to 70 members, consisting primarily of employees, doctoral and undergraduate students from the JU Institute of Archaeology. However, mission also benefitted from volunteers – both students from JU and other Polish universities (Poznań, Toruń, Łódź and Warsaw) and from abroad, as well as, freelancers and archaeology enthusiasts from Czech Republic, Croatia, Cyprus, Greece, Germany, UK, USA, Italy and Slovakia. (Papuci-Władyka E., 2016).

Investigations of the Paphos Agora during the first phase of the project (2011–2014), which were financed from the OPUS grant of the National Science Centre (NSC, no. 2011/01/B/HS3/01282), aimed to answer many questions. The main question was whether the Hellenistic Agora was situated in the same place, under the Roman one. Other questions related to when the excavated area had started to be the Agora; what it had looked like at the beginning and later on, during the changes and rebuilding caused by, among others, the frequent earthquakes in Cyprus; how it had functioned as a public space. (Papuci-Władyka E., 2016).

The second phase of research began in 2015, financed by the new NSC grant MAESTRO (no. 2014/14/A/HS 3/00283), which aims to continue research in the Agora itself and to search for the remains of other material infrastructure related to the economy and trade (e.g. other market places, harbours, warehouses, workshops) outside the Agora, based on non-destructive investigations. (Papuci-Władyka E., 2016).

The Paphos Agora Project is an interdisciplinary research effort with expertise in specialized areas of archaeology, architecture, geodesy, geophysics, 3D laser scanning, photogrammetry, aerial photography and preservation. A variety of research, prospection, and documentation techniques were applied. Researchers created a Digital Terrain Model (DTM), which is the representation of land surface point elevations of the investigated area. All processed data have been stored in a GIS environment (on-going process). Consequently, it will be possible to depict the excavated site virtually on a computer screen. This modern system, named the Archaeological and Archaeometric Information System for PAP (AAISforPAP), a database specifically for documenting excavations, is slowly being implemented since 2013. It will provide easy access to all excavation data for project participants and – in the future – for other scientists.

Excavated portions of the Agora (500m<sup>2</sup>) only account for 5% of the entire Agora.

Many architectural remains were excavated including: small shops (Lat. *tabernae*) from the Roman period located in the eastern portico next to the Agora's entrance and on a street directed towards the theatre, many walls, floors, and hydro-technical devices (e.g. channels, terracotta pipelines for the city's water supply, basins, wells, and cisterns for water collection). Huge amounts of portable objects also excavated include: numerous pottery sherds, olive oil lamps, coins, metal objects, terracottae, glass vessels and objects, stone artefacts, roof tiles, and animal bones. After working in Paphos for 211 days, project discovered thousands of ceramic sherds and non-ceramic objects, additionally 13,000 roof tile fragments. 1747 special finds were registered and almost 19,000 photographs were taken. The findings presented in this volume are only a small sample of what members of the expedition have excavated to date. (Papuci-Władyka E., 2016).

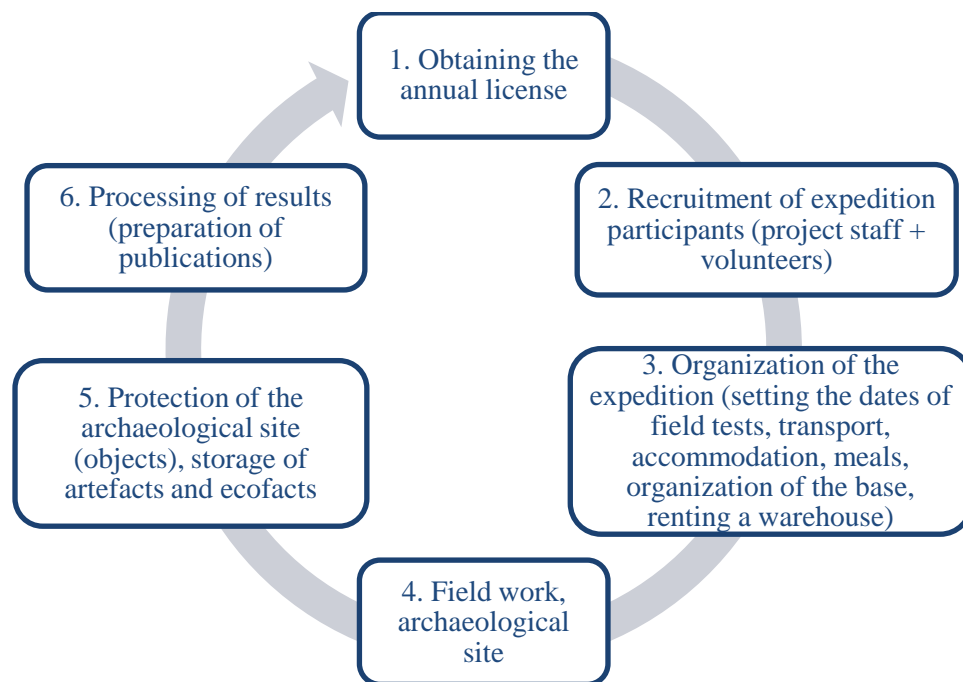
### **Conclusions, proposals, recommendations**

It can be observed that the stages of the archaeological project are visible in The Paphos Agora Project.

At the beginning, the former prospection was carried out before archaeological excavations, which involved the use of methods for searching and locating positions, as well as methods for detailed identification of sites already located.

Proper work related to data gathering was carried out in annual cycles, as shown in Fig. 5.





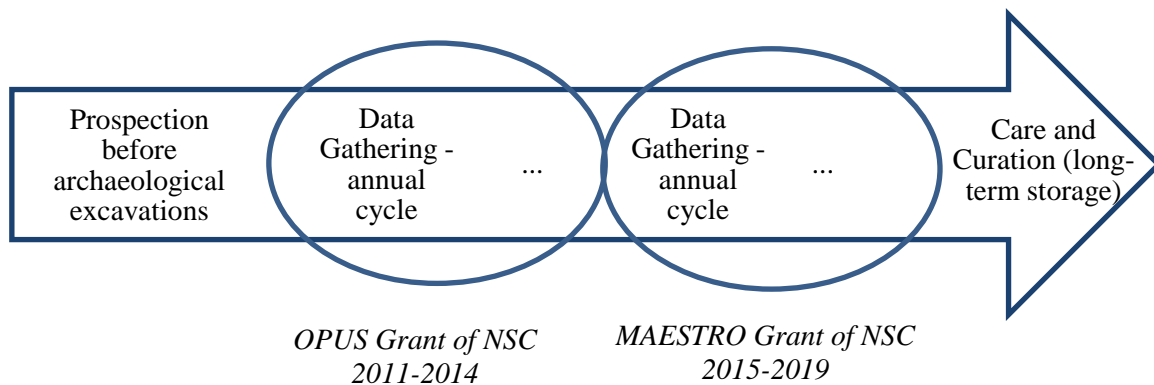
Source: Authors' own work

**Fig. 5. The annual cycle of the data collection stage on the basis of The Paphos Agora Project**

The basis for conducting archaeological research is to obtain an annual license, issued to the head of the archaeological expedition. In addition to specialists involved in the implementation of the project: archaeologists and specialists developing specific types of discovered monuments (archaeologists studying ceramics, numismatists, etc.), but also architect, surveyors, geophysicists, laser scanning specialists, aerial photography, photogrammetry and conservator, a large group of participants of the expedition were volunteers. The logistic and organizational activities in the project were very important. Proper field work was carried out in the spring and summer months, in Cyprus, outside the seat of the Jagiellonian University. All archaeological sources were kept on record, photographed, and after cleaning and maintenance, stored in a designated local warehouse. The prepared documentation enabled the development of results, preparation of scientific publications.

The completion of the archaeological project involves the necessity of transferring archaeological sources - to the museum, to the warehouse, or making it available to visitors in the archaeological park.

A simplified model of the archaeological project stages is shown in Fig. 6



Source: Authors' own work

**Fig. 6. Stages of the archaeological project based on The Paphos Agora Project**

On the example of The Paphos Agora Project, the following main problem areas of archaeological project management can be distinguished:

- Functional project management:
  - Search and location of positions.
  - Detailed recognition of sites already located.
  - What is the subject of the project?
  - What will be the sources of financing the archaeological project?
  - Obtaining a concession.
  - What goals are to be achieved and what tasks should be performed and in what order?
  - What resources do you need to commit to the project and these tasks?
- Logistic project management:
  - Organization of the archaeological sites (securing the site, providing a social place for eating and short rest, toilet, Internet access).
  - Organization of the base near the archaeological sites (place of work of specialists with basic equipment, secured warehouse, utility room, social room, toilet, water, Internet access).
  - Organization of accommodation for expedition members.
  - Organization of food and drinks for members of the expedition, taking into account specific preferences (eg. for health reasons).
  - Organization of tools and materials necessary during excavation (transport of own equipment, purchase or rental on site).
  - Providing software for collecting data on archaeological sources and IT devices for data collection.
  - Organization of transport during field research.
- Institutional project management:
  - How should tasks, competences and responsibilities be assigned to the project?

- How should the implementation of the project be included in the organizational structure of the university?
  - What should be the flow of information between elements of this structure?
  - During fieldwork, decisions are made on-site without the University's support.
  - During fieldwork, the necessary shopping is carried out on site without the University's support.
- Personnel project management:
    - What requirements for knowledge or skills of employees are necessary from the point of view of the project and who can meet them?
    - What requirements for volunteers are necessary from the point of view of the project and who can meet them?
    - Proper recruitment of members of the archaeological expedition, determination of predisposition to archaeological work.
    - Ability to manage an interdisciplinary team.
    - Ability to manage a multicultural team, where members of the expedition come from different countries.
    - Ability to build a team and resolve conflicts.
    - Strength for physical, monotonous work, resistance to high temperatures and high humidity, acceptance of field conditions.

Archaeological projects are scientific projects, because a team of researchers is undertaking work to achieve the progress of scientific knowledge.

Archaeological projects have certain features of logistics projects because efficient management of logistics processes during data gathering is necessary to achieve the project's success.

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