R 2 & 3: SYNTHESIS REPORT ON COMPETENCE NEEDS AND ALREADY EXISTING TRAININGS IN THE CULTURE SECTOR

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Author: EDUCATIONAL CONTENT, METHODOLOGY AND TECHNOLOGY LAB, HOU, GREECE

Sissie Theodosiou, Panagiota Polymeropoulou, Achilles Kameas

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INTRODUCTION

Our primary aim here is to identify the main needs and requirements of jobs in the field of eculture in the participating countries and to define the knowledge, skills and competences (learning outcomes) of the related existing trainings.

Presenting an up-to-date overview of all the separate desk national reports conducted in 5 European countries- Greece, Germany, France, Portugal, Slovenia, - the synthesis report at hand aims to faithfully draw together all countries' findings and conclude to suggestions in so far as the learning outcomes needed in the emerging e-cult job sector. The synthesis report is based on an extensive review process of all the partners' reports without though repeating in detail their separate national findings- the individual reports of all country-partners can be found as separate deliverables. Such process has been implemented to ensure that the messages contained in this final report are solidly and reflecting accurately a common European trend.

Our approach is guided by the aim of developing a transferable methodology that can be of a wider use by various interested stakeholders. The methodology suggested here is comprised by several easily identified and implemented steps that were presented separately in the 1.2.2 and is based on two major pillars.

A) Researching eculture job roles
B) researching relevant trainings

Such a twofold methodology has the ability to deal with the current knowledge, skills and competences as well as the future needs in the field of eculture jobs and weight the one against the other.

The structure of the report reflects the actual methodology employed during the desk research conducted by all partners (see activity : 1.2.2). It starts with the research hypothesis about a list of functional e-cult job roles composed by the experts' group of the partnership. This hypothesis was then verified and modified through a more systematic desk research that aimed to reveal the actual needs (see below).

In this light, after the presentation of the initial job list, the report proceeds with a brief overview of the national situation in the field of e-cult jobs, as it is revealed through relevant material on the web (research projects, reports, studies, products and services available at a national level). By the end of this section the reader will be able to trace the differences and commonalities between the participating countries, and realize both the current situation of this flourishing field and its future potential.

Whilst the first steps allow us to work towards what can be broadly defined as a research hypothesis, the final provides the necessary step for testing our research hypothesis in market terms; in so doing it constitutes the core of our research process.

Desk research analysed the current state based on secondary data; internal and activity reports, press coverage, job ads and descriptions, and any other relevant documents and reports in partner countries were analysed with the aim to reveal both the future trends in the field of e-culture related occupations and the current situation. At the same time desk research analysed the situation in the field of trainings related to e-culture in each of the participating countries.

Complementary to the desk research conducted by all partners a stakeholders' a workshop was organised along the project meeting in Lisbon, with the aim to gain a mere insight of the way the key players in the Portuguese museum scene perceive of the desk research findings. The results of this workshop are listed in Appenix 1.

THE INITIAL JOB ROLE LIST- RESEARCH HYPOTHESIS

Through our preparatory desk research and the discussion among the expert working group within the present partnership, a list of functional eCulture job roles and their related tasks/deliverables were drawn :

Cultural ICT specialist/ Ambassador

Digital Cultural Asset Manager

Cultural community manager

Interactive cultural experience developer

eCulture facilitator/ eGuide/ eMentor

A short working description of the five job roles, as provided by the expert working group of the partnership, can be found below[1]:

Cultural ICT Specialist	The Cultural ICT Specialist acts as facilitator between ICT solutions and content holders like museums. S/He works with the museum's/cultural institution's internal teams.

[1] It is worth noting at this point that in the meantime these roles have been improved, so these mission statement do not necessarily match the ones currently used.

	By perfectly understanding the identity of the museum/cultural institution, s/he provides advice on the development of an ICT strategy that will boost interaction with the visitors and offers guidelines, how this strategy can be implemented in the most effective and efficient manner. The Cultural ICT Specialist foresees the impact of technological solutions that will meet the needs of the internal teams s/he works with, notably the PR and marketing department and eventually, the curators for (permanent or temporary) exhibitions.
Digital Cultural Asset Manager	The Digital Cultural Asset Manager is an expert in cultural issues, responsible for the organization, preservation and promotion of the digital or digitized cultural content in a museum.
Cultural Community Manager	The Cultural on-line Community Manager is responsible for the creation and management of an engaging, attractive and accessible collaborative, cultural community for users, visitors and colleagues . S/he is aware of the internet users' and visitors' needs and provides guidelines, how the online communication strategy can be implemented in the most effective and efficient manner. Being part of the communication team, s/he is in charge of the social networks' management.
Interactive Cultural Experience Developer	An Interactive Cultural Experience Developer is responsible for development and design of the interactive and multimedia content, related with the museum exhibitions, through on-installations, installations and on-site installations and online channels.
eCulture Facilitator/ eGuide/ eMentor	**ICT cultural Facilitator :** ICT Cultural Facilitator acts as cultural manager in order to develop economic mechanisms for cultural institutions with use of ICT which can lead institutions towards innovative cultural sector – creative industries, market driven sector. **e-Culture Heritage Guide / e-Guide :** E-Guide acts as interpret of cultural heritage content with use of ICT. Basic for e-Guide professional is flawless knowledge of content which he/she interpret to the audience/visitors (cultural heritage & art) and high-level familiarity with technology (ICT) used as new / innovative way of presentation of art work, exhibition or any

	other phenomenological form of cultural heritage. Specificquality of e-Guide is in understanding the interactivity of ICT devices or solutions in favour to attract visitor in terms of transforming him/she from passive visitor to active participant using ICT in his/her investigative process. **ICT Mentor for Cultural Content (ICT MCC) :** ICT MCC is master of transferring of knowledge related to cultural heritage using ICT. His/her skills are based on following principals of cultural heritage interpretation: adequate, entertaining, diverse, heterogeneous, comprehensive and educational. ICT MCC provides high quality interpretation of natural and cultural heritage with use of ICT. ICT MCC is master of education in "cultural heritage content trough ICT" and "usefulness of ICT for cultural heritage content".

INITIAL JOB LIST - RELEVANT JOBS PER COUNTRY

The table that follows contains all the necessary modifications and additions that research in each country provided along with their keywords (when provided by partners). It thus serves as a springboard to demonstrate similarities and differences among the different countries.

Initial list	Greece	Slovenia	France	Germany	Portugal
Digital Culture Asset Manager	**Manager of Cultural Resources and Cultural Informatics** Keywords: management, information systems, cultural heritage	**Digital Culture Asset Manager**	**Not relevant**	**DAM=Digital Asset management** Keywords: better access to cultural heritage and the arts ; share digital assets more effectively within the users ; cataloging and file processing;	**Not relevant**

Cultural ICT specialist/ Ambassador	**Not relevant**	**Cultural ICT specialist/ Ambassador**	**ICT consultant**	**ICT Specialist" and "ambassador" separately** Keywords: Ambassador : influence in the cultural field ICT Specialist: designs, maintains, and services systems used to store, retrieve, and send data. Joining the terms: diffusion of cultural assets through ICT, Digitizing cultural heritage. Make cultural resources and scientific records easy to use for leisure, work or studies.	**Not relevant**
Interactive cultural experience developer	**Interactive Applications Programmer / Developer** Keyowords: human – computer interaction, art technologies, interactive multimedia applications	**Interactive cultural experience developer**	**Interactive cultural experience developer**	**Artist developer, art and media developer, interactive developer. Interactive Media Artist / Developer.** Key words: developer of webs, mobile and social applications.	**Interactive Applications Programmer / Developer**
Cultural community manager	**Not relevant**	**Cultural community manager**	**Community manager** Keywords: mobile apps, on-line communities	**Not relevant**	**Not relevant**
ICT Cultural Guide/Mentor	**Archaeologist – e-Guide** Keywords: thematic guidance, exhibition, archaeological information, utilization of the equipment	**ICT Cultural Guide/Mentor**	**Not found**	**Facilitator for eculture** Web-based systems, e-culture applications, cognitive/learning styles, Web technologies, Web science. (information about e-Guide and e-Mentor were not found)	**Archaeologist – e-Guide**
Other	**Cultural Informatics of Technology and Communication**	**eCulture Heritage Guide/Mentor**		**Media Artist** Keywords: Artist developer, art and media	

	Keywords: culture and ICT, applied Museology, new media in culture	keywords: cultural heritage interpretation, use of ICT, heritology, tour guide, education, entertainment, DIY concepts, workshop, interactive, multimedia, interdisciplinary,		developer, interactive developer. Interactive Media Artist / Developer	
				Cultural Heritage Officer Keywords: identification, assessment, conservation and interpretation of places and objects that have cultural heritage value.	

LEARNING OUTCOMES FOR EACH JOB ROLE

The table below depicts a summary presentation of all the necessary knowledge, skills and competences for each of the suggested job roles as provided by partners

Job Roles	**Technical knowledge, skills and competence**	**Culture related knowledge, skills and competence**	**Managerial and behavioural knowledge, skills and competence**
Digital Cultural Asset Manager	• be familiar with PHP, CSS, HTML, MSQL, JavaScript, basic Web network infrastructure, contemporary operating systems and browsers, metadata standards, web accessibility standards, kiosk – related technologies • be familiar with the standards of digitization • have knowledge of multimedia formats and principles of visual presentations, data base development & management and management systems	• Has a basic understanding of Cultural heritage and arts • demonstrate cultural democracy by supporting museum collections from various civilizations	• monitor and evaluate team processes • presentation and moderation skills • manage project portfolio and project resources • redact reports and evaluate the management plans • apply leadership skills in order to enhance team commitment and performance • Development and implementation of strategies • Team leading

	• apply best practices, national laws and international conventions in copyright issues • be familiar with international cultural organizations and councils such as ICOM, ICOMOS, UNESCO etc. • analytical thinking and ability to develop synthesis/ ability to analyse and solve problems • cataloging and file processing (imagines for exam) • Knowledge of file transformation; intellectually property rights;, Rendition/relation browsing; Advance search and collaboration		
Cultural ICT specialist/ Ambassador	• maintain awareness of new technologies and future applications • have experience with the latest web technologies (Technologies for this field include: computer vision, advanced graphics, simulation and visualization tools, 3D immersive environments, cognitive systems, multi sensorial interactions and semantic based content search). • outline methods and best practices used in copies, reproductions and digitization	• provide advice about the interpretation of places and objects of cultural heritage significance • recognize the vision and the purpose of the museum	• communication skills • record and evaluate accomplishments • show strong oral and written communication skills • demonstrate ability to work effectively with cross – functional teams of professionals • have presentation skills • investigate and follow sustainable development practices • monitor and instruct multi- discipline and multi – cultural teams and organizations • foresees the impact of actions and activities • foresees latest trends and evolution of the market • Innovative, creative •
Interactive cultural experience developer	• have experience with the latest web technologies, including HTML, CSS, PHP 5, HTML5, jQuery/JavaScript, a AngularJS, Twitter Bootstrap, SQL Azure;	• Visual arts, engineering, film, liberal arts, and humanities. • storytelling, technology, and a desire	▪ Collaborate with instructional designers, content authors, project editors, company stakeholders and other media professionals to design and develop

	familiarity with cross-browser design • know the use of Flash/ActionScript • understand the full software development life cycle, including version control • have knowledge of multimedia formats • have functional knowledge of 3D augmented reality, mobile applications etc. • understand the full software development life cycle, including version control • be familiar with code management systems, such as Git and CVS • Development • multimedia production, including audio, video, 2D and 3D imaging (models, textures, and animation), and interactive media from manuscript through completion, including production scheduling, storyboarding, development, and deployment;		educational resources • provide accurate estimates for assignment execution • identify opportunities for potential reuse of code within the company • define, document, and communicate system architectures • execute projects within timelines and budgets • appraise the artistic freedom of expression through local, national and comparative approaches • organize and manage multiple projects simultaneously while meeting deadlines • write requirements specifications, technical specifications and reports/ratio (clearly, precisely and detailed) • Creativity and imagination • Analytical thinking and ability to develop synthesis/ ability to analyse and solve problems • ability to collaborate and work in a team
eCultural community manager	• know the use of social media such as fb, flickr, twitter, pinterest, tumbir, reddit etc. • have functional knowledge of Web 2.0. • be familiar with RSS feeds and the available software for RSS reader • have functional knowledge of user components (usability, user interface, information architecture, web elements)	• be able to describe the history, the rationale and the current status of the museums, the profession and the collections in local, national and international context	• monitor and instruct multi- discipline and multi – cultural teams and organizations • manage project portfolio and project resources • Knowing to seek and classify information on Internet or elsewhere • show strong written and verbal communication skills

eCulture facilitator/ eGuide/ eMentor	**Facilitator for e-Culture :** Knowledge of :Web-based systems, e-culture applications, cognitive/learning styles, (semantic) Web technologies, Web science • have functional knowledge of 3D augmented reality, mobile applications • maintain awareness of new technologies and future applications	• be able to describe the history, the rationale and the current status of the museums, the profession and the collections in local, national and international context ▪ Applications for e-Culture	• develop a quality control in services • set measurements and targets for activities • Creativity and imagination • Analytical thinking and ability to develop synthesis/ ability to analyse and solve problems • presentation skills show oral communication skills
Other			

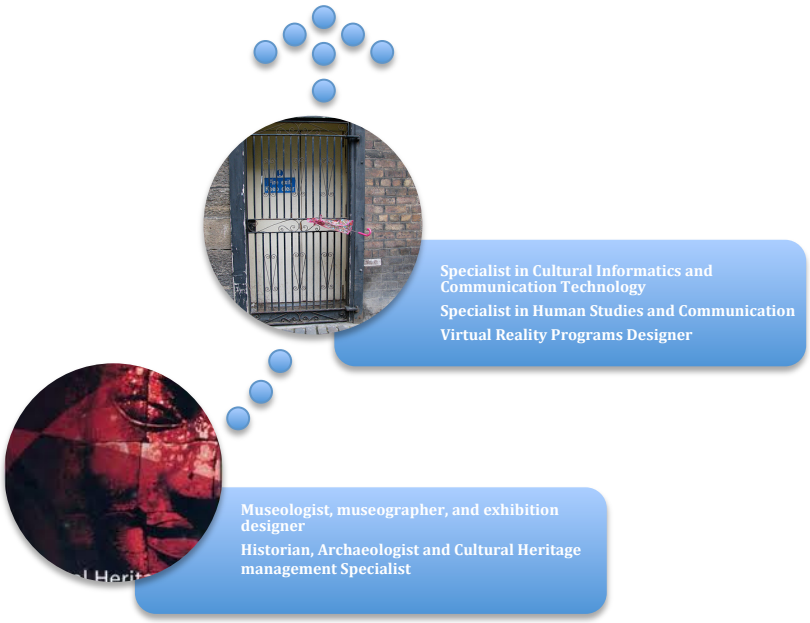
EXISTING TRAINING OFFERS

In the different boxes that follow the existing training offers per country as presented

Greece

- Cultural Technology and Communication (EQF 6)
- Museology, Museography and Exhibition Design (EQF 6)
- Cultural Heritage Management and New Technologies (EQF 6)
- Management of Cultural Heritage Documents and New Technologies (EQF 7)
- Informatics and Humanistic Studies (EQF 7)
- Cultural Informatics and Communication with specialisation in Museology and Digital Cultural Product Design (EQF 7)
- Technician of Informatics Applications (Multimedia - Web designer - Developer/Video Games) (VET)

Recognised occupations[2]



Germany

- Digital Media/ Cultural Informatics (EQF 5-6)
- Digital Media Culture (EQF 5-6)
- Art and Multimedia (EQF 5-6)
- Cultural Informatics as a Minor (EQF 5-6)
- Cultural Entrepreneurship and digital strategies for cultural institutions (One day Seminars -Pausanio Academy in Cologne)

[2] Here recognition is meant in relation to the Hellenic workforce organisation

France

- Animateur du patrimoine des Villes d'art et d'Histoire (EQF 5)
- Consultant en ingénierie culturelle (EQF 5)
- Médiation Culturelle, Patrimoine et numérique (EQF 7)
- Création et édition numériques (EQF 7)
- Technologies Numériques, valorisation produits Culturels (EQF 7)
- Création, innovation, information numériques (EQF 7)
- Cultures et métiers du web (EQF 7)
- Médiation culturelle, patrimoine et numérique (EQF 7)
- Politique des bibliothèques et de la Documentation (EQF 7)
- Cultures de l'Ecrit et de l'Image (EQF 7)
- 2 Médias, publics et cultures numériques (EQF 7)

Portugal

- **Culture and the Creative Economy (EQF 6)**
- **Digital Art and Multimedia (EQF 6)**
- **Art and Multimedia (EQF 6)**
- **Technology of Multimedia Communication (EQF 6)**
- **Plastic Art and Intermedia (EQF 6)**
- **Visual Art and Artistic Technologies (EQF 6)**
- **Artistic Promotion and Heritage (EQF 6)**
- **Management of the Creative Industries (EQF 7)**
- **Cultural Management (EQF 7)**
- **Communication and Cultural Management (EQF 7)**
- **Mobile App Design (EQF 7)**
- **Design and innovation of New Products (EQF 7)**
- **European Heritage, Multimedia and the Information society (EQF 7)**
- **Heritage studies (EQF 7)**

It is important to note at this point that besides the national research conducted by all partners in the European survey carried out by EMF across 12 VET institutions (located

in Greece, Poland, Switzerland, France, Portugal, Belgium) around Europe no vocational training on e-culture was found.[3]

MAIN TRENDS IN THE FIELD OF E-CULTURE OCCUPATIONS - JOB ROLES AND TRAININGS

OCCUPATIONS - JOB ROLES

Whilst the desk research was sufficient in order to reveal the current situation in the field of e-cult jobs, it also provided key information that allows us to decipher the main trends one can encounter in the job field under consideration

- Large majority of Museums and Cultural operators are public organizations or partially public funded organizations. Their employment strategies comply with public procurement and recruitment policies and in most cases there are public competitions (this can explain the apparent lack of any relevant job ads in Greece and Portugal due to the current economic crisis)
- In most organisations job functions strongly related to ICT are not taken by specialists but by the existing museum professionals (conservators, curators etc.) who have developed these technological skills out of their own interest (for example the Public Relations Manager usually plays also the role of the Digital Community Manager; or the museum guide is the one who takes up the responsibility of introducing the visitors to digital collections etc.)
- The need for certain specialitiations/trained professional in the various national settings reflect different national histories and policies regarding museums. For example from the job announcements examined, it is evident that the Greek museums seek archaeologists and/or archaeologists with a further specialisation in museums studies. This reality is very much linked to the fact that the majority of the museums in Greece are archaeological and the financial straits do not permit the employment of a populous scientific personnel.

[3] This part of the research was not exhaustive and did not intend to cover the entire EU geographical area of EU, nor to map the entire scene of training offers in the field of e-culture in HE and VET. The results of this research aimed to complement the research that will be carried out by the partners in their own countries.

- In the south of Europe, more generally, there is an emphasis on digital convergence through European projects, a strategy that has been tremendously affecting cultural organisations and more specifically museums (at least in relation to the digitization of their cultural assets)
- More often than not, the creation and development of a digital collection, data-basis, the development of interactive educational applications, the creation of a digital/ 3D exhibit etc, are outsourced to professionals or are jobs assigned to companies.
- Given the prevalence of the outsourcing method , it is noteworthy, that there are usually complains about the inability/lack of awareness of the ICT people to understand/of the peculiar nature of the museum exhibits

Most importantly, for the purposes of this project: the initially suggested e-cult job roles currently seem to appear rather as a combination of existing roles, such as: an archaeologist, a cultural informatics of technology and communication, a specialist in public relations, a manager of cultural resources, a cultural heritage specialist, an interactive developer and a 3D specialist. To put it differently, the ingredients are there, in diverse forms but what is actually missing is specific combinations of them.

TRAININGS

A mere look at the trainings offered around the partnership countries indicate an important tendency: there is a growing number of mainly postgraduate interdisciplinary courses focusing on what is broadly defined as cultural informatics. These courses provide, on one hand, a theoretical basis in the field of cultural heritage, museum studies, art history etc., and, on the other, the practical skills of new technologies and digital media. At the same time it is striking that there is still a very limited number of undergraduate courses in this field, and more importantly the trainings offered at VET level are extremely limited, if not completely absent in all the partner countries as well as in Poland, Switzerland and Belgium, where the European study was extended .

CONCLUSIONS

Although limited in scope the desk research conducted in the context of the e-cult project was rich enough to indicate on the one hand the need on behalf of the museums and relevant organisations to embody the use of ICT and its various forms today, and on the other their rather delayed response to the achievement of a functional merger between the museum sector and ICT realities and practices. Existing museum personnel cover such gaps through the development of their own personal interest and skills, and still the vast majority of relevant jobs are outsourced.

In this light and against this background the situation is ripe to provide more solid job profiles specialised on this field. And more importantly given the existence and variety of training offers mainly at undergraduate and postgraduate level, it is important to design short term trainings with a vocational character aiming mainly at the enhancing the working potential of the existing museum personnel as well as attracting individuals who are interested in the field

APPENDIX 1

eCult Skills Workshop
Lisbon, 4 April 2014

The second meeting of the eCult Skills Transfer of Innovation project took place in Lisbon, Portugal, on the 3rd-4th of April, 2014.
On the second day of the meeting a workshop was organized by the Portuguese partner, Mapa das Ideias. The project partners, together with several important members of the Portuguese cultural field were divided into groups in order to discuss the five identified job profiles.
During the two hour long discussion each group had to analyze their job roles and whether they exist in the institution/organization of the members. In case they could not identify such a position, it was analyzed who would handle these tasks and whether an institution/organization could profit from having such a professional in its internal team.
As the last stage of the workshop, all groups had to present their conclusion. The main findings are listed below:

Cultural ICT Specialist/Ambassador
This job role was defined by the group as a so called "generalist", because it was considered necessary for this person to possess knowledge about the separate fields of all the other eCulture job roles. This person should previously acquire a basic knowledge of museology; have a general picture about the main ICT tools available; and have a specific knowledge of ICT applied to digital asset management, to communication with the different target groups and to visitor experience enhancement.

Digital Cultural Asset Manager
According to the group discussion, this position can also be called a: "Digital curator". Through providing access, she/he has great responsibility in the organization, preservation and in the exploitation of cultural heritage assets.

Interactive Cultural Experience Developer
The group agreed that such a position is not common in Portugal. Cultural heritage institutions have very limited staff and usually these experts (curators, archeologists…) do not possess any special knowledge in the field of ICT. As a result, these tasks are generally outsourced to an external company.
However during the meetings with the ICT experts of an external company, cultural heritage institutions often face the problem of misunderstanding. ICT experts do not

necessarily have the knowledge and the sensibility of the characteristics of a cultural field.
If this position existed, an ideal Interactive Cultural Experience Developer should have a generic knowledge of museology (understand the role of museums and the message to be transmitted, how to approach and communicate with the public…), should be aware of the ICT solutions available on the market and should have a generic knowledge of mediation and pedagogy.

Cultural Community Manager
According to the group discussion, this position doesn't really exist in the Portuguese reality. The tasks distributed for this position are very much the same as a PR or Communication Manager would do however within the Cultural field there is not a real strategy behind these activities. The staff often lacks Web 2.0 skills. Cultural heritage institutions very often create and manage their Facebook profile, however they lack the skill on how to create a real community with these means, they only use the social media to communicate their monthly program. It could be also an important tool to prepare and attract audience and also to get feedback from the customers, because it can help the improvement of services. There should be interfaces between various sections of the museum (content quality).
What this position requires is a generic knowledge of the strategy of the organization.

ICT Cultural Guide/Mentor
Concerning this position, the main finding of the working group was that this person has to know the strategy of the organization. This is the person that has the most significant contact with the visitors, therefore it is highly important that this person gives a good image of the institution. The ICT Cultural Guide/Mentor also represents visitor's need and understands the wishes of the management.
The job itself can be repetitive and on the long-run it can be difficult to keep up the motivation of the staff, therefore recognition of their skills and knowledge and commitment towards the institution is highly important. These people should be aware of the importance of their role.

List of participants:

Job role discussed	Name	Organization
Interactive Cultural Experience Developer	Carla Ventura	National Archaeology Museum
	Bruno Neves	Navy Museum
	François Adone	OEM
	Dejan Pestotnik	Kibla
	Aspasia Theodosiou (Sissie)	HOU
	Flóra Berei-Nagy	Mapa das Ideias
Cultural ICT Specialist + Digital Cultural Asset Manager	Nuno de Oliveira Alves	Exciting Space
	Joaquim Jorge	City Council of Loures
	Philippe Wacker	EMF
	Ligia Whyte	Euproma
	Sigrid Terwolbeck	OEM
	Helena Esteves	Mapa das Ideias
Cultural Community Manager	Alexandre Matos	F Letras Univer Porto
	Achilles Kameas	HOU
	Adriana Baer	Euproma
	Natália Calvo	City Council of Loures
	Joana Olivença	M Comunicações
	Maria João Nunes	Mapa das Ideias
ICT Cultural Guide	Isabel Borges	Planetarium
	Rui Almeida	Bens Culturais Igreja
	Margaretha Mazura	EMF
	Inês Fialho Brandão	Freelancer/Researcher
	Clara Vaz Pinto	National Museum of Costumes and Fashion
	Inês Câmara	Mapa das Ideias