Summary Report of Interviews with CH stakeholders and technology providers

Introduction

The main aim of the eCultValue project is to encourage the use of new technologies that have the potential to revolutionise the way we are dealing with and accessing Cultural Heritage (CH) in Europe. For doing this, it is important to capture the points of view and the needs of the stakeholders working in Cultural Heritage institutions, in relation to the use of ICT. In the context of the "Interview Summary Report", the eCultValue partners have, therefore, performed a number of interviews with CH stakeholders and technology providers from several European countries. Some of the main outcomes of this activity are presented below.

Background information and Quantitative Analysis

Profiles of interviewees and main sectors covered

The consortium partners interviewed both, stakeholders with purely CH background that have a high level awareness of ICT solutions (Figure 1), and technology providers with either deep knowledge of the scene or CH background. The interviews had been conducted from April 2013 until early July 2013.
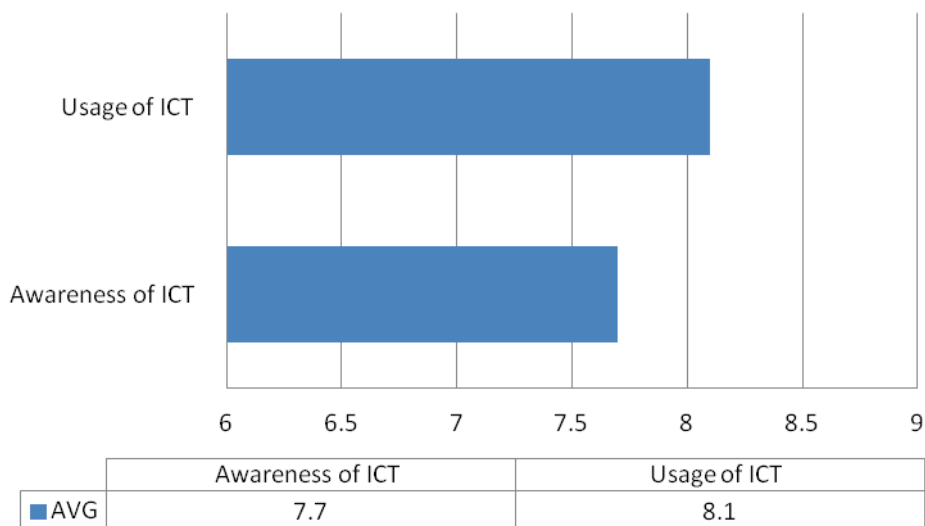
	Awareness of ICT	Usage of ICT
■ AVG	7.7	8.1

Figure 1-Stakeholders knowledge of ICT

Figure 2 shows that the 65% of the respondents refers to CH stakeholders and the 35% to technology providers.
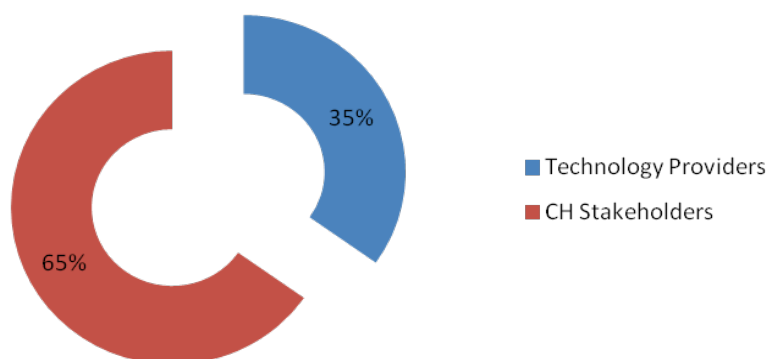

Figure 2-Interviewees Expertise

Interviewees work both for the public sector and the private, covering a wide range of institutions and fields such as museums, national museums, galleries, performing arts, monuments, libraries, etc. They hold various positions in their organisation: directors, curators, archaeologists, professors, researchers, while some of them belong to the top management of the institution or they are members of a research / project team. Regarding technology providers, some of them are in house staff, belonging to the IT department of their organization (this holds for technology oriented institutions), or are freelance providers, collaborating with CH institutions for a restricted period of time and in the frame of a concrete project. Many of them are affiliated to a university or research institution and / or are participating in related research projects (Figure 3).
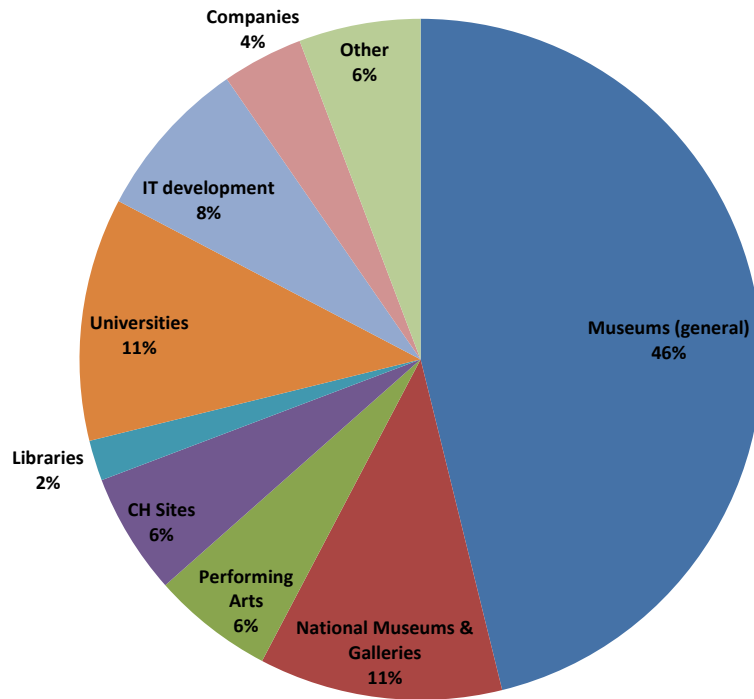
Figure 3-Interviewees's Main Sectors

Qualitative Analysis / Findings

Information and Communication Technologies in use and for what purpose

Information and Communications Technology (ICT) solutions provide cultural heritage (CH) organizations with a very powerful set of tools, both for the day-to-day work of managing a collection and for reaching out to visitors, sometimes in new and interesting ways. As an outcome from the questionnaires, ICT solutions in use in CH organizations could be divided into three parts, depending on the purposes they serve and the factors that lead to their adoption:

Archiving and preservation

A high percentage of the representative CH organizations have developed internal collection management systems designed for the needs of back-office staff for editing data records about objects and for supporting all processes within the organization. Especially for museums, this automated system keeps track of all artifacts, their location in the building, their state and history and it also includes descriptions and photographic documentation of each object. In this context, there is a widespread implementation and use of digital repositories where digital content and assets are stored and can be searched and retrieved for later use.

In addition, the vast majority of both, CH stakeholders and IT providers, raised the significant purpose of improving the open access to the content for users, and the necessary adoption of international standards in order to support the interoperability and the collaboration between CH institutions.

Communication tools

CH stakeholders reported as basic purposes of adopting ICT solutions in their organization the need for disseminating the value of the collections, sharing information with the audience and improving services for them (translation into many languages, virtual exhibitions etc.).

Therefore, the 80% of the organization surveyed have created an official website, which, in case of museums, contains news about past, current and upcoming events, exhibitions, locations, general information, online magazines, videos and, in few examples, online shops. Nearly half of these portals include digital exhibitions, virtual reproductions of the exhibits together with the most relevant data and virtual tours.

A common approach for a large number of these organizations is the creation and use of a profile on social media sites, especially on Facebook and Twitter, to post news, promote

their exhibitions & events, disseminate their content, and also interact with visitors by starting conversations, debates and organize participatory projects. Almost all the interviewees argued that their organizations are embracing social networking and use it as a means to communicate and promote their activities, and also to interact and engage with the visitors.

Furthermore, a small minority of cases have adopted other solutions, such as blogs, newsletters, pages on Scrib to share documents, youtube channels etc.

Enhancing visitors' experience

Nowadays, organizations face a crisis of attendance, because visitors have more competitive choices for their leisure activities than before and also expect to have educational entertainment experiences, the so-called "edutainment". Both CH stakeholders and IT providers argued that audience development is a crucial factor for cultural heritage organizations, which are now more engaged in innovative activities in order to operate in a more sustainable, attractive and interactive way, and to reach out to new audiences, with special targeting in youth.

In this context, many memory institutions have decided to adopt interactive systems which produce visual and emotional variety in the visitors' experience, with the purpose to create a balance between seeing and doing. The respondents CH stakeholders indicated some of the most frequently encountered technologies, such as virtual environments (virtual reality systems·virtual guide applications, virtual exhibitions, virtual panoramas, 3D reconstructions), workstations (e.g., personal computer stations with games), serious games, multi-touch screens, information kiosks, QR codes, RFID systems, motion sensitive systems for sounds, augmented reality (AR) systems, podcasts, etc.

In addition, the newest revolution seems to be in mobile devices, smart phones and tablets, which, with the use of advanced applications, tend to replace more traditional tools (like hand-held devices with audio or vision guided tours) and serve as interactive guides through the exhibitions. CH stakeholders believe that applications do not only provide information, but they can also stretch and extend the visitors' sense of involvement and give them the opportunity to learn while having an entertaining experience. In some of the examples, location based services have been taken into account. New generation smart phones support the GPS functionality and, as a result, location awareness could be obtained, allowing visitor to get any information for the exhibits near to him.

Trying to go a step further, some museums introduce a digital storytelling approach, which requires that the traditional set of exhibit-oriented descriptions is replaced by cohesive story-centered narratives with references to the exhibits. With the widespread adoption of interactive digital exhibits and mobile technologies, storytelling in a museum is taking new

forms, including such mechanisms as branching narratives, personalization, and adaptivity to visitor behavior and actions. As a result, exhibits and collections become more accessible and engaging for different kinds of audiences.
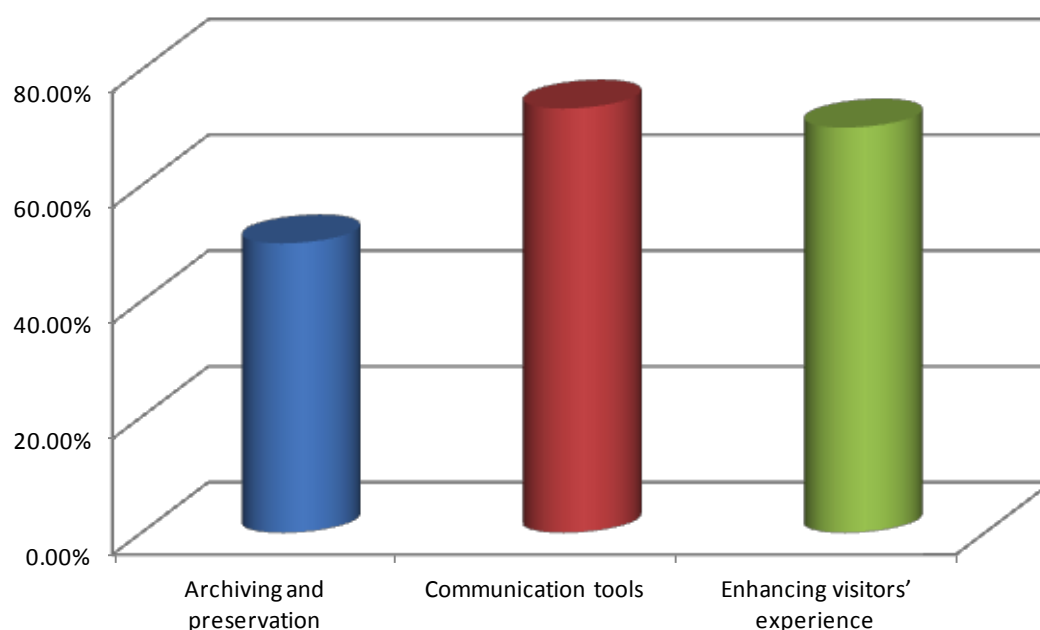

Figure 4-ICT solutions in use

Funding of ICT

The vast majority of interviewees stated that getting the funding for the ICT implementation is one of the biggest impediments for its wide adoption. The main channels they have indicated are the following:

National and / or regional funding

National governments still have a number of instruments they can use to initiate and fund activities related to their national Cultural Heritage. Grants are usually distributed either directly through the Ministries for Culture and / or Science or indirectly through affiliated organizations such as the Arts Council, the national Academy and the Research Council of each country. It is worth mentioning that several National Lotteries also support CH institutions in a direct or indirect way (this is the case for example for UK, Belgium, Greece).

European funds

Participation in related EU funded projects is another option for Cultural Heritage Institutions to receive grants. The benefits of this participation are, however, not only economical: CH institutions are also getting in touch with research organizations,

universities and private companies that are producers of ICT solutions. This exchange allows CH institutions to learn about innovative ICT solutions and their implementation.

Own funds

Because of the fact that national funds intended for ICT are sadly rare, own funds are becoming an important source for CH institutions to support the implementation of ICT. This holds especially for privately owned institutions. Own funds usually come from the entrance fees to the exhibition and from the organization of special events.

Sponsorships

Companies very often offer financial support to CH institutions to implement ICT. The sponsorship is part of their social responsibility program which means that the companies are not necessarily from the CH or ICT domain. It is usually linked to a concrete action or promotion and it is in force for a defined period of time.

Pro bono and voluntary works

Another option, of which companies make use, is to offer pro bono services to CH institutions. In this case the companies are acting as ICT consultants to the museums and support the implementation of a particular technology.

Finally, many CH institutions rely on the voluntary work offered by individuals and associations (e.g. in the form of "Friends of the XY museum").

Decision makers involved

Most of the interviewees have made clear in their replies that the adoption of a formal procedure is of outmost importance for the correct implementation of ICT. Not in all cases, however, a structured process is taking place. The size and the nature of the CH institution "prescribe" the number and the profile of the decision makers involved as well as their hierarchical position. In general, the smaller the institution is, the more is this decision a result of an open discussion among all people working in it.

For the introduction of ICT in CH institutions usually the following ways are followed, according to the interviewees:

Top-down decision

This seems to be the most common method. In the top-down approach the president, the director or the governing body of the organization takes the decision. Some institutions have formalized this procedure, while others adopt a less formal approach. Institutions

under public law have also to respect the requirements and input coming from governmental or regional authorities. In several cases the interviewees have stated that the top management of the organization has been also supported by external consultants.

IT department driven

IT departments within the CH institutions are of course more keen / interested in promoting ICT solutions. Unfortunately, only a fraction of the CH institutions have a dedicated IT department, according to our interviewees. Separate IT departments can be found in technology oriented CH institutions and in some cases in large institutions with clear defined job descriptions and roles. Even in this case the IT department makes the proposal and initiates the process but the final assessment is made again by the management of the institution as this decision can affect the character of the museum or collection and is directly linked with the funding of its activities.

Project oriented

This approach is usually adopted to implement a concrete technology or strategy. A project team with a project leader is set up, consisting mostly of curators and people from the Public Relations department. Very often this is a result of collaboration between the CH institution and an external organization, e.g. in the frame of an EU or nationally funded project. For this reason the project team exists for a concrete period of time and its operation is terminated after the project has closed. Of course this procedure raises a lot of sustainability issues. Interviewees have replied that the institutions decided to continue using the technologies that have been developed in the project, provided that necessary funds are available. This decision is taken by the director or general manager of the institution.

Introduction and implementation of ICT

Almost 40% of the interviewees have responded that their institution didn't follow a structured process while implementing ICT (Figure 5). Especially stakeholders from smaller institutions said that they have an "apply and learn" approach. The technology providers gave more or less the same picture: they suggest a structured approach for introducing ICT, but many CH institutions find it very difficult to implement and stick to it.
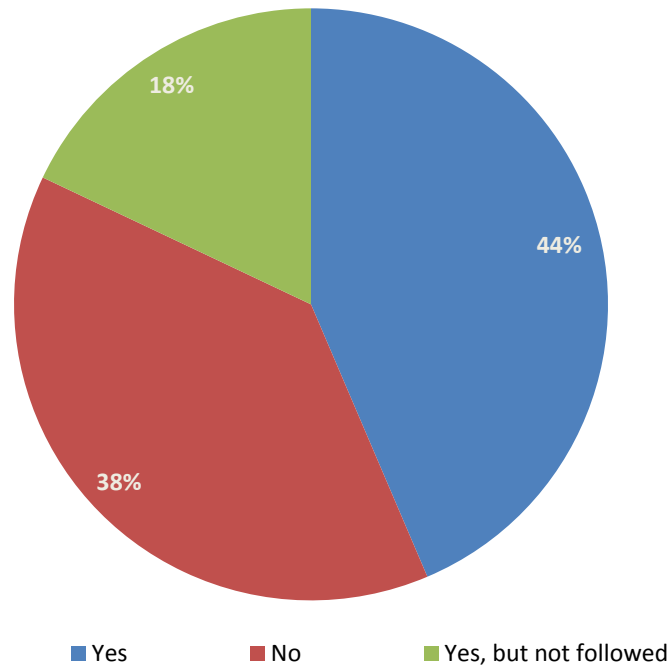
Figure 5 – Adoption of a structured process for implementation

Moreover, a good portion of the interviewees (13%) admitted that although a structured process in theory exists, when it comes to implementation stakeholders in charge act intuitive and solutions are provided on the spot, as problems and ideas occur. Finally, 47% of them stated that their organisation (or the organisations they have supported, when it comes to the technology providers) have a clear and structured process for implementing ICT. The steps that have been described are more or less the same in all cases:

1. Identifying the user/visitors' needs

2. Listing the options and requirements for implementation

3. Assessing the available options against concrete criteria (socially, economically, environmentally) and choosing the suitable ones

4. Drafting the strategy for the implementation of the solution

5. Implementing the strategy taking into account the various actors involved (ICT developers, policy makers, visitors, etc.)

Issues, Challenges, Obstacles

The majority of interviewees, both technology providers and CH stakeholders consider the **financial issue** as one of the main obstacles for adopting ICT tools. The financial issue has, however, two aspects: the first one is connected with the lack of funding for this purpose, and the second one is related to the risk of investing too high cost ICT solutions with no return. Some interviewees also pointed out the connection between financing scheme and

policies of funding, is such cases the possibility of taking resources was high, however, the non-flexible funding scheme, bureaucracy, and the slow procedure of receiving these resources made the whole plan of adopting ICT inefficient. Last but not least, low funding as an issue, is not only related to lack of money but also to lack of resources in general including human resources, time and know-how.

Time management and time cost is another issue. Some stakeholders considered the process of implementing, and managing the installation and usage of these tools, as extra load on institutions with already heavy schedules and pressure on employees. One of their concerns was how the ICT implementation will be held without interrupting permanent activities.

Another significant issue is the **maintenance** and upkeep of the ICT tools and solutions, after the development and implementation, and the lack of long time technical support. A main concern from the stakeholders' side is how to use tools or closed applications that would not become obsolete in short time, a fact that is reflected in the rating of risks and obstacles table and also mentioned in their spontaneous answers.

The risk mentioned as "**Needs replacement soon**", along with the "**Incompatible technologies**" risk, which is highly associated, were the two top risks for CH Stakeholders according to their rating and their answers. Stakeholders as well as technology providers who mentioned the issue of maintenance and upkeep also expressed their concern about the fact that most of CH organisations, do not have an ICT department or ICT experts to support the tools after the implementation and during the phases of maintenance, and update. It is worth mentioning that both ICT providers and CH stakeholders, considered the high cost of maintenance as the top obstacle and risk, as shown in Figure 6.

Legal issues and issues related to copy-rights and the complexity of making the content public were also presented as major obstacles or risks from both stakeholders and providers interviewees. Some stakeholders, in particular, expressed the concern that making their content public through the web, in digital archives, virtual exhibitions, etc. will make their content vulnerable to third party abuse, and commercial exploitation out of their control. **Privacy** and **security** is an issue when the applications include content that is related to personal data (e.g. photos, or other information), in cases where the audience contribute with material, or the creators of artefacts are still in life and active.

The technology providers' rather than the cultural stakeholders themselves mentioned **cultural issues, technophobia and conservatism from CH representatives as an obstacle**. This fact is also reflected in the rating of risks-obstacles as shown in Figure 6.

Nevertheless both groups agree that is not as big of an issue as it used to be in the past especially for young curators, librarians, and museologists, which gladly welcome the

adoption of ICT. Conservatism and distrust towards ICT is mostly a characteristic of older people or those who do not know much about ICT and what they can offer.

A significant percentage of stakeholders, considered the risk of **bad usage of technology,** or adopting technology for technology's sake, ending up with a **"noisy"** or **"too busy"** exhibition, full of hi-tech tools that do not meet the institutions profile, or the visitors actual needs. In their opinion this type of using new technologies isn't contributing to conveying the message to users, either because they do not serve the diverse needs of different groups, or because of meaningless representation of the content. The Stakeholders were sceptical on how the ICT solutions will cover the needs of visitors and employees who are not familiar with new technologies. It is worth mentioning that many providers, mainly with deep knowledge of CH, also shared the same concern about using technology in an effective and meaningful way. Using **ICT without specific requirements**, **clear objectives** and deep knowledge about the content and users is not only preventing Stakeholders from ICT, but also makes Providers work difficult and slow, they claimed.
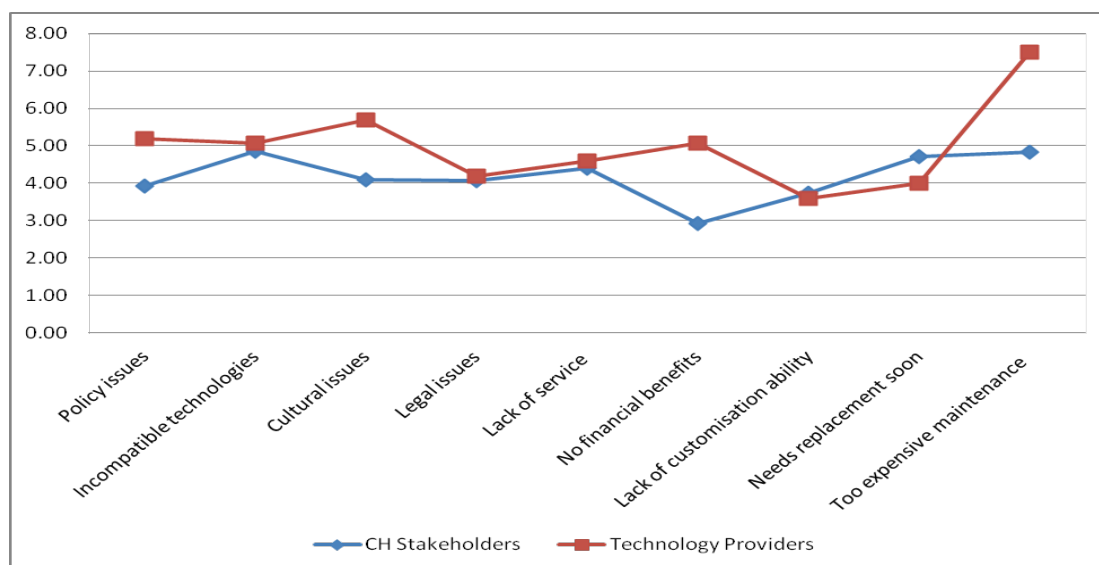

Figure 6-Obstacles as rated by CH Stakeholders & ICT Providers

In addition, some interviewees, both stakeholders and providers mentioned some **site specific problems** such as the fact that the ICT tools will make the visitors "stuck" on a place, or the difficulty to oblige people get involved and interact in each step.

Communication between technology providers and the CH experts is a big challenge, as they usually do not share the same objectives and have their own different perspective.

Another issue, mentioned mainly by the CH stakeholders, is their concern or even fear that the adoption of new technologies will **question museums' credibility and validity**, as curation will not be moderated. Having mainly in mind tools such as virtual environments and story-telling, they see a contradiction between the academic insight, the accuracy of

scientific description, the factographic curation and the innovative presentations that are subject to inaccuracies and mistakes. In going public, they mentioned their fear of giving access to uncertainties, receiving bad critics and "damaging their public image".

Finally the interviewees were asked whether the benefits of adopting ICT outweighs the risks and obstacles. The majority of both, CH stakeholders and technology providers, were quite positive and their response was spontaneous: "Definitely yes!", was a typical answer. Many stakeholders realize that using ICT is a "matter of survival", "a necessity", so almost all they claim that it is a challenging process and risks exist, the benefits of using ICT are out of question. Providers, on the other hand, having a more deep knowledge on the variety of ICT that exist and also taking into account that some providers have worked for several projects for a diversity of institutions were more analytical in answering this question.
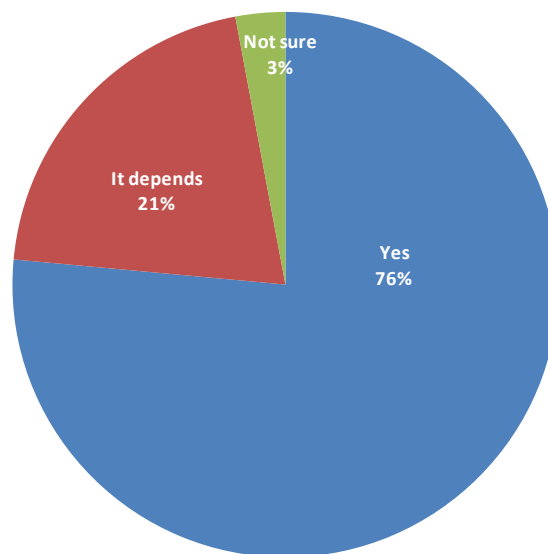

Figure 7-Did the benefits of using ICT overcome obstacles & risks?

Some explained that the beneficial role of ICT in comparison with the risks and obstacles is not always to be taken for granted. The successful and beneficial adoption of ICT depends on many factors, such as the type of the museum, the context, the tools to be used, and the message one wants to transmit through the new media. When the ICT solutions are tailored to cover actual needs of an institution, the results are much better. Some of their answers indicated that it depends on the type of institution, the type of museum, the message the institution conveys to the visitors, the context and of course the solutions of ICT adopted and if they were tailored to cover the actual needs.

Benefits

Communication with the audience

CH stakeholders reported that ICT adoption helped them foster a connection with regular or potential visitors, and, therefore, create a concrete communication channel with them. This fact provided institutions with the primary advantage to get effective feedback from the visitors and to focus on issues that are important to them. On the other hand, IT providers added to the aforementioned that new technologies promote a dialogue, build a real community and support a new way of interpretation. Interestingly, all interviewees were extremely positive about the value of social media and the benefits that digital technology grants in facilitating conversations between the audiences. Characteristically, some stakeholders said that ICT gives voice to the visitors.

Accessibility, Publicity & Web Presence

One of the greatest benefits that both stakeholders and ICT providers realized is that the usage of ICT allowed more users to access the institutions' content, beyond geographical boarders, users' disabilities, and physical limitations. Many stakeholders mentioned online visibility, web presence, and public image, as one of the most important benefits of using ICT. Use of webpages, social media, online exhibitions, public repositories etc. raised awareness not only about specific CH sites, collections and museums but also about the city, the country and the specific CH area. ICT contributed in promoting and disseminating the institutions and build a public profile that was modern, dynamic, trustful, and in some cases fun. Interviewees argue that the adoption of new technologies in cultural sector facilitates and supports the development of research, because improves the open access to the content for users from all over the world and, therefore, promotes the democratization of knowledge. It is worth mentioning that a high percentage of the respondents IT providers have developed ICT solutions in CH organizations in the context of research and development efforts.

Attracting the audience / Profit

Both, stakeholders and providers, agreed on the fact that the use of ICT increases the recognisability of CH institutions and attracts visitors, especially the younger audiences. As a result, some of the CH stakeholders have noticed a valued increase of tickets and online sales after ICT implementation. Technology entered CH organizations in the "era" of databases, expert systems and intranets, facilitating the follow-up of collections and all the information related to these. In addition, many of the IT providers underlined the economic benefits they had from participating in funding programs. Some providers mentioned the potential use of ICT in boosting tourism and local business.

Documentation, archiving and preservation

Cultural content conservation has become an increasingly urgent issue for museums,

libraries and archives. While manufacturing methods introduced over the past have allowed the mass production of affordable, standardized papers, ICT tools provide useful solutions for documentation, archiving and preservation. In this context, organizations adopt international standards in digitization to reinforce interoperability in the cultural heritage sector. The respondents claimed that this procedure improves the access to collection – especially to users who cannot have physical access-, and enrich the dissemination of knowledge. Thus, a repository supports mechanisms to import, export, identify, store and retrieve digital content, enables staff and CH organizations to manage and preserve it, and therefore derive maximum value from it.

Providing better services to staff and users

Several interviewees have reported the contribution of ICT in providing better services to institutions staff, users and visitors. Applications for digital cataloguing of collections, institutions' management systems and tools for automating every-day-work processes are some of the examples where ICT supported the "economy" of time and resources and decreased pressure on employees. Because of the online booking systems, users have no longer to wait in long queues. Furthermore, ICT tools provide the ability to preserve bigger amounts of information in little space and, most importantly, in different formats (text, image and sound). Through online and onsite applications, information about the content is easily translated to many languages, can be interlinked and contextualised.

Enhancing visitors' experience: Edutainment & Visitors Satisfaction

In direct relation to the above, the adoption of ICT creates big opportunities for museums to develop more engaging visitor experiences, according to ICT providers. They emphasized on the fact that the static traditional way of exhibits presentation has significantly transformed by adding creativity elements and ideas that encourage **interactivity** and improve visitors' participation and engagement. ICT solutions fulfill these requirements by enhancing the creation of an immersive and enjoyable environment as they necessarily entail interaction and dialogue between the machine and the user. Besides, technologies could support and enrich the object and, as a result, supplement and revitalize the exhibition. New technologies contribute to edutainment, as they create an immersive environment, in which visitors see, hear or do the things to be learnt. The active, self-controlled and collaborative exploration of digital contents indirectly benefits learning, especially in the case of complex, abstract or non-visible phenomena. Many stakeholders mentioned visitors' satisfaction from these exhibitions, emotional response and willingness to come back. These results were very intense in the case of exhibitions and applications addressed to children.
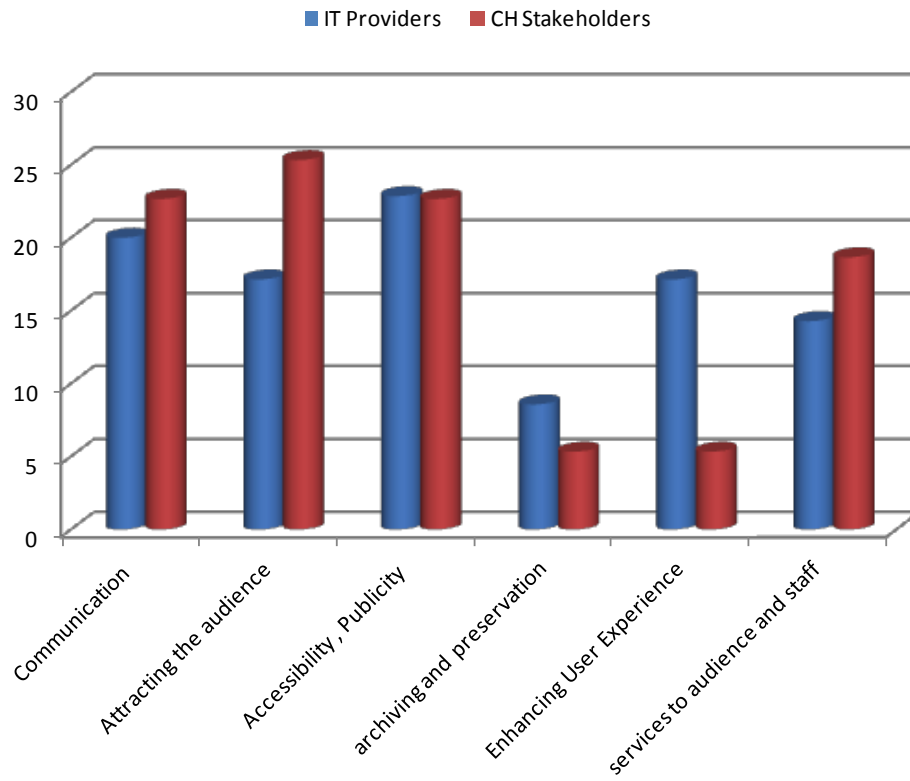
Figure 8- Most important benefits according to interviewees

eCultValue D1.1 Interview Summary

1   Common Patterns identified and Conclusions

Knowledge about and acceptance of technologies

Taking into account the answers to the question concerning the knowledge about ICT solutions and their potential usage it is of no question that awareness of ICT for Cultural Heritage, is above average. The vast majority of stakeholders said that although the process of adopting ICT was challenging and in some cases risky, it is definitely worth it and resulted in a number of important benefits for their institutions. Even stakeholders who do not actively use ICT of any kind said that they are welcoming the idea, and are willing to overcome the impediments if they had the required support and resources.

The above is in accordance with the answers received by the technology providers. They confirmed that in most cases, when introducing ICT in CH institutions, the stakeholders are aware of solutions available and open to their adoption. Nevertheless, they often can't match available technologies to their particular needs.

Issues identified

It is worth mentioning that there was a diverse perspective on what CH stakeholders have in mind when it comes to ICT. Taking into account both the type of ICT adopted by the majority of Stakeholders, the purpose of their use, as well as the benefits gained, it is easy to come to the conclusion that the trend is to use mainly tools and solutions to support their web presence, publicity, and the creation of communication channels with users through webpages, blogs, and social media (Figure 8). These are solutions that are usually easy to customize and use, they have low or zero cost and are familiar to users and staff especially younger generations who are already familiar with them. So there is no question, that using ICT for the purpose of promoting the institutions, communicating with the audience it is something that stakeholders have already considered.

Preservation, documentation and management of information to improve long-distance accessibility and work organization, as well as enhancing services for both users, and staff are also some top purposes for which stakeholders have already adopted ICT and realized their beneficial role. On the other hand, although enhancing visitors' experience, is one of the reasons why stakeholders introduced / supported ICT in their museum, when talking about benefits, very few mentioned this as an outcome of the ICT implementation (Figure 8). Those who do use such applications (edutainment tools, virtual environments, storytelling, personalised user guides, etc.) mentioned visitors' satisfaction and deeper understanding of their collections. However, it seems like the majority of stakeholders interviewees are not completely aware or convinced of the beneficial use of ICT in adding

value to the collections or objects by representing them in a more innovative, fun, or user-oriented way. This is especially valid where the institution is more traditional and managed by older, more conservative people. Combining this with the reluctance of some stakeholders to use complex ICT tools that do not serve their needs, one may come to the conclusion that there is space for contextualisation of available tools, in use case scenarios. CH stakeholders should become aware of what can meet their own needs and match their own profile and identity. This fact is also reflected in the point that technology providers considered more obstacles than stakeholders, as they know the actual potential of ICT which is not yet achieved, and they realize that ICT is not always a one-size-to fit-all solution.

Solutions adopted / proposed

Although lack of resources seemed to be the main impediment for adopting ICT, CH stakeholders and technology providers proposed several solutions that can contribute to the more effective and economic adoption of ICT. One of these solutions proposed, is to have an ICT department or trained IT personnel within the museum. Ideally the trained personnel will have strong ICT background, but also knowledge and understanding of the CH area, the organization and will be sensible about the content and collections. In parallel, some interviewees proposed this solution to the issue of the challenging communication between ICT providers and CH stakeholders, as the trained personnel can serve as mediator when it comes to more complex and bigger ICT projects for the institution. In the case of dealing with external providers that do not have any former collaboration with the museum it is more difficult to build a trustful, understanding relationship, and also the cost is usually higher. The above schemes will also provide some potential solutions to the main obstacle of sustainability, maintenance and upkeep of the systems. In addition, according to the interviewees there is high need for continuous education of CH stakeholders, for improving their knowledge and awareness of what ICT usage can offer to their field.

Many interviewees stressed the need to build communities and networks. Organizing and attending workshops, seminars and events is a good way to disseminate knowledge and exchange experiences with other stakeholders, providers and discuss potential solutions. Presenting similar cases, sharing ideas and thoughts within these networks will support re-use of practices, knowledge dissemination, and ideally discussions on methodologies and good-practices. Lessons-learnt documentations, evaluation reports and feedbacks, use-case scenarios and best-practices can play an essential role to the increasing adoption of ICT.

Concerning the issue of using inappropriate technologies that will not be covering institution's needs, interviewees propose user-centred design and clear identification of each institution's needs. Using Open Source solutions and collaborations with other institutions such as Universities' research departments were proposed as low cost solutions,

when there is inadequate funding. Last but not least, there is need for support from decisions makers' side and the governments not only in the form of money, but also with providing flexible funding schemes, decreasing bureaucracy and establishing strategies that promote innovation and creativity.

Authors' remarks:

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