

**Interreg
Europe**



European Union | European Regional Development Fund



2nd Thematic Seminar “Digitization of Museums and Galleries”

Florence, 9th May 2017

PAPADATOS PANOS

Scientific Association

Electrical Engineering & Computer Technology MSc, MBA

<https://gr.linkedin.com/in/panos-papadatos-6a37ab33>

ARVANITI ELENI

Researcher , University of Patras

Business Administration , MBA

eleniarvanit@upatras.gr



ΠΑΝΕΠΙΣΤΗΜΙΟ
ΠΑΤΡΩΝ
UNIVERSITY OF PATRAS

...Museums and Galleries in a Digitized World

...Museums and Galleries in Greece



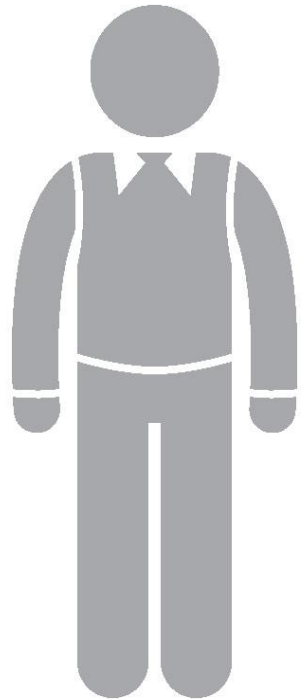
Greek Museums

- **Archaeological museums (78) – (7 in RWG)**
- **Byzantine museums (25)**
- **Folklore and historical museums (46) – (5 in RWG)**
- **Foreign Cultural museums (12)**
- **Art museums (33)**
- **Natural history museums (16)**
- **Technology museums (18)**
- **Military and Maritime museums (20)**
- **Other museums (61)**

The most usual focus of these museums is Greece's cultural heritage and antiquities, with art galleries and contemporary culture playing a much smaller role in Greece's museum make up.

MUSEUM VISITORS TRAFFIC

2016



MUSEUMS



TOP 5

Museum Traffic



1.406.096
ACROPOLES



447.093
NATIONAL
ARCHAEOLOGICAL



355.237
HERAKLION



237.361
RHODES
ARCHAEOLOGICAL

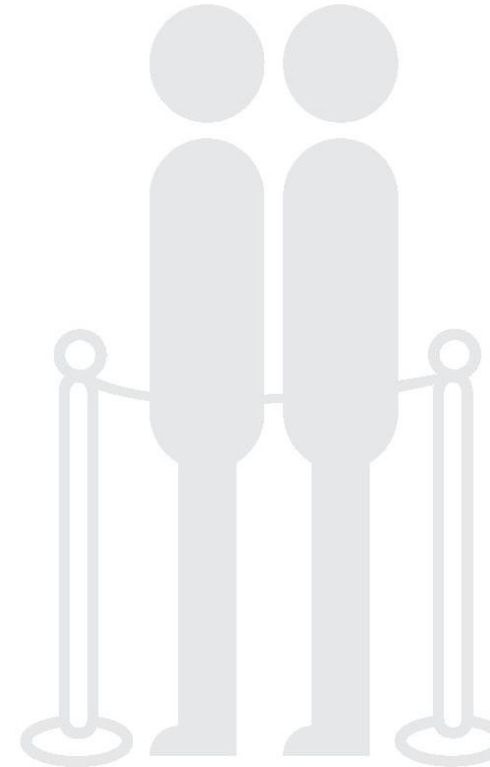
RWG

Museum Traffic

165.500
ILIA

21.461
ACHAIA

6.446
AITOLOKARNANIA



Greece does not win from its museums

How much is the average revenue per visitor ?

- In Greece ~6,00 €
- In Europe ~ 19,00 €

How much percentage of revenue is the ticket ?

- In Greece ~ 85%
- In Europe ~ 35% (the rest is books, souvenirs, mobile apps etc)

According to a study by McKinsey on behalf of Greek Tourism Confederation (SETE), the state could raise its revenue up to 300M € over the next five years by making better use of its cultural heritage



Why ???

- Most of the museums have only web sites
- Museums have no long term Business Plan
- Museums acts are defined and controlled by the Archaeological Receipts Fund
- Museums have no Technology Departments – no Marketing Departments
- The private commercialization / initiatives of exhibits by companies requires a commission on the turnover of 20% to the government
- Any digital actions are left without maintenance, upgrade or update



What is the Solution?

DIGITIZATION and EXPLOITATION PLAN

based on digitization services and
digitized objects



Digitization in Museums

The uniqueness of the museum is based on the fact that each visitor perceives the different stimuli (exhibits, programs, material, etc.) in a different way, and tries to give them their own meaning based on their knowledge, experiences, expectations and feelings.

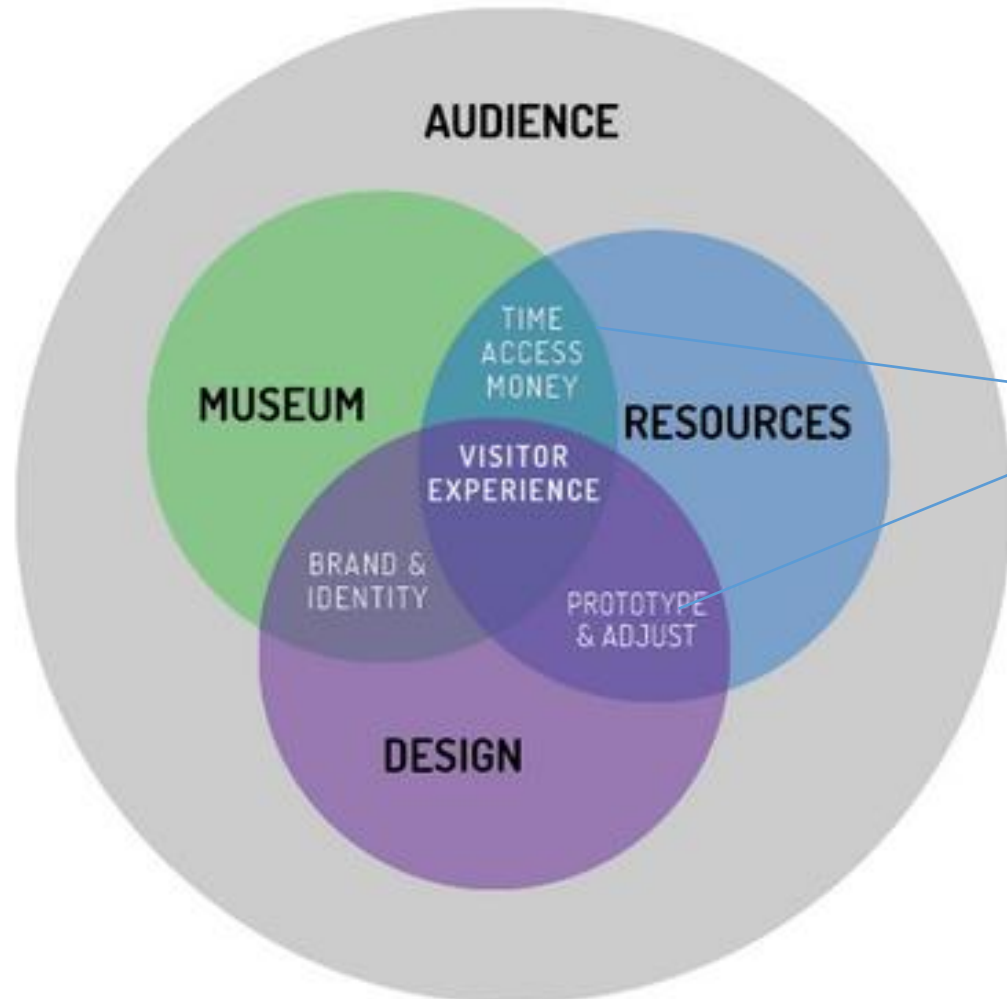
This means that the experience of the visit is **different** and **unique**, for each visitor.

The main goals of digitization process are:

1. Enhancement of collections
2. Promotion and Dissemination
3. Accessibility
4. Improvement of the visit and conversion of a simple visit to a rich media experience
 - Education
 - Interaction
 - Entertainment



Museums and Galleries



The audience / visitors is the main influencer in creating the experience.

The three basic dimensions **Museum**, **Resources** and **Design** are influenced by audience's /vistor's **needs, motivations, and expectations.**

DIGITIZATION

When combined and implemented **correctly**, based on the required parameters,

- Time
- Access
- Money
- Brand
- Prototype

the correct “visitors’ experience” is created.



Why Digitization ?

Although it is clear that there is no real substitute for an authentic historical artifact, there is still an incredibly important need to realize their digital preservation.

Earlier in 2016, Islamic State jihadis destroyed a 2,000 year old statue of a lion in the Syrian city of Palmyra. The 15 ton artifact is now lost to history forever.

Despite stringent security measures and physical preservation techniques, some day in the perhaps far distant future, every object in the Museums will perish in its own way.



So....

Have You Backed Up Your Monuments Recently?



...Digitization Methods and Techniques



Why Digitization ?

- **Preservation (Digital)**
- **Protection – Maintenance**
- **Research**
- **Education**
- **Enhancement - Dissemination**
- **Accessibility**



What **is not** Digitization

- Digitization is not the development of a Web Site
- Digitization is not a simple photo shooting or scanning for the needs of a book or a mobile app
- Digitization is not a 2D representation of 3D objects
(exceptions are cases of promotion of an exhibition)
- Digitization is not a Virtual Tour
(exceptions are cases of promotion of an exhibition)



Digitization tools – per type of Exhibits



Film and Slide scanner



Flatbed scanner for Prints, Glass, and Transparent objects



Large format scanner for maps and oversized materials



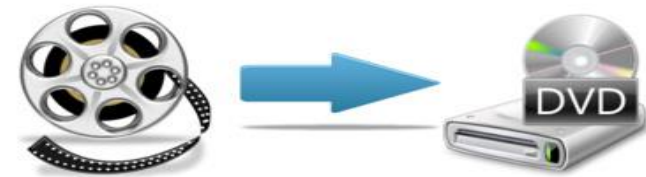
Audio conversion



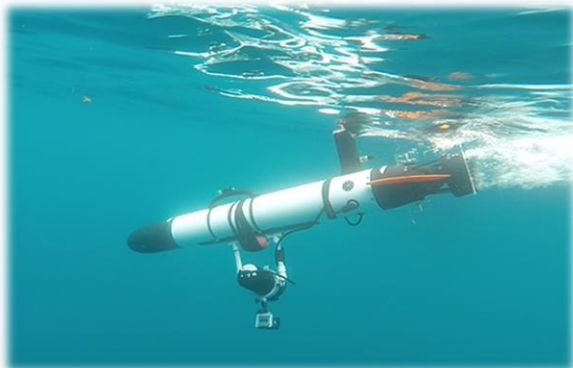
Book scanner for Book, Oversized Prints and Maps



DSLR for Oversized Prints, Maps, Scrolls, and 3D objects



Video conversion



Laser scanner



UAV Aerial scanner



...is something more than a simple scanning
or a simple photo shooting

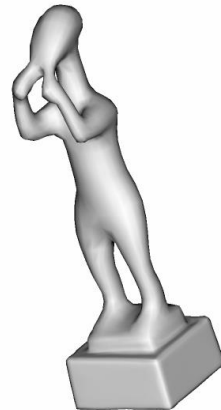


...good digitization Cases in Greek Museums



Digitization War Museum www.warmuseum.gr

- In the context of improving the **War Museum** services, from June 2014 until October 2015 have been made digitization and documentation tasks for the most of museum artifacts.
- Project's aim was the development of fully available online digital services that will attract people and particularly younger ones to Hellas' war history, through combined interventions between education and culture. Of particular importance are artifacts 3D models, which were in fact the innovation of the project.
- Major problems that addressed were the vast amount of items, the great size variations that demanded the usage of a series of parallel workflows each of them using specialized equipment and most serious, time constraints that urged procedures to be carried on keeping museum's halls out of order as less as possible.



Digitization War Museum

In general, within the project the following activities were implemented:

- Digitization and documentation of all of the cultural material
- Online presentation of all digitized exhibits of the museum to the broad public, especially the ones that either haven't the opportunity to visit, or wish to further deepen their knowledge
- Virtual museum and virtual 3D museum
- Virtual guide mobile app that can be run either on the mobile device of the visitor, or on a device that can be lent from the War Museum during visit

VR digitization (3d scanning) made through a dedicated photographic studio that features an automatic high precision 360-degree photographic table that can produce as many as 120 pictures per rotation to resolution up to 36 Mpixels per shot, summing to an outstanding 4.32 Gigapixel object representation.

Such information is useless in everyday life, but it can be useful for long-term archival and also it can easily produce lower resolution files for Internet or every other use.

RT-1200 Object VR Table

Nikon D800 Camera

Bowens Studio Flash and Supporting Equipment



EU - BEST PRACTICE “THE BRITISH MUSEUM”

<https://sketchfab.com/britishmuseum>



0

Emperors

7 models



1

Egyptian objects

18 models



0

Object Journeys

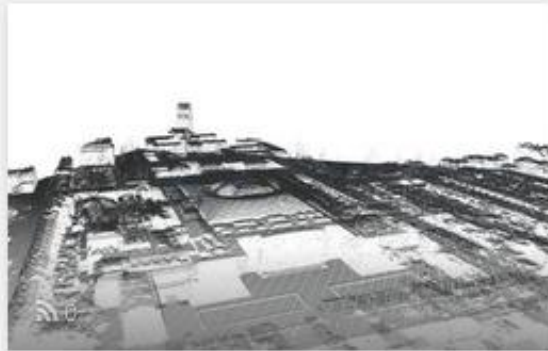
4 models



10

Digital Pilgrim

12 models



0

Buildings

1 model



0

Room 3

3 models



0

Middle Eastern Sculpture

3 models



0

Busts

7 models



Byzantine and Christian Museum

<http://www.ebyzantinemuseum.gr>

COLLECTIONS

VIRTUAL TOUR

THEMATIC ROUTES

WAREHOUSE

TIMELINE

GAMES

CALENDAR

SEARCH

The **Byzantine and Christian Museum**, which is based in Athens, is one of Greece's national museums. Its areas of competency are centered on – but not limited to – religious artifacts of the Early Christian, Byzantine, Medieval, post-Byzantine and later periods which it exhibits, but also acquires, receives, preserves, conserves, records, documents, researches, studies, publishes and raises awareness of.

The museum has over **25,000 artifacts** in its possession. The artifacts date from between the 3rd and 20th century AD, and their provenance encompasses the entire Greek world, as well as regions in which Hellenism flourished. The size and range of the collections and value of the exhibits makes the Museum a veritable treasury of Byzantine and post-Byzantine art and culture.

Collections

COLLECTIONS

VIRTUAL TOUR

THEMATIC ROUTES

WAREHOUSE

TIMELINE

GAMES

CALENDAR

SEARCH



20th and 21st-c.
art Collection



Ceramics



Copies



Dionysios
Loverdos
Collection



I. and D. Passas



Icons and



Manuscripts,



Minor Arts

COLLECTIONS

VIRTUAL TOUR

THEMATIC ROUTES

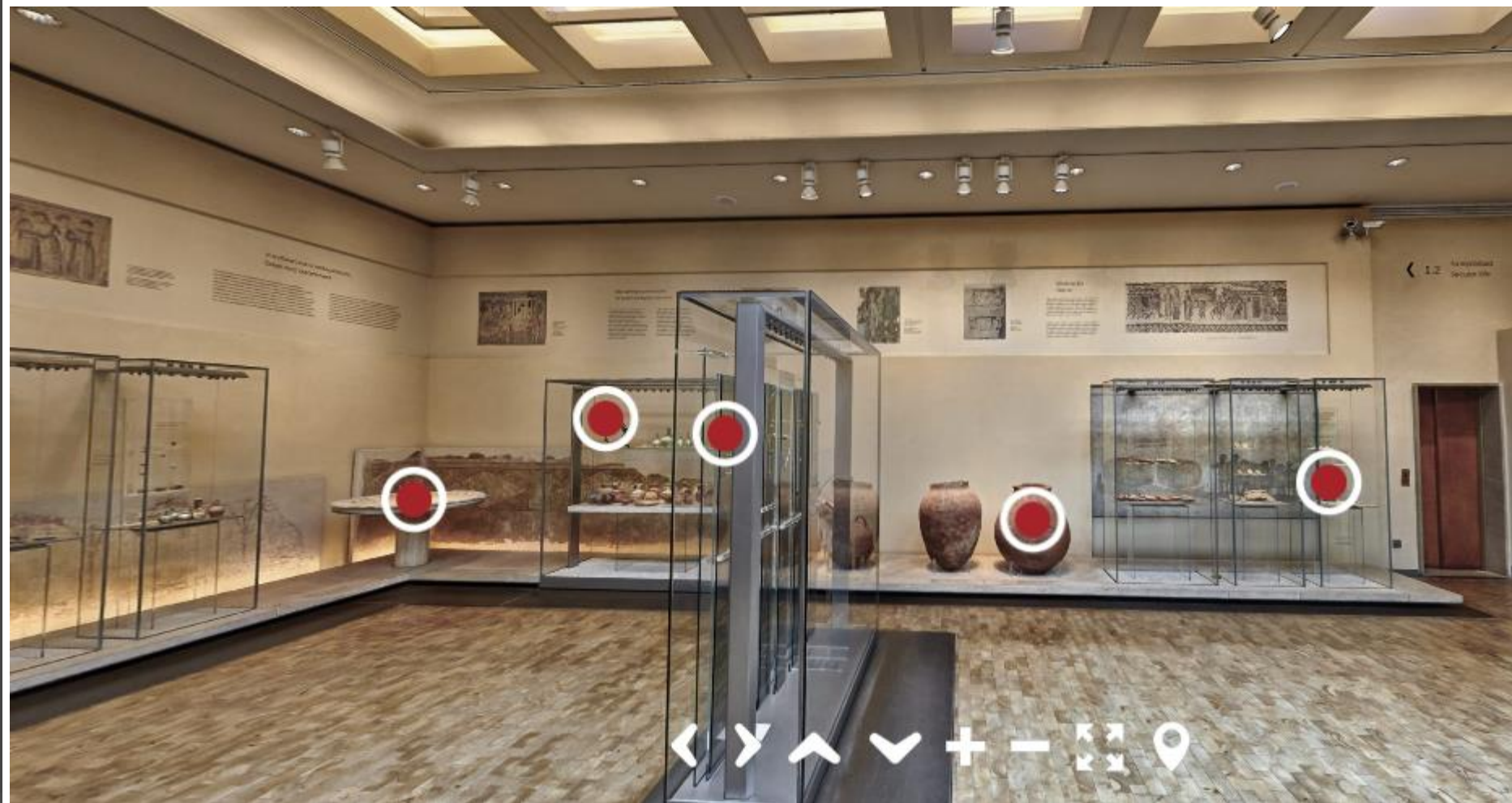
WAREHOUSE

TIMELINE

GAMES

CALENDAR

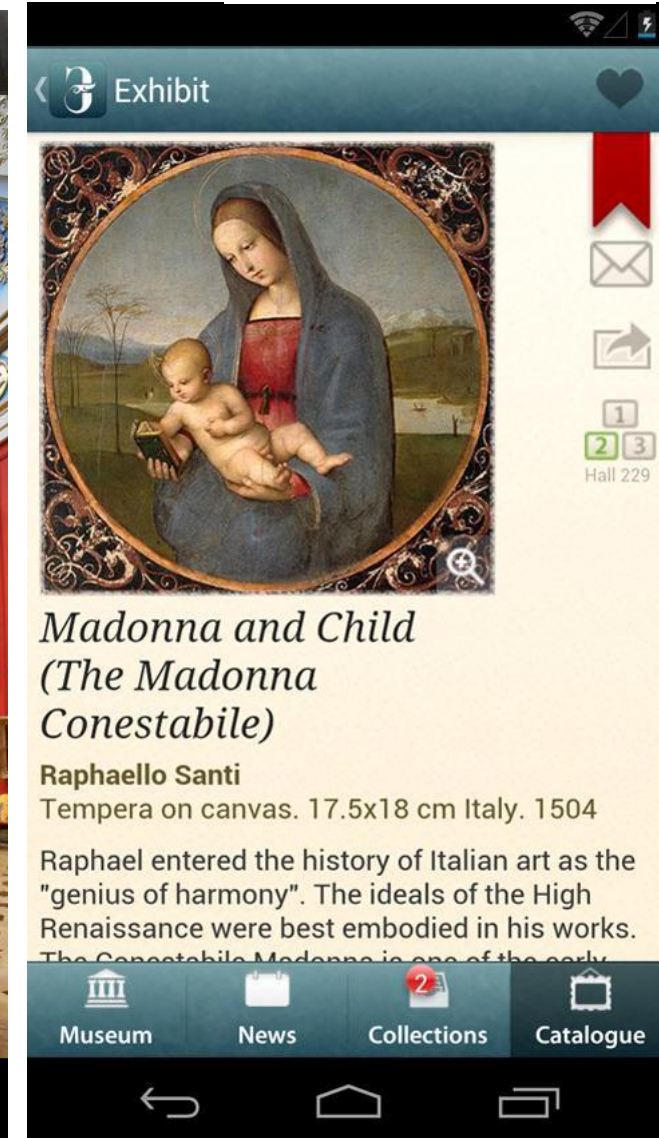
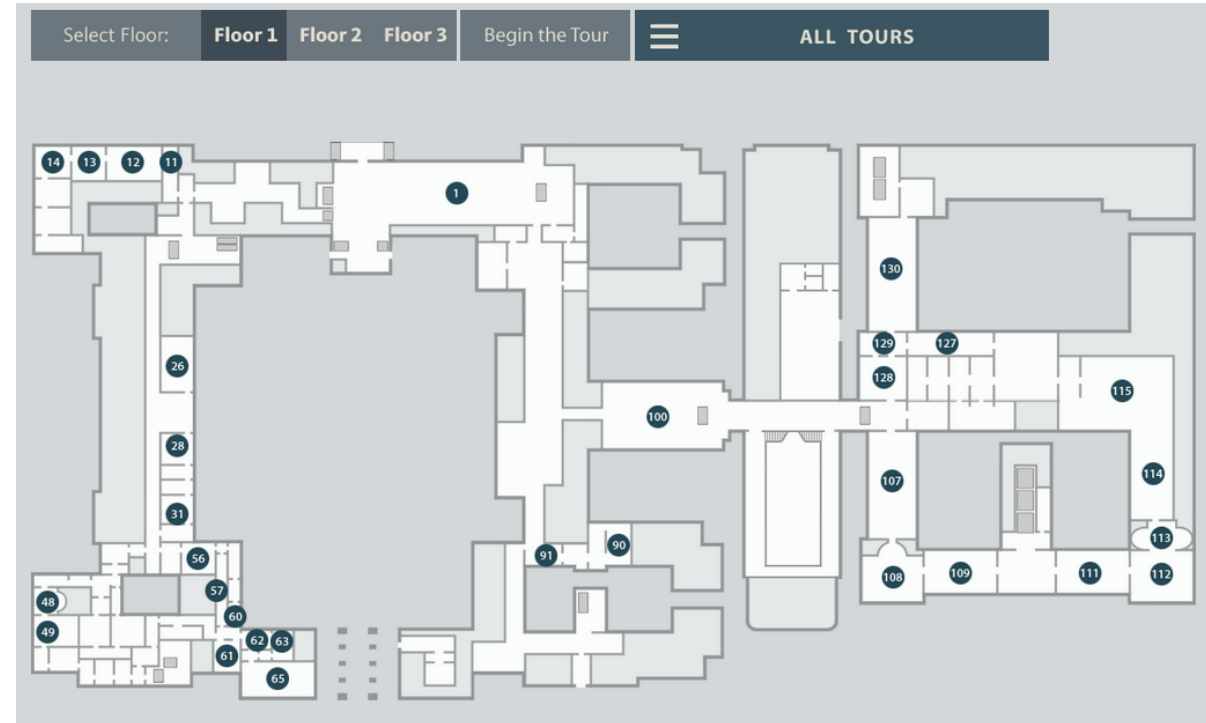
SEARCH



EU - BEST PRACTICE "HERMITAGE MUSEUM"

<https://www.hermitagemuseum.org>

Virtual Tours – Mobile Applications



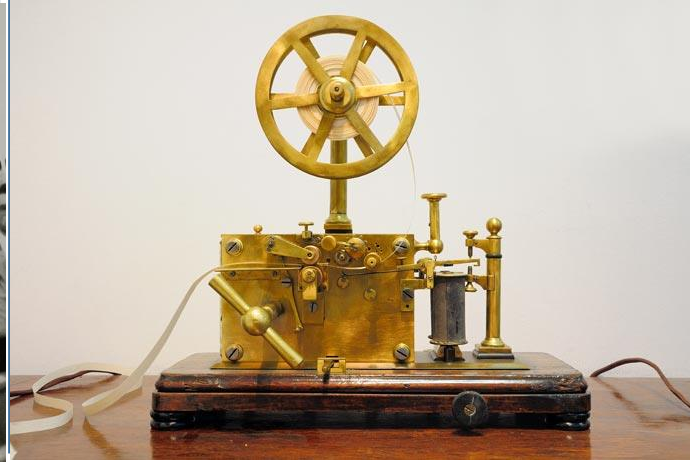
Digitization Telecommunications Museum

<http://collections.otegroupmuseum.gr/>

PHOTOGRAPHS



TELEGRAPHY



TELEGRAMS

ΤΗΛΕΓΡΑΦΗΜΑ

Εκ	Αριθμός	Λέξεις	Ώρα	Ώρα
ΑΘΗΝΩΝ	1/5463	23	13	

Ενδείξεις: ΒΟΥΛΕΥΤΙΚΟΝ
WILLIAM REES
ΕΚΟΡΙΚΟΥ 5
ΕΝΤΑΥΘΑ

Μεταδίδασθη
εις...
προς...
το μεταβιβάζω

ΕΛΛΗΦΘΗ
ΟΡΘΗ
ΠΑΤΡΩΝ

ΒΙΛΙΚΡΙΝΗ ΣΥΓΧΑΡΗΤΗΡΙΑ ΣΑΣ ΜΕ ΣΥΝΕΚΙΝΗΣΑΝ ΒΑΘΥΤΑ ΕΓΩΣ ΠΙΣΤΕΥΩ ΟΤΙ ΕΠΡΑΞΑ
ΚΑΤΑ ΣΥΝΒΙΒΑΙΝ ΤΟ ΚΑΘΗΚΟΝ ΜΟΥ ΑΠΕΡΑΝΤΙ ΤΗΣ ΔΕΙΝΗΣ ΧΕΙΜΑΖΟΜΕΝΗΣ ΠΑΤΡΙΔΟΣ
ΕΜΜ ΚΟΡΡΗΣ
ΥΠΟΥΡΓΟΣ ΠΡΟΒΑΡΕΙΑΣ ΕΥΘΕΡΗΣΕΩΣ

TELEPHONY



- OTE Group Telecommunications Museum preserves important collections of almost 25,000 exhibits and archives.
- Objects, telegrams, archival material and photographs from another time magnetize the visitor and become the source of inspiration and new experiences!



- **3,200 devices, objects and instruments** that are directly and indirectly related to the history of telecommunications and the evolution of their respective technologies in Greece
- **13,500 telephotos.** The collection dates back to 1949, the year of the telephoto service in Greece, until the end of the 1980s. It covers important moments from the political, cultural and social history
- **3.700 telegrams.** They cover the period 1860-1980 and the bulk was acquired through donations and purchases. Their content extends from the sphere of private and economic life to the political and military history of Greece
- **300 archive materials** such as advertisements, newspapers and magazines
- **2,300 calling cards**



Digitization Telecommunications Museum

<http://collections.otegroupmuseum.gr/>



Μπαταρία τηλεγραφίας
1850



Telegraph switch
1860



Telegraph key
1860



Χειριστήριο τηλεγραφίας
1860



Χειριστήριο τηλεγραφίας
1860



Converter
1880



EU - BEST PRACTICE “Galileo Museum”

<http://www.museogalileo.it/en/explore/virtualmuseum.html>

More at the session “How to digitize a Scientific Museum, The Galileo Museum” of Dr. Marco Berni and Jacopo Tonini



The Digital Exhibition for the Olympic Games and the educational programs

Dedicated to the **History of the Olympic Games** and organically incorporated into the Olympia Museum. The Digital Exhibition is a **innovative Greek Learning Workshop**, a facility that transforms the usual environment of an archaeological museum into a space where the old one is successfully combined with the new.

In order to achieve the high goals (information - education - entertainment) of the Digital Exhibition, a variety of digital content such as texts, pictures, drawings, maps, videos, 3D representations were produced with themes from the ancient sports and artistic competitions. This material is divided into fourteen systems that exploit a variety of technologies and as a whole make up the Digital Exhibition.

The core systems of the Digital Exhibition, that better meet the needs of both the educational community and the rest of the visitors includes:

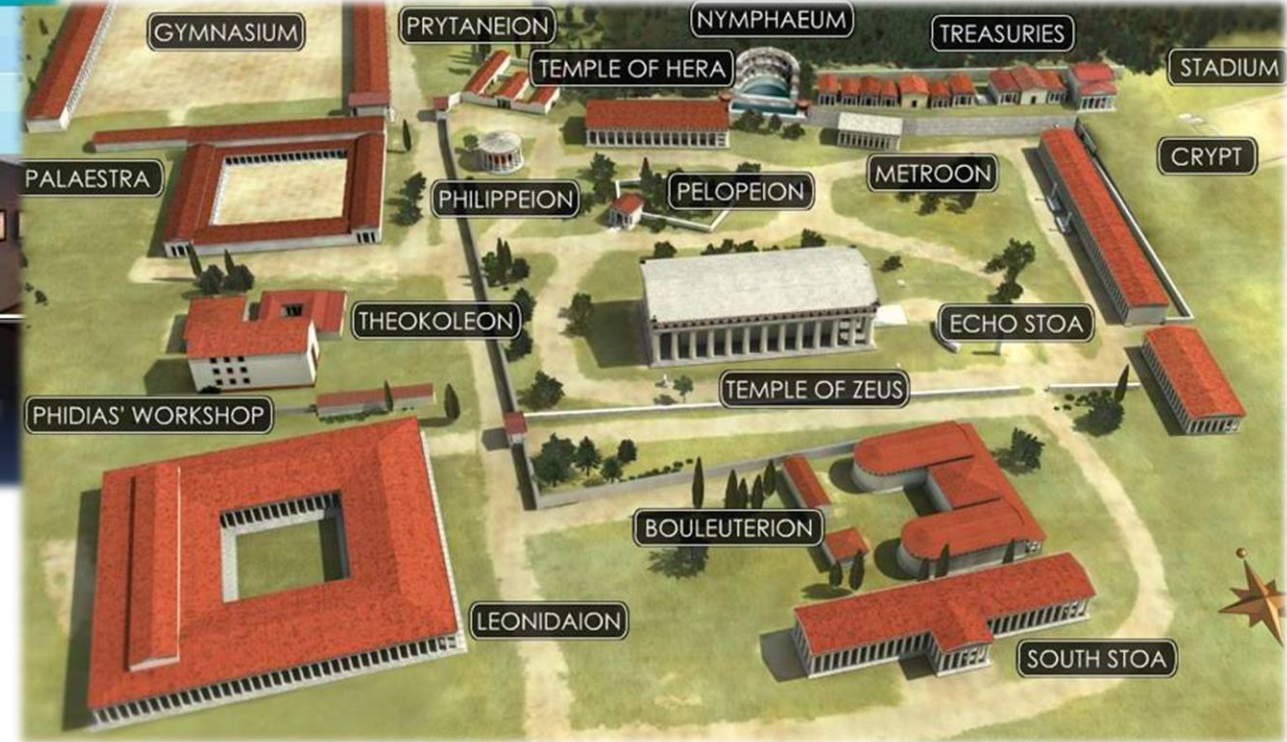
- Presentation of the **events of each of the five days** of the Olympic Games
- Interactive **Virtual Reality** Theater – Interactive **Guided Tour**
- Interactive **Timeline**
- Interactive **Display Tables**
- **Information** Points



The Digital Exhibition for the Olympic Games & the educational programs

ΜΟΥΣΕΙΟ ΙΣΤΟΡΙΑΣ ΤΩΝ ΑΡΧΑΙΩΝ ΟΛΥΜΠΙΑΚΩΝ ΑΓΩΝΩΝ

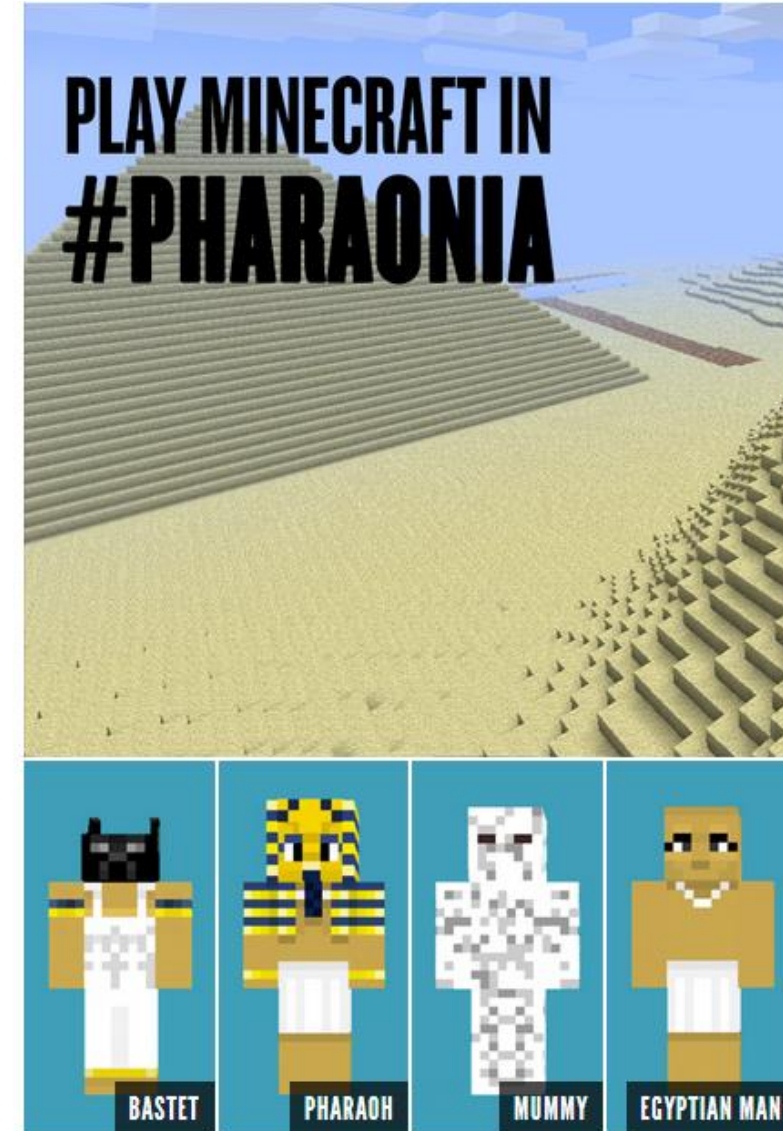
Αρχαία Ολυμπία



EU - BEST PRACTICE “MEDELHAVET MUSEUM”

<http://www.varldskulturmuseerna.se/en/medelhavsmuseet/>

Innovative **3D digitization project** allows visitors to get up close and personal with ancient Egyptian mummies. Features a digital reproduction of a mummy that was buried over 2300 years ago. Using an interactive touch table, visitors can ‘unwrap’ mummy layer by layer in order to discover complete, photorealistic images of the mummy, both inside and outside, and even hold golden **3D printed artifact replicas** in their own hands. Rather than risking the destruction of priceless historical artifacts, the 3D digitization method allows researchers and visitors to gain new insights about Egyptian culture, without causing any damage to the original.



...next steps regarding digitization projects in Greece



Call for Tenders 12/2016 for “Enrichment of Digital Collections of Mobile Monuments of the Ministry of Culture, Sports and Development and for the Development of the new MIS of the National Monument Archives

The main objectives of the Project are :

- The **enrichment** of the **National Monument Archives** through the documentation and digitization of around **500,000 mobile monuments** (approximately 340,000 exhibits of museums and 160,000 mobile monuments kept in the warehouses of the museums and not yet listed in the respective archives of museums) . For many of them there is no documentation or photographic material.
- the extension of the digitization network to the Ministry's Offices



Virtual Museum Alexander the Great «from Aiges to the World»

A new “holistic” and dynamic approach to the connection of archaeological site + museum + visitors

- Creating a virtual museum for **Alexander the Great**, where it will present his influence not only at his Kingdom, Aiges, but also globally, both in historical times and in modern times.
- The **virtual museum**, with its completion, will include **virtual rooms, digital photos, videos, texts and research documentation**, a **digital film library** with a collection of thematically related films and documentaries, a **digital library** with all the written sources, digital maps, and of course digitized exhibits



Indicative Proposals to RWG

1. Creating a **portable digital museum** using *Virtual Reality and / or Augmented Reality technologies*. Using innovative Immersion technologies so that the visitor will really feel that he is inside the museum
2. Digitization and promotion of special cultural evidence in museums or business premises (with cultural value) in our Region
 - **Olympic Torches** (Museum of Contemporary Olympic Games)
 - **Machines from Achaean Industry** – Industrial Heritage
 - **Augmented Reality Book** for the Archaeological Museums of Patras, Agrinion and Pyrgos (the main cities of RWG)



CD-ETA PROJECT

REGION of WESTERN GREECE

UNIVERSITY OF PATRAS

PAPADATOS PANOS

Scientific Association

Electrical Engineering & Computer Technology MSc, MBA

<https://gr.linkedin.com/in/panos-papadatos-6a37ab33>

ARVANITI ELENI

Researcher University of Patras

Business Administration , MBA

eleniarvanit@upatras.gr

