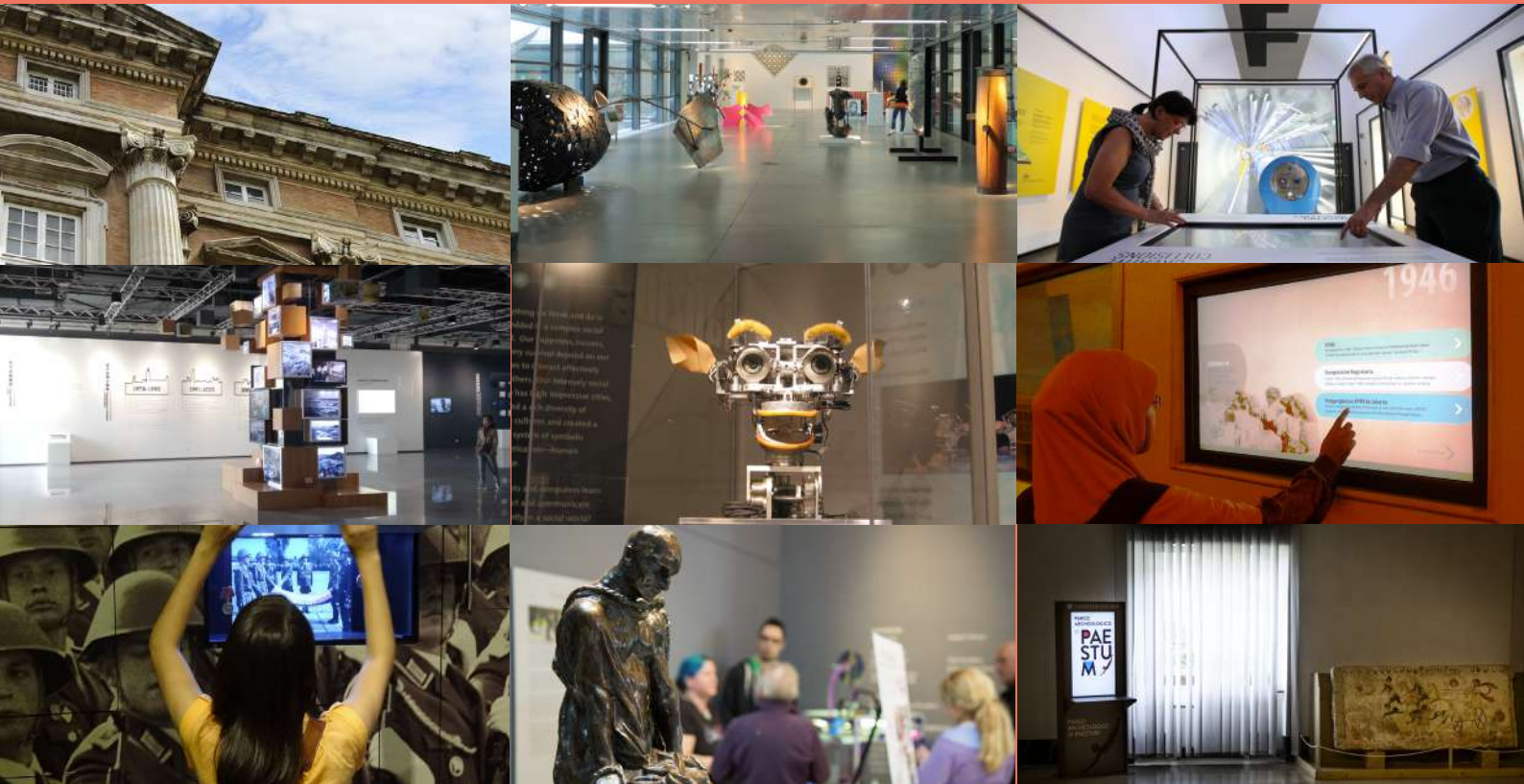


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# M u s e u m of the future

Digital skills for change and innovation in Italy

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Digital skills for change and innovation in Italy

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ERASMUS + / SECTOR SKILLS ALLIANCES

Mu.SA: Museum Sector Alliance  
575907-EEP-1-EL-EPPKA2-SSA



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## Mu.SA Project (2016-2019)

The "Mu.SA: Museum Sector Alliance" project aims to address the increasing disconnection between formal education and training and the world of work because of the emergence of new job roles due to the quickening pace of the adoption of ICT in the museum sector. To assist cultural professionals to deepen their knowledge and skills for the digital transformation of the museum sector, the Mu.SA project is designing and testing a unique training method. Running over the course of 36-months (01/11/2016-31/10/2019) the Mu.SA project is funded by the European Commission's Erasmus+ Programme.

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[www.project-musa.eu](http://www.project-musa.eu)

## Mu.SA Partnership

The Mu.SA Consortium is a rich mix of higher education institutions, independent and national research centers, cultural and social associations and organisations, and a major European network.

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# PREMISES

How can museums respond to the new needs of an ever-changing society? What are the necessary skills for professionals in the sector to be able to deal with the challenges posed by the introduction of digital technology? What skills are needed to transport the museum as an institution from the twentieth century to the present day?

As a component of the Mu.SA – Museum Sector Alliance project, co-funded by the Erasmus + Program, Key Action 2 Sector Skills Alliances, the two organizations of Melting Pro and Symbola have conducted a survey of the current scenario<sup>1</sup> with the aim of mapping the training needs of museum professionals in Italy, as regards their digital and transferable skills. We have chosen to adopt an approach based on samples, in order to gather the necessary

information and indications for developing several professional updating and refresher courses that correspond as closely as possible to the training needs of museum professionals, as regards the theme of digital technologies and transferable skills. The courses that will be developed over the coming months, in the context of the project, will be structured as MOOC (Massive Open Online Courses), e-learning and face-to-face courses. We hope to be able to support museums in updating their staff, with the ultimate goal of making them more socially, culturally and economically sustainable.

Our research has gone through several phases: the first was completed in April 2017, with the publication of Museum of the Future<sup>2</sup>, a report investigating the role of the

impetus and momentum provided by digital technologies for the renewal of the museum sector, and featuring in-depth interviews with ten managers of internationally renowned European museums with collections of various different kinds and sizes.

In conjunction with this, between December 2016 and March 2017, we also got 32 Italian experts in various aspects of the museum sector involved in the research. They included the directors of museums and archaeological sites, the project managers of smaller museums, innovative startup companies and cooperatives providing museum services, university professors, experts on professional profiles and the representatives of the relevant institutions in the field, at a regional and a national level. The first meeting, with

16 experts, was the focus group "Digital Innovation and Museums" set up in December 2016 by the Italian project partners Melting Pro, Symbola, Link University and the Institute for Artistic, Cultural and Natural Heritage of Emilia-Romagna (IBACN), in collaboration with MAXXI – the National Museum of the 21st Century Arts, and the cultural magazine Artribune. In the following months, the pool of experts involved grew ever larger, thanks to a further 14 interviews that enriched the research data.

For the three countries involved in the project – Italy, Greece and Portugal – the starting point was the result of the previous European project eCult Skills, of which Mu.SA is the follow up, which led to the identification of five emerging digital professional profiles for the sector<sup>3</sup>.

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1. This report is one part of the first phase of the project, which involves several partners in various countries. Apart from those mentioned in Italy, in Portugal these are: the ICOM delegation, Mapa das Ideias and the University of Porto, while in Greece they are: the ICOM delegation, the Hellenic Open University, AKMI and EOPPEP.

2. <http://www.project-musa.eu/wp-content/uploads/2017/03/MuSA-Museum-of-the-future.pdf>

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3. These five profiles are: the Cultural ICT Consultant, who has the role of defining the digital strategy of the museum; the Digital Cultural Asset Manager, who manages the conservation and enhancement of the digitalized collections or patrimony of the museum; the Interactive Cultural Experience Developer, who plans and designs innovative and interactive digital exhibits; the Cultural ICT Guide, who presents the museum's content to the public via digital means; and finally the Online Cultural Community Manager, who manages all of the museum's communities of reference (both online and offline), encouraging and developing their sense of belonging.

This report that you are now reading contains some extracts from the interviews conducted in Italy, arranged in four main themes.

The first theme is related to the need for a widespread digital culture. To promote the renewal of the sector, the first and foremost investment which we hope for is that of the digital training of museum professionals. In fact, only a widespread digital culture will make it possible for the cultural institutions of Italy to reconsider the contents and the cultural services that they offer, in the light of their relevance within the digital world.

The second theme regards community. When conceiving and producing innovative cultural contents and services, it is necessary to develop a personalized offer as regards the various audiences to be reached, adopting suitable forms and channels of communication. The museum as an institution is increasingly called upon to redefine and re-elaborate itself as a collective body, fed by the communities

that support it (local citizens and all of the cultural and scientific communities that it interacts with). As a place for the construction of communities and the shared planning of cultural proposals, the museum gauges its value on the basis of the quantity and quality of the relationships it is able to establish.

The third theme refers to professions and digital skills, above all in relation to the digitalization of heritage and the involvement of the public, which are crucial factors in the present period of great change and upheaval. According to the latest findings of the Mu.SA research, at present there are two strategic figures in Italy upon which it is believed that investment should be concentrated. Alongside the more widespread Online Cultural Community Manager (OCCM), who is responsible for the communication strategy of a museum and the management of its relations with online audiences, there is the perception of a need to be able to count on a figure who deals with liaisons and with establishing connections,

the Digital Strategy Manager (DSM). The DSM is responsible for the digital strategy of the museum, and is a technological mediator, who is capable of constructing a fruitful dialogue between museums and the technological world. S/he is a figure who knows both worlds very well, and is able to promote technological innovation, so as to transport museums into a new era.

Finally, the key issue of accessibility and security emphasizes the importance of striking a balance between the need to make cultural contents as open as possible and the need to ensure the security of data and their storage over time. On the one hand, in fact, digital technologies are a means for making culture accessible, on-site and on-line, without forgetting that in a digital society the museum must still be a place where the users enter into an intimate and direct connection with the objects conserved there. On the other hand, the maximum possible degree of openness should be counterbalanced by the

necessary guarantees concerning the security and conservation of data over time, which is an objective to be achieved in synergy with highly specialized professionals and operators outside the organization itself.



# THE CONTEXT OF REFERENCE

The research carried out in the context of the Mu.SA project has involved numerous experts in the sector, with the aim of understanding the potentialities and the opportunities that new technologies offer to the Italian museum system. In the present phase of major transformations, it is important for cultural institutions not to waste or disperse their resources by investing in projects and technological tools without having a long-term global strategic vision that helps them to understand the real purposes and uses of digital technologies, and the objectives that they should involve.

The picture that has emerged from our investigation of digital technologies is that of a situation that is highly-sensitive and rapidly changing, as well as very inconsistent and fragmentary.

Alongside those who have reported the very evident delays in the museum sector with regard to this theme, with digital technologies often being seen as belonging to a separate and unrelated sector, some situations stand out in

which there is the strong intention to build up a more evolved digital scenario with respect to the patrimony conserved in museums and the public of users. In these situations there is an efficient use of the skills and resources available and, above all, the capacity for strategic vision on the part of those who have responsibility and are in control, despite the very limited availability of investments in Italy, especially compared to other similar situations elsewhere in Europe.

The fragmentary aspects are partly due to the peculiarity of the Italian system, which is characterized by the presence of many small regional and local museums, some of them with only one employee and therefore usually with less resources available, by the co-existence of public and private administrations (municipal, national, ecclesiastical, etc.) and, last but not least, by different local policies and management visions.

Overall, the absence of a national museum policy in Italy<sup>4</sup> that fosters the integration



between the country's cultural heritage and digital technologies often means that digital innovation, with very few exceptions, is limited to the context of a museum's website and to communications on social media. Instead, a far broader reflection is needed, in order to understand the potentialities and the opportunities offered by digital technology for combining the role of museums, as agents for the conservation and enhancement of their patrimony, collections and resources, with the communities and local areas they belong to

and are involved with.

According to the "National Charter of Museum Professions" approved by the International Council of Museums (ICOM Italia) in 2006 "the need for professional updating of museum professionals is an important factor for the life of a museum". The need for forms of training for museum professionals that are in step with the changes introduced by new technologies is becoming increasingly urgent, in order to reduce the distance that separates Italian museums from various categories of potential

4. During the period in which this report was being finalized, the Italian Ministry of Cultural Heritage and Activities and Tourism (MIBACT) instituted a national museum system.



users. On the other hand, according to the 2016 report conducted by ISTAT (The Italian National Institute of Statistics) on “Museums, archaeological areas and monuments in Italy” (I musei, le aree archeologiche e i monumenti in Italia), when they were asked what they would do with a 10% increase in their spending budget, only 0.8% of the organizations and institutions consulted in the survey declared that they would use such a rise in economic resources to carry out training programmes or refresher and updating courses in order to enhance the qualifications of their personnel<sup>5</sup>. As regards technology, the same 2016 ISTAT report states that these organizations and institutions are also poorly equipped as regards new digital and multimedia technologies. Only 19.5% of them have spaces for showing films and videos, interactive displays and/or virtual reconstructions, 15.2% of them offer visitors the opportunity to use audio and video guides and 9.1% of them offer applications for mobile digital devices such as tablets and smartphones. 18.6% of these institutions offer

visitors free Wi-Fi connectivity in hotspots and only 6.6% of them are enabled to allow online ticket purchases on internet. As yet very few Italian museums and places of culture are using the new tools of information and digital communication to their full potential. In fact, while more than half of these organizations and institutions (57.4%) have a website, only 24.8% of them use newsletters to communicate with the public and their users, and only 13.4% of them have a digital catalogue.

Similarly, the study of the Observatory for Digital innovation in Heritage and Culture promoted in 2016 by the School of Management of the Politecnico di Milano<sup>6</sup>, shows that 52% of museums in Italy have at

least one account on a social network but only 13% of them have accounts on all three of the most common social networks (Facebook, Twitter and Instagram). Most of these are on Facebook (51%), followed by Twitter (31%) and Instagram (15%). Nevertheless even the small number (10%) of museums that do not have a website almost always have at least a Facebook account.

Much must therefore still be done to increase awareness in the context of Italian museums in consideration of the great changes currently taking place, which are constantly being accelerated by the rapid diffusion of technology, as well as by the ever-pressing need to invest

5. The data refers to 2015, at which time other interventions were considered as being more urgent, such as: information and communication campaigns to increase the number of visitors (26.7%), renewal or renovation of displays and enhancement of exhibits (13.9%) interventions for organizing events intended to improve the services offered (11.4%), urgent interventions of maintenance or restoration of the museum's assets and collections (10.5%), and urgent interventions of a structural nature such as renovation and restoration of the museum buildings or refurbishment of the facilities and furnishings (10.5%).

6. The study was conducted on a sample of museums consisting of 476 Italian institutions, corresponding to about 10% of the museums that were open to the public in 2015.



in training so as to be active in spreading an appropriate digital culture. The goal of modernization and renewal in the museum sector, in the light of digital transformation, involves reconsidering its cultural offer, so as to make the experience of visiting a museum more meaningful not only from a cognitive but also from an emotional point of view, in order to attract a growing number of people both offline and online, especially those who are not experts or professionals. These are radical transformations that require good leadership, which is able to catalyze change, as well as an interdisciplinary and cross-sectorial approach, which is in line with the cross-sectorial dimension of digital technologies.

These technologies have enormous potentialities, and every cultural organization – including museums – must regulate and correctly adjust its use of them, while

evaluating the relevant resources and objectives. Technologies, if used in a strategic and coordinated way, can bring institutions closer to the different communities that gravitate around museums. Digital technology is first and foremost an instrument of social participation, which supports the museum in offering a cultural programme that involves a greater degree of sharing and participation. The true value of a museum today is no longer based solely on the worth of its tangible collections but, above all, on the value of the relationships it has managed to build up, while bringing heritage and patrimony into contact with the public. It cannot be denied that one of the main barriers to digital development in the sector of museums is the lack of investment in technological infrastructures<sup>7</sup>. In Italy this is mainly due to resistance and opposition of a cultural nature. This was recently shown very clearly by the fact that, in the long-awaited



state competition for the recruitment of 500 new museum professionals organized by the Ministry of Cultural Heritage and Activities and Tourism (MiBACT) in 2016, there was no reference at all to digital skills as a requirement for being selected. The renewal of professions with the inclusion of digital skills is therefore absolutely a priority if Italy wishes to properly address and tackle the transformations that are now underway. In general, the four emerging professional profiles for the digital sector, which were defined by the Mu.SA project, are currently considered to be too specialized for the Italian context, especially in consideration

of the fact that, due to administrative reasons, it is difficult to integrate these professional profiles into the existing organizations of museum personnel. For this reason, one direction to be followed in the immediate future is the updating of the skill-set of the existing internal employees and the development of external collaborations. On the basis of these reflections, we feel that museums should go back to being the places of experimentation that they were for a very long time in the past, often proceeding by trial and error. Only in this way will it be possible to provide enough room for innovation.

<sup>7</sup> Italy has a very low DESI (Digital Economy and Society) index, together with Romania, Bulgaria and Greece <https://ec.europa.eu/digital-single-market/en/desi>



**RESULT OF THE  
MU.SA RESEARCH:  
THE EXPERTS  
SPEAK**

# 1. DIGITAL CULTURE

Although there is some evidence of an improvement in the situation over the last five years in Italy, albeit in a very non-uniform way across the country and at various different speeds, there is still no truly widespread digital culture here.

The reasons for this delay can be found in the past. Long before the advent of digital technologies, Italian museums consistently underestimated the central role of the public and, consequently, also the importance of the specific means of communication adopted for the dissemination of cultural contents. Most museum institutions generally considered communication as a marginal and subsidiary element, as compared to providing displays and exhibitions and ensuring research activities, and this attitude was typical of all the different levels in the areas of policy-making, management and leadership. Indeed, even until a few years ago the dominant trend was to consider communication as simply being an “additional service”, as were any other activities and services that were not

strictly related to the conservation and display of the collections, which was widely seen as being the true essence of the museum's mission. Instead, communication, in addition to the promotion and enhancement of cultural heritage, has now become the focus and the fulcrum of the museum's activity, and in this field, digital technologies must not be considered as something merely "additional", but rather as the concrete basis for instituting a contact between the public and institutions, by means of a more extensive offer of services, including those that are educational and those that support the administration, enhancement and enjoyment of cultural heritage today.

Consistently with the prevailing old-fashioned approach, digital technologies are still not sufficiently considered as an integral element of strategic long-term planning with a measurable impact. However, the need is now increasingly being felt for shared policies and approaches to planning that involve the whole organization, within which the digital dimension is considered in a cross-sectoral way. Digital technologies

must be considered as part of a service that is able to guide both the museum institution and those who work towards realizing its purposes, not only in quantitative terms of increasing the number of its visitors but also in terms of its quality, impact and relationships.

Only a widespread digital culture will allow the cultural institutions of Italy to reconsider the contents and the cultural services offered by museums, in the light of their relevance within the broader digital world. For this reason, the first intervention that we deem to be necessary concerns investment in the training of museum professionals, in order to overcome the existing situation of widespread cultural resistance. It is to be hoped that, alongside a basic level of digital skills that should belong to all the members of a museum's staff, those who work in this sector will further develop and increase their knowledge, according to their specific professional roles. If a museum succeeds in setting up its own internal digital department, it is important for this department to work



together with the other museum departments in disseminating and sharing its goals and digital knowledge with the whole organization. The essential precondition for this to happen is a leadership that can act as a catalyst for change.

“The new technologies are largely underestimated because the communicative role of the museum is underestimated”



**Mauro Felicori, Director of the Royal Palace of Caserta, Caserta**

[www.reggiadicaserta.beniculturali.it](http://www.reggiadicaserta.beniculturali.it)

**Average annual number of visitors: 681.021**

**Social networks: Facebook, Twitter, Instagram, Pinterest**

At the root of the digital question is an issue that we could define as ideological: the conception that the Italian museum establishment has regarding museums. We have inherited a situation in which those with managerial responsibility for Italian museums (in particular those that are run by the state, but also municipal museums) have for many years underestimated the question of the public and the idea of a museum as a means for the communication of cultural contents. For a long time, for this managerial sector, the primary function of the museum institution has not so much been that of protection but above all that of academic research. It is this predominant academic concept that has led to an underestimation of the importance of new technologies. This is demonstrated, for

example, by the limited availability of data about the paying public. The turnover of a museum is a cultural turnover. But who measures the cultural turnover? Who measures how much visitors and users actually learn when they enter a museum?

The new technologies are largely underestimated because the communicative role of the museum is underestimated. In this sector it is necessary for the theme of digital technologies to become one of the major themes of research, starting with the national research institutions, because the digitalization of heritage is the basis of all communication activities. Every museum must work to put all of its data and knowledge available on a digital platform, which will be complete and accessible.



“ A museum is a place where you have an experience, also thanks to the use of technologies that surround the user in a natural way ”

**Vitalba Morelli, Vice-President, Associazione TuoMuseo, Milan**

[www.tuomuseo.it](http://www.tuomuseo.it)

It is rare to find Italian museums that adopt long-term strategies to plan innovation and to achieve specific objectives. If you want to get good results, you have to work within this kind of time-frame. There is a cultural limitation: since they do not have specific skills related to the cultural and digital sectors, those who govern and who handle the public administration have difficulty in constructing and developing adequate long-term plans. Sometimes the desire to emerge and stand out at all costs unfortunately prevails, and this leads to big projects, which have little in the way of substance or genuine impact.

The prevailing concept of a museum in Italy today is that it is a "place of conservation", where one goes to see things, learn something and return home. Instead abroad, especially in the United States, a museum is a place where you have an experience, also thanks to the

use of technologies that surround the user in a natural way. Today we need to get closer to such a new idea of the museum, seen as a place for research and innovation.



“ Digital technology is not a service that is an end in itself, but an instrument that must accompany the museum in the realization of its mission ”



**Giuseppe Ariano, Marketing and communication Director SCABEC spa - Madre Museum, Naples**

The management must be able to integrate digital technologies with the vision that it has of its own museum. Digital technology is not a service that is an end in itself, but an instrument that must accompany the museum in the realization of its mission, in the same way as the press office, the website, etc. It is all a system that needs to be reviewed and in Italy we are still a bit behind in this sector. We must think in digital terms: it is a question of finding the right approach, of understanding



how these tools work and how they can be used.

Training must be done not only as regards the use of an instrument but also as regards a strategy. Those who communicate must also be familiar with marketing, so that they never lose sight of those with whom they wish to communicate, in line with an overall strategy in which the objectives to be achieved are clearly defined."

## 2. COMMUNITY

Digital technology provides a set of tools that should be used in a coordinated and strategic way at all levels, so that the potential of new technologies will not be reduced only to the use – although this too is very important – of social media channels, but will affect all of the aspects and moments in the life of a museum. The aim of this set of tools is to make the museum more accessible by connecting it to a very broad system of relationships, made up of the different local, national and international communities with which it interacts. These are communities that the museum needs to get more and more actively involved, according to a 2.0 logic, thanks to which users can become co-creators of cultural contents and not just users of them. Today some Italian museums are more closely monitoring those mutations of contemporary society that tend to favour contact between cultural institutions and users, with the aim of turning museums into collective

entities powered and fed by the communities that support them. The value of a museum is no longer measured by the collections that it houses, but by the relationships that it manages to establish within society, with institutions and with all of its stakeholders. In this process of transition, digital innovation provides an infrastructure that multiplies the opportunities for exchange, accessibility and participation. For this reason the issue of the centrality of the public, in a context of their co-participation and co-creation, emerged preponderantly in Italy even before the issue of digital skills. Here we are referring not only to the increase in the number of visitors, but also to the diversification of the public to be reached and to the impact of the museum towards its communities of reference (audience development and people empowerment). It is therefore important for each institution to know its own public or audience of users and to answer several



questions about the typology and the ages of its visitors, as well as their motivations, behaviour and preferences both inside and outside the museum, and so on. Access to all of this information makes it easier to manage the museum experience and to maintain the fidelity of the public, thanks to a personalized offer, which is communicated through the most suitable means and channels of communication, and museums are therefore able to anticipate the expectations of visitors as regards digital technologies and their visit

to the museum.

In this changed scenario, shared planning between the museum and the local area is necessary, as well as between museum professionals, consultants and other stakeholders with whom the museum works at all levels to support its mission. It is not just a question of technological capacity, but one that has to do with the construction of bridges, dialogue and relationships in a broadly shared vision.

“Through digital technologies the world is acquiring new means of communication and new ways of interacting. Museums cannot be exempt from a transformation that affects the whole of society”

**Fiorenzo Galli, Director General and Director of Cultural Proposals, National Museum of Science and Technology, Milan**

[www.museoscienza.org](http://www.museoscienza.org)

**Average annual number of visitors: 500.000**

**Social networks: Facebook, Twitter, Instagram, Youtube**

Through digital technologies the world is acquiring new means of communication and new ways of interacting. Museums cannot be exempt from a transformation that affects the whole of society. Instead they are called upon to be innovative, because the world of culture, and therefore that of the museum, has the right and the duty to carry out an action of renewal. [...] Our Museum has now been operating for 20 years in the field of digital technologies and means of communication. Our long-standing activities in the field have allowed us to develop a strong awareness of the importance of digital tools and have given us a diversified knowledge of the choice of instruments and the range of different means of communication that can be used depending on the aims and

purposes that can arise over time.

In 2017 our museum launched a Digital Transformation project in collaboration with several important partners, above all Accenture Italia, our main interlocutor and support in the context of a process intended to enhance the use and the development of digital technologies and resources. The most important components of this process were the setting-up and implementation of a CRM (Customer Relationship Management) system and a CMS (Content Management System) which, together with an improvement of the infrastructures of the network and of connectivity, will lead to the development of a Smartphone app, which will be the first visible product aimed at the public.



This app will provide a service for orientation inside the spaces of our museum and it will also offer tailor-made contents realized for Smartphones, involving several unusual itineraries and approaches to visiting the museum's collections, displays and exhibitions. By establishing a dialogue with the CRM system, the app will be able to create profiles of our users and thus learn more about their behaviours and interests during their museum visit, which will then be followed up by strategic actions, proposals and targeted requests as well as providing answers to the

questions posed by users.

The process of digitalization that is now in progress is extremely important for the dialogue that our museum is seeking to establish on an international level. Today our museum has relations with 120 institutions, not all of which are museums, all around the world. It is evident that the availability of a recognized digital language and a well-qualified structure makes this dialogue much more important and much easier. It is a bit like switching from transportation on horseback to travelling by plane.

“*Nowadays in order to be digital one no longer needs a "digital" department, as digital technology can be integrated into any sector of the museum*”

**Carlotta Margarone, Head of Communications, Marketing and the Web, Fondazione Torino Musei, Turin**

[www.fondazionetorinomusei.it](http://www.fondazionetorinomusei.it)

**Average annual number of visitors: 700.000**

**Social networks: Facebook, Twitter, Instagram, Skype, Pinterest, LinkedIn, Youtube, Spotify**

Traditionally, communication investments in the cultural sector are still closely linked to the use of traditional tools for promotional and press office activities. Although these modalities are irreplaceable, they do not accomplish the other task of communication: the building of communities. These are communities that digital communication platforms can contribute towards developing and in the management of which the whole staff of the institution should be involved. Nowadays in order to be digital one no longer needs a "digital" department, as digital technology can be integrated into any sector of the museum. Everything ranging from community building on social media, to the digitalization of collections, then released

or published as Open Data, to promotion and marketing is now digital, as are the spaces for meeting and establishing a dialogue with the public.

There are channels like Twitter, for example, which are very effective for the creation of networks, first of all between colleagues, but also between stakeholders and potential museum supporters, sponsors and patrons. Thanks to these channels, even a small niche-interest museum can find its own target audience or get in touch with a similar museum on the other side of the world, with which it can collaborate and build projects. Constructing these networks of support and collaboration with colleagues and promoting stakeholder



research also makes it possible to get out of any sense of isolation that a limited local dimension or budget limitations may have created.

Also listening and opening oneself up to the world is important. I often say that there will always be a museum that does things better than us or that has higher spending budgets than ours. Seeing what others do, looking for inspiration, being willing to listen to our audience of users and understand their needs is always a stimulus, and in my career I have always found a disposition to collaborate on the part of my colleagues all over the world.



# 3. DIGITAL PROFESSIONS AND SKILLS

The theme of the renewal of museum skills in order to deal with transformations that are now underway has not escaped the attention of the highest-level organizations in Italy. According to the predictions of the report entitled *Anticipations concerning Cultural Heritage (Anticipazioni sui Beni Culturali)* by the Isfol (now known as the Inapp), the recent Franceschini reform (Ministerial Decree of December 23rd 2014) will have an impact on the demand for new skills in museums that will affect the figure of the superintendent of the national cultural heritage, as well as other more technical figures, ranging from curators to conservators and front desk operators. The recent reform has in fact introduced some important innovations including tax credits for businesses in order to enhance the competitiveness of tourist industry and encourage the digitalization of the sector, as well as several initiatives for updating the skills of employees in all the central and peripheral structures of the Ministry of Cultural Heritage and Activities and Tourism (MiBACT), in order to encourage digitalization, and above all, to

improve publicity and information gathering. For this reason it is planned to activate some extraordinary resources for the professional training of the personnel of the MiBACT and for strengthening the organization of state-run museums.

The process of digitalization is already underway, and it is now a case of finding and allocating the necessary resources for integrating it into various aspects of the existence of museums in Italy. In future, as mentioned above, many different digital skills will be required by the Italian museum system, in relation to two major macro-areas: the digitalization of heritage and the involvement of the public. As these are major transformations, it is equally important to develop transferable skills that facilitate a move towards a more interdisciplinary and cross-sectoral way of working.

As regards the first macro-area, the cultural contents generated from digitalized and stored patrimony are the basis of all museum activities, including research, communication and the

involvement of the public. While it is true that not all museums have the right resources for digitizing their collection, it is also true that, before investing in digitalization, one should understand what is driving us to promote this investment and how to make the digitalized material accessible to the public. A good overall strategy can facilitate the concentration of limited resources with the aim, for example, of financing the digitalization of a selected part of the collections and including it in an accessible web platform that the public see as relevant. For the development of this platform and of additional digital supports (ranging from audio-video production to interactive displays and exhibits), small museums can have a collaborative network approach in synergy with other cultural institutions and stakeholders in their local areas and in the international communities to which they succeed in gaining access.

The development of the technologies that are necessary for putting a digital catalogue into an online network, for internal and external use,

does not only concern the work of archivists and conservators, but also that of curators, who are increasingly involved in the cataloguing of works that have already been created in a digital format. As regards the development of the software that is necessary for archiving collections, at present it is not considered feasible to develop the necessary skills within museums, nor is it seen as a priority, with very few exceptions. In most cases, what we intend to do is to ensure synergistic relationships between specialized software development firms that are constantly updated regarding the latest developments and museum staff members whose task is to manage relations with these highly specialized suppliers. But how is it possible to guarantee the long-term preservation of all digital assets? This is a challenging theme for the present and the future that concerns not only our own national museums but also those of the whole world.

The second macro-area of strategic digital skills for the Italian museum system is that of the involvement of the public. It includes

all those activities related to communication, teaching and support for a visit to the museum (including before, during and after the visit).

The digital skills that are indispensable for dealing with the transformations underway in this field range from communication skills to the analysis of big data, content production, the improvement of the user experience design, audience development, education, gaming, online sales and crowdfunding. Alongside social media specialists who can ensure a good level of public involvement and engagement, data analysts are crucial for reading the information collected about users and for translating it into activities and new priorities, in support of the strategic decisions of the museum. In this area the recent Franceschini reform, by giving more importance to digital communication (particularly social media and websites), has already had an impact on Italian national museums. Some of these museums have now started to invest in these sectors, also by employing specialized professionals like Social Media Managers or Digital Media

Curators (e.g. Palazzo Madama in Turin or the MUSEION of Bolzano).

For the production of digital contents, the museum needs to employ all those professional figures who deal with this sector, whether they are producers of contents - also photographic and video - or content editors. In this context, it is important to offer contents that are relevant to the context and the channel utilized, and that are meaningful for the target audience. Finally, considering that the on-site and online visit should increasingly be understood as being an experience for the user, the user-experience is a fundamental element of any project and digital product that is to be implemented. It is therefore useful to have people who are able to design systems with which users can interact effectively and naturally. For this reason, it is essential to know what kind of relationship they have with digital technologies, as well as ensuring that they have good skills in the sectors of interaction design, digital design and graphic design. Moreover, digital skills should be accompanied by a knowledge of





some social and political issues and a basic professional code of ethics.

At the same time, it is equally important to develop transferable skills that can encourage operations of change and integration between different activities, as this is indispensable for a process of transformation that can only be vertical. If all aspects and sectors of the museum can benefit from the development of new technologies, all the members of staff are called upon to have knowledge and awareness of the opportunities that derive from their applications. In this regard, the most important transferable skills are mediation and leadership. While good leadership is a necessary element for catalyzing and directing change, all of the various skills related to mediation appear to be fundamental, as they are able to put the different contents into relationship with each other, in order to make them simple but not banal or trivial. All of this must be done starting from the internal dimension: the curator or the content editor will have to clarify contents so that the external communication expert can

effectively convey it to the public.

According to what has emerged from the Mu.SA research in Italy, at present in this country the two strategic figures in which we consider it most urgent to invest are: the Online Cultural Community Manager and the Digital Strategy Manager. The main skills of the Online Cultural Community Manager, also called a Digital Media Curator or a Visual Media Curator, range from the monitoring of technological trends, in order to keep track of and anticipate the on-going development of Information Technology, identify the needs of users and provide them with assistance. In terms of transferable skills, this professional figure needs to be a problem solver who is resilient, communicative and good at listening, with good skills as regards networking, analysis, synthesis and time management. In order to ensure the strategic use of social media a greater number of senior figures in this area are needed, compared to the current situation in most Italian museums, where junior figures are now prevalent. In fact, only people with a certain experience are able

to develop the strategic skills that are necessary to achieve a good level of engagement with the public.

The second professional figure to emerge among those that are most requested in Italian museums is that of the Digital Strategy Manager, a technological mediator who can build up a profitable dialogue between museums and new technologies. This figure should be a person with a high level of specialization, who is able to promote innovation and who has an in-depth knowledge of the two different worlds in which s/he operates. The main skills that a person with this professional profile must possess involve the development of business plans, the alignment of digital and business strategies, the identification of user needs, and the planning of products and services. The most important transferable skills for this figure are in the areas of networking, creativity, relational, storytelling and negotiation, as well as a need for good communicative abilities.

Both of these professional figures should



possess a high level of strategic skills and, at the same time, a solid knowledge of the internal and external contexts. For this reason, wherever possible, the ideal approach would be to invest in updating the skills of those professionals that are already employed as personnel in museum contexts. However, due to the high degree of specialization required, these employees can be trained within museums only partially, up to a certain level of competence. In order to satisfy all the requirements of museums for

similar professional services it would mostly be necessary to look outside the museum context. Institutional reforms are therefore needed, so as to establish the concord and correspondence that is currently lacking between the training and education proposals now available and the qualifications that are required in state-administered recruitment competitions for employment in the public sector.

“*Digital technologies must be considered in relation to the two great poles of the life of a museum: the collection and the public*”

**Valentina Zucchi, Public Relations at the Associazione Mus.e - Musei Civici Fiorentini, Florence**



[musefirenze.it](http://musefirenze.it)

[museicivici-fiorentini.comune.fi.it](http://museicivici-fiorentini.comune.fi.it)

Digital technologies must be considered in relation to the two great poles of the life of a museum: the collection/patrimony and the public. Depending on the internal skills that are present, the vision of those with managerial responsibility and the available resources, each museum is developing its own digital strategy, which is more or less evolved depending on the specific case, as regards these two poles. This strategy must also take into account the opportunities and limits that are inherent in the use of digital contents, the right to use images, promotional activities and the forms of communication that are increasingly connected to a specifically targeted virtual community. Digital technologies can help to build a more meaningful museum experience from an aesthetic point of view, one that is more immersive and emotive but also cognitive,



offering insights, connections and associations that no mere information panel could ever give. Another issue concerns the skills of those who design digital instruments for the sector. Even if museums acquire the contents, the teaching skills and the right information and knowledge about their users, I do not think they will ever have the resources to develop software internally. For this reason they will have to turn to external agents specialized in the area of cultural heritage.

“ It is important to train each person to do their own work digitally, so that the whole museum is able to communicate with both communities, the real as well as the virtual ”



**Francesca De Gottardo, Founder of the #svegliamuseo Blog and Community**

[www.svegliamuseo.com](http://www.svegliamuseo.com)

There are transversal and vertical skills, because the activities of a museum must all be influenced by digital technologies. Today the public is both virtual and real. Thus, if you decide to invest in an office or a department dedicated to the public, you must be confident with both of these dimensions. The transformation must regard the whole museum, and the rather advanced average age of museum staff in Italy is not a sufficient excuse. It is necessary to have a training program for all the staff members, because knowledge creates collaboration. It is important to train each person to do their own work digitally, so that the whole museum is able to communicate with both communities, the real as well as the virtual. Every museum organization should carefully map its audience and its stakeholders so as to understand their needs. If an external agent does this as a

consultant, s/he must help the organization to understand itself better, and avoid proposing the same solutions to different organizations. In my opinion, the most indispensable professional figure today is that of the *Online Community Manager*, who should be considered as an autonomous and separate figure in relation to the press office. In addition to communication skills, which are essential for a profile such as this, the museum should invest in imparting other skills to this figure that are related to audience development and storytelling, and it should develop the ability to elaborate a rationalized investment plan, and to analyze the associated risks and benefits. Finally, I have found that this figure should also have skills connected to marketing which, as far as I myself am concerned, I learned in the corporate world.

“ We need to reconsider the museum on the basis of lives that have become largely digital. Otherwise there is the risk that everything will stop with simply setting up a Facebook account or putting the catalogue of the exhibitions online ”



**René Capovin, Project Manager at Musil – the Museum of Industry and Labour, Brescia**

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**Average annual number of visitors: 20.000**

**Social networks: Facebook, Twitter, Instagram, Youtube**

Digital technologies have changed the existence of users so much that we need to reconsider the museum on the basis of lives that have become largely digital. It is a case of rethinking an institution starting from what is happening outside it. On the other hand, if we start from the inside, and from the needs that the museum has already identified, there is the risk that everything will stop with simply setting up a Facebook account or putting the catalogue of the exhibits online. But this is merely a case of transferring things onto digital supports and instruments without really changing the way that they were done before.

The *Digital Strategy Manager* is a professional

figure with managerial responsibility whose role should, we might say, in some ways support and even partially overlap that of the museum director. Looking at this profile in a realistic way, it is quite unlikely to suppose that a professional figure capable of effectively deciphering digital trends and challenges would be a permanent member of the staff of a museum. It would be more realistic to think of this professional as a consultant, not in the sense of a "simple" social media manager, but in the sense of a figure who sees digital technologies not just as an extension of the museum as it is, but as a field in which to try out and experiment with modalities that are alternative, and in a certain way autonomous, for "creating culture

“The Online Community Manager [is a figure] with an in-depth knowledge of the museum sector, as well as a familiarity with digital means of communication”



**Maria Elena Colombo, Digital Media Curator, Freelance**

The classification is clear enough. There is an aspect of digital technologies that concerns the archiving and digitalization of documents in the broadest sense, which can also be the basis for communication, for the website and in some sense for education (...). Then there are the digital technologies that simply concern communication that, starting from social media and in a 2.0 perspective, represent a sort of support before, after and during the visit to a museum. Here I am referring to the vast world of virtual reality, augmented reality and so on. Many museums in the English-speaking context have understood that digital technologies are very important because they involve the whole museum (ranging from the director to the rest of the staff), and because they are unified with the broader organization, and not separated. Italy is a long way behind the English-speaking world, partly due to the lack of specific training. For example, there is no such professional figure as an Online Community Manager suitable for the

museum sector, with an in-depth knowledge of the museum sector, as well as a familiarity with digital means of communication. An essential skill for this professional profile is the knowledge of the museum collections and of the basic terminology of the museum sector, even if it does not need to be so specialized as that of an art historian for example. The gap that exists in the context of training was recently revealed by the latest state-administered professional recruitment competitions held in Milan, which were intended to give employment to conservators. In this case the candidates were not required to have kind of digital competence, nor was there any request for the most basic vocabulary in the sector or for a familiarity with concepts such as fundraising, crowdfunding, web hosting and so on. In fact in Italy we are still restricted by an outmoded approach, with rather obsolete systems of classification, nomenclature and terminology.



More in general, Italian museums should equip themselves with a shared policy with clear indications concerning the practices to be followed to deal with any critical situations that may arise, in addition to adopting a Digital Strategy that can give a direction to the policies and action of a museum for the

next few years: a sort of ethical document that can give various indications ranging from the decision of a museum to use only open source software, to that of being a partner of all the organizations and stakeholders that support it, and so on.

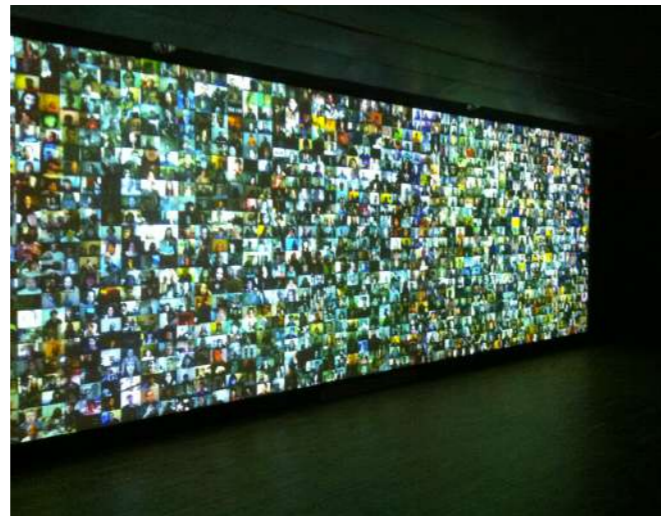
“The themes that often crop up in our surveys on professions are quality, metadata and new technologies”



**Massimiliano Franceschetti, Ricercatore, Researcher at Inapp - National Institute for Public Policy Analysis (formerly Isfol), Rome**

The themes that often crop up in our surveys on professions (whether related to cultural resources and heritage or not) are quality, metadata (big data - statistical analyses) and new technologies, in connection with the changes now taking place and the competition existing at an international level. Thanks to the recent Franceschini reform, the MiBACT intends to give an important stimulus and incentives for the development of new technologies, with the aim of both improvement and protection.

One of the issues to which I paid attention while looking through the professional profiles you presented to me is the extent to which the skills and competencies connected to digital technologies make all of these job-profiles rather novel and distinctive. In consideration of the existing literature, I believe that digital technologies can be divided into four main categories that one should keep in mind when developing the right skills for these figures:



- 1) the potential offered by digital technologies and by the web;
- 2) the use of social media;
- 3) the internet of things (virtual reality, Google Glass, etc.);
- 4) the analysis of Big Data, in order to keep track of everything that happens on social media on the theme of cultural resources and heritage

“The museum sector needs to invest in training up some professional profiles, such as that of the Digital Strategy Manager”



**Margit Oberrauch, Direttrice Amministrativa, Administrative Director, Museion Foundation. Museum of Modern and Contemporary Art, Bolzen**

[www.museion.it](http://www.museion.it)

**Average annual number of visitors: 50.000**

**Social networks: Facebook, Twitter, Instagram, GooglePlus, Youtube**



Since last year we have had a person who deals with online communication, but what we lack is a general vision concerning digital technologies that could influence all of the activities of the museum, ranging from the online management of archives to the creation of interfaces within the museum, creating connections between the various digital systems. The museum sector needs to invest in training up some professional profiles, such as that of the Digital Strategy Manager, a professional figure who is very familiar with the functioning of a museum (in our case a museum of contemporary art) and skilled in the production of cultural contents, in the context of a digital vision. This is the first step we need to take.

# 4. ACCESSIBILITY AND SECURITY

The digital dimension appears less and less to be a linear expansion of the analogical world that involves a certain rigidity and a number of limitations. On the other hand, digital technology is increasingly becoming an osmotic channel within which it is possible to establish new exchanges, integrating the two dimensions so as to increase the connections between cultural institutions and society. The ever increasing diffusion of contents in an open and digital form by the most varied cultural institutions offers many opportunities for sharing. While more and more universities are offering free lessons in the form of podcasts, museums are being called upon to make artworks, artifacts and contents more accessible with the support of new technologies, while ensuring the security of this data and its storage or conservation for long periods of time.

Digital technology is a means for making culture accessible, both on-site and online. The applications of new technologies in the physical spaces of the museum can

bring various different audiences closer, generating equal opportunities in favour of disadvantaged categories of society, (helping people to overcome physical and/or cultural limits), or introducing new means and forms of communication which are more suited to the new generations and to all the social categories that are more familiar with modern technologies (e.g. augmented reality applications, gamification instruments, etc.). Nevertheless one must not forget that, even in the digital society, the museum must still be a place where the user enters into an intimate and direct connection with the objects that are preserved there. Technological devices must, however, be used to bring people closer to the materiality of these objects. We therefore need a user-friendly kind of technology, which is able to respond in different ways according to the abilities and needs of those who use it, in order to avoid the creation of gaps between digital natives and other audiences.

There are many ways and means for increasing online accessibility, and among these the



main ones are: the digitalization of heritage and collections, the management of archives aimed at integrating the various professional profiles in museums (conservators, curators and communicators) with each other, and the development of a digital form of communication that is able to create engagement and participation through websites and social networks. All of the investments must be made starting from the user's needs and the ability to sustain the costs over time of the various technologies adopted, taking into consideration their long-term maintenance, as well as the accessory skills required. For example, in order for a museum to put its

collection online, it needs to rely on copyright experts who are knowledgeable, confident and competent in this sector, as well as having access to the appropriate software.

In parallel with this, another digital challenge for museums is to ensure data security and its storage and retention over time. These are technological challenges that the museum world is now being called upon to solve by collaborating with some highly specialized experts and professional bodies, ranging from Information Technology companies to universities and research centers that are studying and experimenting in these areas.



“ *The digitalization of collections should be done with a view to external use, so that the contents are accessible to non-professionals* ”



**Lucrezia Ungaro, Head of Scientific Technical Coordination, Museum of the Imperial Forums - Trajan's Market (Fori Imperiali - Mercati di Traiano), Rome**

**[www.mercatiditraiano.it](http://www.mercatiditraiano.it)**

**Number of visitors in 2017: 116.854**

**Social networks: Facebook, Twitter, Instagram, Flickr**

Some gaps are still emerging because we have worked too much with the use of traditional dynamics. For example, the databases should be "freed" and implemented as open source. Instead a great many museums have some very complex databases to manage, for their own internal use, because they are designed only for purposes of the protection of cultural heritage and patrimony. Then there is the question of 3D, a field in which there are no standards of reference at a national or an international level. For example, our museum very frequently uses three-dimensional reconstructions, although a series of problems related to the creation of databases suitable

for the storage and applicability of these types of files need to be resolved, due to their very large dimensions.

In general, the digitalization of collections should be done with a view to external use, so that the contents are accessible to non-professionals. Instead, the existing catalogues are at present mostly intended for the use of professionals.

“ *We need to work on the content that must be produced in reusable, open formats, so that we can easily switch from one technology to another* ”



**Anna Maria Marras – Head of the Commission "Digital Technologies for Cultural Heritage" of ICOM Italy, and National Coordinator of the Museums and Archives of Wikimedia Italia**

It is necessary to acquire the awareness that technologies change and that it is difficult to keep up with their evolution. For this reason we need to work on the content that must be produced in easily reusable, open formats, so that we can easily switch from one technology to another.

In order to support these processes there is the professional figure of the Wikipedian in Residence, who assists with the process of digitalization and the inclusion or insertion of images, manuscripts, texts, postcards and any kind of multimedia documentation onto wiki platforms (not just wikimedia commons or wikisource). This is not simply a question of



cataloguing, but instead the aim of Wikimedia Italia is mainly that of collaborating with museums for releasing shared contents that can be shared by everyone, and that are produced by adopting specific licenses for their sharing and reuse.



“How we can ensure data retention and storage not only for the next 5-10 years but for many more years? We are dealing with a patrimony that needs and deserves to be preserved for much longer”



**Gabriel Zuchtriegel, Director of the Archaeological Park, Paestum**

**[www.museopaestum.beniculturali.it](http://www.museopaestum.beniculturali.it)**

**Average annual number of visitors: 340.000**

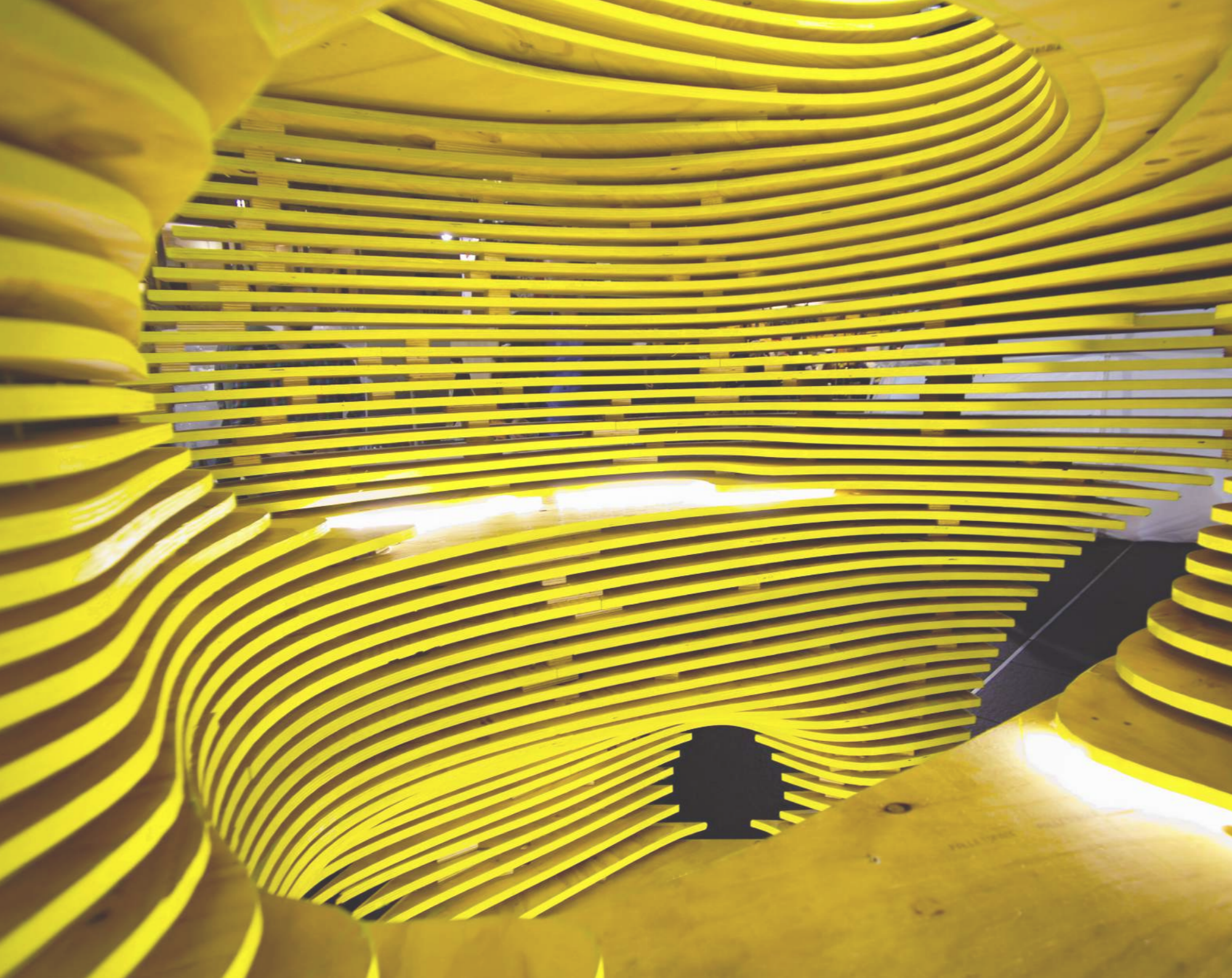
**Social networks: Facebook, Twitter, Instagram, Youtube, Wikipedia**

Digital technology is changing its approach. If we talk about areas such as conservation, the management of collections, documentation, and data accessibility, digital technology is important because it provides new tools for research.

A different assessment should be made on the subject of security, because there are problems related to loss of data. As a museum, we are naturally very sensitive towards this theme. We cannot rely 100% on digital means for the cataloguing and inventorying of objects, if we could lose some data as a consequence. In the case of digital technologies, the question arises of how we can ensure data retention and storage not only for the next 5-10 years but

for many more years, because we are dealing with a patrimony that needs and deserves to be preserved for much longer.

Digital technology can certainly provide support for an exhibition, but I am very sceptical regarding the excessive use of digital installations in museum displays. I think that people come here to have an experience connected with the materiality of the objects. So I would say “yes” to digital technologies as a medium for education, but not as the basis of an exhibition, at least if we are talking about an archaeological site. Maybe in a museum with another vocation it could be different. In any case it is not necessarily the case that digital mediums always work better than other formulas.



# POSTSCRIPT

BY GIOVANNA BARNI

I believe that the challenge of moving towards the construction of a capacity for systemic innovation is the real theme of this research; a capacity that should be conducted according to a vision of innovation not as exclusively regarding technology but as an inspiring and philosophical approach that affects all areas, ranging from the mission of the museum, to its skilled personnel and its organization, accessibility and its relationship with the public, the local context and the communities of reference. Within this scenario, digital culture should ideally be considered as widespread and it should therefore refer not only to communication and the technological tools used as accessories for a museum visit, or to multimedia exhibits and displays, but also to the redefinition of the mission of a museum and the consequent strategic redesigning that pervades all the processes that take place within a museum. It is necessary to move from a purely technical approach to a more humanistic approach that can define the new role of the museum in a constantly evolving context, and that focusses on the objectives of cultural growth and the financial sustainability

of the museum organization, while looking more critically at the opportunities and limitations that are inherent in digital technologies.

This present report moreover has the merit of highlighting the leap that is taking place from a static idea of the public of users to the creation of a community, understood as a wide-ranging and diverse collection of individuals and stakeholders who are participating in several different cultural experiences, thanks to the interactive experiences and the feeling of empowerment that they get from a visit to a museum, which are made possible by digital contents and technological means. A further step will be the extension of these contents and means to many other communities with which it is possible to establish relations outside the confines and limits of the museum, in a local context but also on a national and international scale. These will be local and thematic nodes linked to a broader network, and thus connected with local stakeholders, as well as with other cultural institutions, thanks to various platforms involving networks, dialogue, co-working and co-creation, which will guarantee gradually increasing levels of engagement, in order to

maximize the cultural and social impact of the museum. Over time this "inclusive" strategic approach will help to optimize management costs and investments in innovation, especially those of the so-called minor museums, by sharing systems for bookings, openings and special visits, in addition to training centres for teaching innovative skills, membership and crowdfunding platforms, and much more, thanks to public-private partnerships.

In this "systemic" direction, in the context of the discussion regarding skills and new professions, as well as looking more closely and precisely at the individual professional figures involved, the topic of organization has to be addressed. In order to be able to make a continuous contribution that can have an effect on the future of the museum sector, new professionals working in the digital field will have to be part of a process of organizational innovation and openness to the local communities, in the context of which they will work in informal and multidisciplinary teams, in which synergistic exchanges can take place between humanistic and digital skills, also involving internal and external contributions.

This process of transformation is above all cultural, but it also touches on the areas of business and technology, regarding which the figure of the Digital Strategy Manager will also be essential. Based on these premises, and also thanks to the reflections raised and encouraged by this research, it is clear that not only could Italy recover from the delays it has suffered in the digital field so far, but it could even develop and introduce a new and distinctively Italian modality of applying digital technologies to the sector of cultural heritage: perhaps a more humanistic way, which would go beyond the excesses and distortions caused by the use of technologies that tend to remove and substitute some of the most genuine qualities of a museum visit. This new way would be aimed at ensuring a more direct and rewarding contact with the works on display and with our cultural heritage, entailing specific learning objectives for encouraging knowledge, as well as more playful goals. It would be a more sustainable solution, focussing on replicable digital content and usable tools, rather than on cumbersome exhibits and displays that are sometimes very expensive to set-up and maintain.

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e-CF European Framework for e-Competence

<http://www.ecompetences.eu/>

eCult skills project and job-profile descriptions

<http://groupspaces.com/eCult/pages/project-results>

ICOM - International Council of Museums, Italia

<http://www.icom-italia.org/>

INAPP (ex Isfol) Occupational Portal

<http://fabbisogni.isfol.it/>

ISCO - The International Standard Classification of Occupations

<http://www.ilo.org/public/english/bureau/stat/isco/>





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