

Museum of the Future

Insights and reflections from 10 international museums

ERASMUS+ / SECTOR SKILLS ALLIANCES

Mu.SA: Museum Sector Alliance



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The Mu.SA “Museum Skills 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 as-

ist 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.

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Mu.SA Consortium

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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Introduction

The internet is today what electricity used to be in the last century: a big accelerator of innovation. Every day in the world approximately 300 billion e-mails are sent, 5 million posts are written, more than 500 million tweets are posted and 20 billion webpages are viewed in the main search engine alone (in 1997 the search engine Altavista examined “only” 8,000). More than half the world’s population regularly accesses the Internet (10% more than 2015)¹, and uses a smartphone, while more than a third has an active social media account (21% more than last year). More than one in five people in the world have purchased at least one item online in the past 30 days, and also the number of dwellings connected to the net is substantially growing. In Europe, there were 83% in 2015, 13% more than in 2010². These impressive figures depict a changing society, where new technologies permeate all aspects of life, often by modifying consumption patterns and products. In the music industry, the advent of digital technology has revolutionized the relationship between artists, record companies, music retail stores and consumers; and new business models were born. Music is still made of notes, but in the 70’s its medium was vinyl, in the 80’s it was cassettes, in the 90’s it was CDs:

then came mp3s, downloading, streaming, new devices (PCs, iPods, mobile phones) and selling platforms (iTunes, Google Play, Amazon, Spotify). The role of the major companies, which once led market dynamics and set the balance in the music industry, has been downsized and re-defined: in the years between 2001 and 2013 the revenue of the global industry went from 27.6 to 15 billion USD³. Old devices and old markets (like vinyl, for example) have not disappeared, but they now live in a completely renovated ecosystem.

Music is just one example of how digital technology can change the game. Texts, which once would be read in books bought in bookstores or in the newspapers bought at the newsstands, are now read on the Internet or downloaded on Kindle e-readers, tablets or mobile phones. Bookshops have not disappeared, but giants like Borders, the second largest chain in the USA, have closed down. Platforms like Booking have revolutionized the way trips and holidays are organized, to the benefit of consumers and to the detriment of traditional travel agencies. Kodak, one of the few companies that, together with General Electric, was on top of the rankings for financial capitalization for most of the last century, has disappeared within only a few years, not because people do not take pictures any more,

but because technology has given us new tools: digital compact cameras and mobile phones.

What will happen to museums when digital technology shows its full potential? What features will the museum of the future have? How will it seize the opportunities offered by digital innovation? What competencies does this industry need to keep museums relevant from the twentieth century to the present? To understand what role the digital driver is playing in the modernization of the industry, we asked these questions to ten internationally renowned European museums, where varying types and sizes of collections are conserved.

The liquefaction of hierarchies and social functions leads museums to open up; they are no longer closed systems as they used to be in the twentieth-century, but parts of wide systems of scientific, cultural, and territorial relationships. Users are no longer just consumers of cultural products, but they are becoming active subjects of content production and conveyance. The museum of the future either will be a collective work or will not exist. It will be developed and co-created with the larger communities, which will support it and share decisions on it. In this transition, digital innovation provides the infrastructure that multiplies the opportunities for exchange, accessibility

and participation.

Museums have begun a long process through which they are adjusting themselves to these new dynamics, in favor of more horizontal systems and new communication languages. At one time, these cultural institutions used to display objects. Today, they connect the multiplicity of ideas and the knowledge that different peoples have developed based on these same objects. The task that museums are now expected to carry out, on-site and on-line, is sharing, inside and outside, collections and various contents generated by artifacts.

1. Where is the museum of the future heading?

Digital culture modernizes museums’ vocabulary; **sharing** is definitively one of the keywords of the future. Sharing collections and spaces, creating **connections with new audiences; even those apparently distant. Sharing means opportunity for growth** and it represents a tool of indirect marketing, useful to broaden the audience.

Since the **centrality of the public** is more and more important, the kind of experience that museums can propose to its visitors, on-site and on-line, becomes the core of their cultural offering. Extensive knowledge of their public is the essential element to

¹ <http://wearesocial.com/it/blog/2017/01/digital-in-2017-in-italia-e-nel-mondo>

² Cultural Statistics 2016, Eurostat.

³ Data refer to trade revenues, IFPI Report 2013.

best satisfy the demand for **cultural contents that can be enjoyed through experience**, where the cognitive factor combines with the emotional one. Visitors, for their part, will be attracted by museums' abilities to **tell stories that they can empathize with**, presented with an **intimate and authentic point of view**, able to affect people not only through thought, but also through emotions. Here comes the second word: **storytelling**, the means by which modern learning is conveyed today⁴. Since the aim is to facilitate a new way to create long-term involvement in the public, the museum of the future will opt for a virtuous mix of direct storytelling (the museum narrates itself) and indirect storytelling (visitors narrate the museum), in favor of a **participative storytelling**. Individuals, both the public and its staff, are encouraged to create their own stories and connections with the museum itself and the history it represents.

At the same time, in order to help citizens orient themselves in the countless scientific and pseudoscientific information that they are immersed in daily, museums today are expected to meet the real needs of society: **building bridges between various disciplines and types of knowledge**. On the one hand, citizens are recipients of information; on the other, they are

protagonists in the processes of cultural content production, thanks to new forms of interaction, services and learning methodologies. The museum of the future is, therefore - here we come to the third keyword- **co-created with people**. It is more and more a collective work, in the model of web 2.0, fostered and promoted by local and scientific citizenries. This is how the social value of museums creates **generativity in the communities**. This is how museums become places to visit from an early age, in everyday life; like cinemas, parks, and supermarkets. To sum up: not a temple dedicated to the past, but a living institution that looks ahead, able to stimulate the participation and the creativity of its audience, on every level. The aim of the museum should be becoming important for society, being an inspiring place, where the production of new meaning is stimulated. The advantage will be total: of the individual and of the entire community.

In short, the museum of the future will be more emotional; people will be able to connect with it in different ways, and **the physical and digital dimensions will be more and more interconnected**, being two sides of the same coin, both for the visitors and the staff.

2. How is digital technology changing this cultural institution?

Digital technologies are a **means to achieve the mission of the museum**. That is why they affect all aspects of the museum's life and also the work of all the staff, although to varying degrees.

Everything starts with the **digitalization of the heritage**; the database from which the museum draws all its contents. Thanks to 3D scanning, it is now possible to have high-level digital archives, which allow fast and easy access to a range of information on the stored collections. All stakeholders benefit from it, both the internal ones (for the organization of exhibitions, the choice of possible acquisitions, the evaluation of the assets, etc.) and the external ones (for research, loan requests from other museums, etc.). Some museums have already made much of their heritage public; many others are searching for the most suitable display system to put their digital catalogue online. Sometimes they resort to existing software; in other cases, however, they decide to develop ad hoc products, in close collaboration with their suppliers. In the second case, the museum staff plays an important role in defining the criteria for the development of functional systems. The integration between the demands of the museum and the solutions proposed

by the IT companies often takes a long time, because combining the specific requirements of the museum and certain software standards is not always easy. The development of new technologies not only changes the work of archivists and conservators, but also that of the curators, who are more and more engaged in the collection of digital works. **Internet art** has been growing in the last years, and some museums have already launched new collections that can be accessed only via the Web.

Heritage is not the only thing that is becoming **more and more digital**. **Communication** is as well. Communication is expected to combine cognitive and emotional content, to meet physical and virtual visitors' needs. Thanks to social media, museums can learn more about their public, both during their visit and from home. They personalize content and language, according to the target that they need to reach. Age, gender, origin, education and interests are all necessary information to develop adequate communication. In addition to the visit at the museum, **big data analysis and user profiling** can also make communication unique and personalized. This provides information about users' opinions and preferences before, during (through IBeacon) and after the visit (physical and

⁴ Carson G., The End of History Museums: What's plan B?, in The Public Historian, Colonial Williamsburg Foundation, 2007.

virtual), to prepare a cultural offer ad hoc. What a social media team can do today goes beyond the traditional communication needs and a greater personalization of content. The work of these big data analysis professionals fosters the everyday life of museums on the web, connecting all the activities and the knowledge that museums want to share. Thus, their reputation grows, together with their ability to produce new cultural content. **From communication to digital use.** Equally important is producing content by **creating additional digital tools** for the most diverse situations: to prepare exhibition halls, to make the visit more interesting, and to organize events. Developing additional digital tools is essential to give visitors, in an immediate and intuitive way, all sorts of information that can bring them closer to the way the artists work, to their personal idea of art, to the environment where their work developed, and so on. The means used so far do not allow non-expert people to really feel involved and fully grasp the artwork and its meanings. For this reason, some museums have created internal departments for **audio-video production**. Nevertheless, it is still important to cooperate with specialized technicians, who are always updated on the constant changes of the world of image and sound. Even **augmented reality and game design** can have a revolutionary role. By “giving life” to works of art in a totally new and unique way, they offer

many opportunities that are still to be explored. In designing immersive environments and applied games, it should be taken into account that the museum is a place where the visitor looks for both evasion and cognitive development. Gaming also promotes active participation, interaction among users and loyalty, before and after the visit. The choice of the appropriate technological means depends on the purposes that the museum wants to achieve and on its financial resources. The aim is, anyway, the same: to develop innovative techniques that do not merely provide users with notions, but facilitate their learning through an emotional involvement. **Trivialization of technological tools must be avoided:** unless they are part of a wider strategy, they may become useless gadgets unable to create any added value to the learning experience. In addition, in contemporary museums, digital technology is essential, but it must not hinder the perception of the artifact and the unique empathy that only its materiality can generate. In the digital society, the museum should still be the place where the user finds an intimate and direct connection with the conserved objects. Usage of tablets or augmented reality, for example, should not prevent visitors from fully grasping the potential of the objects. An experience filtered through a screen could take place anywhere, while the experience of connecting with the artifacts of a museum is unique. We

need, therefore, a technology that is there, but you cannot see it; something that does not distract, but, on the contrary, facilitates engagement with the object. We need, moreover, a technology that does not create a gap between digital natives and the other different kind of audience, but that is “**responsive**”; **able to respond differently depending on the user.** Digital tools are used not only for communication and entertainment, but also for **marketing and Customer Relation Management.** Many institutions are investing in the development of applications, with the aim of improving marketing, both to reach visitors during their visit to the museum (for example, notifying them of events taking place in the same territory), or, conversely, to call them to the museum through geo-fencing, once they arrive to a tourist destination. Finally, digital innovation can **enhance the managing processes** of the museum life, starting from innovative **filing systems** (not only of collections, but also of financial and administrative documents), to all those activities and **indicators that enable museums to evaluate** how they are perceived (i.e. user satisfaction) and later revise strategies on the basis of the achieved results. Digital innovation makes measurements more efficient and

standardized, which improves management and administrative processes. For example, an integrated digital ticketing system that allows purchasers to buy and book different on-site and on-line services, not only reduces costs, but also attracts users and makes it easier to access their data and contacts. All of this empowers the monitoring of performances and the understanding of the public. As a result, on the basis of the collected information, a wider offer of innovative services can be provided.

3. What could help museums to face the digital challenge?

Using high technology intensively in contemporary museums means turning to specialists for the development and the management of software (for the organization of exhibitions, the conservation of collections or the technological management of the structures in modern buildings). Besides some technical skills, which can be mostly outsourced, the spread of digital technologies also requires strategic skills that should be developed within the museum, especially to produce content for the audience. To keep up with the changes taking place, now, more than ever, the **museum staff is expected to produce different kinds of digital content:** videos,

photos and texts for social media or blogs. This involves not only the digital communication staff, but rather the **entire museum staff**, from the receptionists to the curators. Those who want to control the change or those who simply fear the change can sometimes hinder the spread of these skills. It is, nevertheless, fundamental. If the **staff's knowledge and expertise are employed**, developed and enriched according to the new requirements, **better results in content production are obtained**, the **level of authenticity of the narrations is higher**, and therefore, the impact on the audience is bigger. To date, the professionals of this industry have still considerably different levels of digital expertise. Depending on their role, some use advanced technological tools, other are much less skilled. **It is very important to instill greater confidence to all museum staff about the digital world, especially among those who do not hold managerial positions and are not engaged in activities related to new media.** Many of these people use technology in their private lives, but they are not used to doing it at work. For this reason, they should be encouraged through workshops, training, multidisciplinary and interdepartmental activities. The creation of **transversal work teams** that involve different departments is very useful and creates a greater synergy between professionals of IT, communication, curatorship and teaching. Staff training should be also encouraged

through the constant sharing of best practices, both inside and outside the museum. **Using digital platforms is essential** to have a constant dialogue with the outside world and **widen the circle of contacts**. The goal is to **create more and more established networks**, going even beyond the museum industry to include, for example, **strategic partners, such as software and hardware developers, universities or centers for technological innovation**. These alliances may be useful to solve important issues for the digital museum, such as the **long-term preservation of digital content and the technological obsolescence** of the tools used.

4. Factors affecting the development of a digital strategy

The digital strategy of a museum depends on many factors: **financial resources, but also open-mindedness and the right leadership able to manage the change**. The clearer the definition of objectives and priorities, the more involved the departments of the organization are in the implementation of the change. In fact, no digital product emerges if significant process innovations, new behaviors and methodologies have not been promoted before. It is necessary to inform all the museum employees and collaborators about the potential and benefits that digital technology can generate in the institution's management. Results will be

achieved only if all of the staff identify themselves in the museum's mission and share the tools chosen to achieve it, digital or non-digital. **Final goals must be stated very clearly and achieved through a digital work.**

Since the improvement process is continuous and incremental, in order to consolidate the positioning of the museum, it is crucial to conduct **extensive and constant market research, and to decide what kind of digital product is worth investing on**. This prevents the institution from wasting resources for "trendy" products that are little in line with its overall strategy. Moreover, using too many digital products can have a misleading effect, compromising the users' understanding of the museum's mission. At the same time, **investing in big data analysis to measure the impact of the actions** is a way to constantly assess the quality of the cultural offer and its continuous improvement.

The **secret** for any successful digital strategy is to **increase the accessibility of their collections, both on-site and online**. To improve on-site accessibility, the museum should invest in **technological solutions that create equal opportunities** for the benefit of specific targets; for example, disabled or economically and socially disadvantaged people. From this point of view, the

museum offer is still lacking and needs to be better structured to meet an already existing and potentially growing demand. As for the on-line part, **investments on digital infrastructures are critical**: firstly, **on the website**, the cornerstone around which the museum's brand should be built. The stronger the brand, the higher the chances to attract visitors. Investing in the website is important not only to improve the museum's reputation, but also for its assets, in terms of business. The better the quality of the platform, the higher the possibility to transform the users' virtual tour into another action, like subscribing to the newsletter, purchasing a ticket or merchandise. Investing in a good website means generating traffic and increasing the business volume. At the same time, **having a good strategy on the use of social media** is just as crucial. The goal is to improve not only the performance indicators, but also **the general engagement of the local communities**. Therefore, it is necessary to know the needs of the users in detail. As previously mentioned, it works if the whole organization, not just the social media team, is involved in the production of digital content. At this stage of the transition, then, the most effective solution would be to create **a leading group**, which crosses the involved departments (conservation,

communication, ICT, marketing, teaching) and encourages the whole museum staff.

As for the accessibility to online collections, **copyright can sometimes be a large limiting factor**. Museums very often purchase artworks without acquiring all the rights to use their reproductions. In some countries, like Finland, where people are particularly sensitive to the topic, public funding covers the cost of copyrights, which museums could not afford alone. However, this is an exception. In addition, the lack of clear and transparent rules on copyright of digital-born works and collections (Internet art), makes it difficult to define the indexing methods for this kind of cultural heritage.

5. Opportunities for small museums

Most of the museums in the world are small. Because of their reduced resources, they are affected much more than the big museums by the current global economic crisis. In some European countries, the majority of museums are dependent financially on local governments (which sometimes results in less autonomy in the production of digital content). Digital technologies, however, offer new solutions at affordable costs, especially to the advantage of the local government financial backers. Even if for many small museums the costs of developing and managing a website are

unsustainable, **the spread of social media has greatly reduced the barriers of access to digital communication, providing very powerful tools for the creation of networks**. For small museums, even more than for big museums, it is essential to abandon the traditional model of working in a “closed” world. In the digital world, even the small niche museum can find its target audience or other niche museums across the world with which to collaborate and create projects. It is trite, but **“united we stand, divided we fall”**. Today, even small museums are called upon to cross their boundaries and to look beyond them, to develop new activities to increase their networks and to establish strong alliances with other museums, more or less geographically or thematically close, but also with other institutions outside, not belonging to the museum industry. Collaborating with universities for the development of digital skills can create, for example, a breeding ground for the formation of new generations of digital professionals. More generally, building solid networks of support and collaboration, inside and outside of the industry, allows more effective networking in the search for resources, and provides an **opportunity to create moments of informal training with the big museums, when it is possible to share their knowledge and compensate for the lack of experts**. In small museums, in fact, because of the lack of human resources, every person has

to carry out several tasks that involve more than one discipline.

Thanks to the effects of technologies and networks, small museums can benefit from the “Long Tail” effect, theorized by Chris Anderson to explain the commercial and economic model implemented by Amazon and Netflix. For these giants, the volume of total sales of less popular products exceeds that of very popular products. Anderson concludes, therefore, that an unlimited offer creates an unlimited demand, mainly for the benefit of niche products⁵. In the museum industry, digital technologies also allow smaller museums to reach the global market and, if their networks are solid, to get more visibility. Therefore, while the mass culture of consumption is transforming into an archipelago of niches that everybody can reach thanks to digital technology, the attention and interest in big museums also positively affects niche museums, if these are included in territorial communication systems that widens the user’s choice.

Finally, **reasonable resource planning** could be extremely advantageous. When financial resources are scarce, it is better not to disperse them: it is preferable to choose fewer activities to carry on as best

⁵ C. Anderson, *The Long Tail, How Endless Choice is Creating Unlimited Demand*, Paperback 2009.

as possible, in terms of work quality and development. In order to choose the right platforms and tools, it is important to design a strategy and focus on a particular kind of audience.

6. Skills and profiles that facilitate the digital transformation of the museum

Together with investments and digital infrastructures, staff competences and interest can set more than anything else how quickly the museum will move in the digital world. What the industry needs is a good **mix of competences**, ranging from art history to digital communication, from online marketing to cultural management and information technology. Even more useful is the intermixing and collaboration among different professionals who mutually exchange their expertise.

The digital skills essential to address the current changes are related to communication, big data analysis, content production and user experience. As far as **communication** is concerned, senior social media specialists are required for a strategic use of social media. Only experience can promote the development of strategic skills needed to get a good level of engagement. Nevertheless, in most museums, junior

profiles are the majority.

Data analysts are crucial to read the information collected about the users and transform them into activities and new priorities, in support of the museum's strategic choices. The museum needs all the necessary professionals responsible for the **production of digital editorial, video and photographic content**. It is important that the content is relevant to the context and that the channel used is meaningful for the addressed public. Finally, the **user-experience** is essential to implement any digital project and product, because the on-site and on-line visit to the museum is to be conceived as an experience for the user. It is, therefore, useful to have personnel skilled in designing systems with which users can interact effectively and naturally and to know how different audiences relate with digital technologies, as well as to have good **interaction, digital and graphic design skills**.

Nevertheless, digital skills are not everything. To work on digital collections and put a collection online, for example, it is necessary to have **copyright experts**, who know how to proceed confidently in this field. In addition, the museum staff often mounts resistance to the implementation of a digital transformation plan. That is why it is important to have some **soft skills**. People sometimes refuse additional tasks, and they are afraid of being immersed in a fully digital world. As technology advances in everyday life and in interpersonal relationships,

many things are changing and people are gradually realizing that their personal growth depends on their development of digital skills. Still, to make them accept the change, the best thing is to present a clear and detailed strategy about what to do and where to go. A good **leadership**, someone who knows how to encourage and coordinate the work of motivated and charismatic people, is very important. For example, the results of using social media can largely differ, depending on whether the people in charge have the **charisma, communication and persuasive skills** to generate interest and loyalty within the community. Not only that: **openness to changes and to lifelong learning and sense of initiative** are essential in all departments, at all levels. The staff of a museum should look beyond the cultural sector, taking an interest in everything that concerns the economy and society. They should be curious enough to go beyond their field, and to understand what happens in the world, following the latest developments in all sectors, including the digital one.

Sharing is becoming more important than possessing. This concept is behind the choices of several cutting-edge museums that made their digital collection available without restrictions. They were inspired by some widespread social dynamics related to sustainable transport (from car sharing to Uber) and low cost tourism (from Airbnb to experiential tourism). This is an

example of how contamination between different fields can be strategic and how working with different partners fosters new ideas. The key is, therefore, planning strategically, and looking beyond short-term goals. Moreover, working with people from different backgrounds is desirable, both inside and outside of the museum. The **ability to work in teams** is crucial, as well as being open minded and keen on collaborating.

The quality of work largely depends on interest. Skills and dedication can be developed only if there is passion. **Stimulating interest and passion for digital technologies is, therefore, the key to promoting change**. The perspective should be that of "gardening management"⁶, where the management's objective is the development of the individual: the development of an institution depends on the development of the individuals who make it live every day with their work.

The profiles needed in this moment of transformation should be able to **combine tradition and innovation**. They have developed curatorial, scientific, and editorial skills, and, at the same time, are

able to combine "traditional" knowledge with a thorough knowledge of the new digital media. In most cases, it is preferable to **train the existing profiles to develop new digital skills**, rather than hiring new personnel, especially considering the limited financial resources available to the majority of cultural institutions.

Today a **key figure** is emerging in the promotion of a digital culture and the acquisition of digital skills necessary to modernize the museum: the **Cultural ICT Consultant**⁷, who is responsible for the museum's digital strategy and the financial planning of technological resources. This profile is strategic for all the museums that want to take up the challenges of the digital transformation. Not only do they know everything about planning and managing an effective digital communication, but they also play a mediating role between the museum and the outside world, being able to talk to the different stakeholders, whether they are partners to work with, or different online and offline communities.

⁶ <http://www.ilgiornaledellefondazioni.com/content/la-vera-risorsa-dei-musei-italiani-sono-le-sue-persone-perch%C3%A9-il-denaro-segue-le-idee>

⁷ As described in the european project e-CULT Skills, http://www.e-jobs-observatory.eu/sites/e-jobs-observatory.eu/files/eCultSkills_Role_profiles_EN.pdf



Hermitage



Website:

www.hermitagemuseum.org
www.virtualarchaeology.ru

Size/n. employees:

Large more than 50

Main Channels:

Facebook - Twitter - Instagram -
Wikipedia - Youtube - The Russian
VKontakte

Type:

National

Type of museum and collections

Archaeology - Historic Building/Site -
Art - History

Museum's annual attendance

3 millions visitors

“Digital is useful to create immersive environments that involve the audience. But a museum is not Disneyland: the user does not only look for an escape, but also for a cognitive development. This is the reason why we design our immersive environments along with spatial air force psychologists and professionals, specialized in augmented reality. Hermitage visitors are like researchers that prefer the museum to outer space as a place of exploration. Not surprisingly, one of the small planets in the Pisces constellation discovered in 1978, the number 4758, has taken the “Hermitage” name since 1997”

Daria Hookk
Senior researcher at the Department
of Eastern Europe and Siberia Archaeology



1. What does the future hold for museums? How is the sector evolving? How do you see museums in the next 10 years?

Nowadays, despite the economic and political crisis, the number of museums visitors is growing. They embody the principals of stability and security, thanks to the sense of hope for the future they are able to communicate. Once these cultural institutions exhibited objects. Today they show that the plurality of different people's ideas and knowledge developed from a single artifact. Expose this multiplicity of content is a very interesting and creative process. Of course, we are not just talking about the European public, but also about the Oriental one. Today East and West can try to understand each other starting from the different meanings generated by the same

cultural products.

2. How the digital environment is affecting the museum world?

It is as if museums were to adapt to entirely new climatic conditions. Using a parallel taken from mathematics world, a discipline sometimes easier because made just by numbers, today the activities of a museum recalls the “convolution”, which is the integration of two different functions. In the case of a museum: the production of shared meanings (cultural function), on the one hand, and financial sustainability (commercial function), on the other. In practice, traditional and new activities converge thanks to innovative technologies, which help the museum and its stakeholders to reap greater benefits from its activities.



Among the museum aspects more involved with the digital transformation, first and foremost, there is the management of the digitalized heritage, because a database it is a tank from where to draw all the museum content. On this issue, the Hermitage has collected all data related to its immense heritage. However, it has not yet solved the important issues related to the storage. Today a lot of data go missing in the exchange of software, computer and projects. We are aware of some European programs that could help us at preventing this loss, but our Ministry of Culture has been working for several years in the development of appropriate software. It is a very long process that, over the past 20 years, has experienced leaps and setbacks. In recent times, it seems that something has freed up.

Then there is the digital communication, able to capture the users' attention for its ability to combine cognitive and emotional content. Only with a communication of this kind, the museum can attract its audience. The educational services may also use different several gadgets through which provide users with various types of content, improve the guides' work, enrich users' visit and enable customized itinerary. Finally, with regard to the realization of exhibitions and installations, the digital is useful to create immersive environments that involve the audience. But a museum is not Disneyland: the user does not only look for an escape, but also for a cognitive development. This is the reason why we design our immersive environments along with spatial air force psychologists and professionals, specialized in augmented reality. Hermitage visitors

are like researchers that prefer the museum to outer space as a place of exploration. Not surprisingly, one of the small planets in the Pisces constellation discovered in 1978, the number 4758, has taken the "Hermitage" name since 1997.

Around the communication issue, the museum can count on an excellent website. However, when compared with other examples of excellence in the country, such as the Moscow Pushkin Art Museum, it could, of course, be better. Our colleagues in Moscow work very much with a view to the audience development. Their web system, made of a large platform in which coexist a set of satellites sites, is more functional, so much so that their users surf longer and in more advanced ways than ours. We also use different social media, per their specificities. The most popular one, in our experience, is the Russian VKontakte, while Facebook in our country is used more by business men. Instagram instead is great for sharing photos. Vice versa Twitter is probably the least suitable for museum communication. More generally, about the use of the social media, we realized that they really work if handled by charismatic people. Let me take the example of Instagram: our most followed pages are the ones of our photographer who reached millions of followers, thanks to his talent and his great charismatic ability. Through his profile, the museum communicates its contents. Alongside the digital skills, transferable skills such as this are important.

Finally, equally important it is the analysis of big data. In this case, the Hermitage can count on a dedicated department, which constantly collects feedback

from our visitors, through the compilation of specific questionnaires. This small department, called "Social Studies", now has 4 people, helped by our volunteers when it comes to collect data. Thanks to collaboration with colleagues of the Moscow Pushkin Art Museum, it also collects the opinions of our virtual visitors. What has emerged is that there are differentiated audiences not only according to the age, but also to the genre. If women prefer to visit our live collections, men opt more easily for the virtual tour. Considerations to be taken into account for those involved in writing content for our web pages and for those responsible for the contents in the building.

3. What would help museum professionals to better face the challenges when trying to embrace the digital dimension?

For the Russian museum sector, fundamental is the activity carried out for more than 10 years by non-governmental organization which organizes the annual conference ADIT, for the promotion of information technology in museums and cultural institutions. It is during this conference that since 1997, in various cities have been addressed many different issues, different from digitization of the museum heritage, to the development of innovative applications. The aim is to support those working in the sector, specialized in the most varied fields, that best meet the new challenges,



cooperating with each other and exchanging good practices. From 2013 ADIT has adopted a more operational format: in the several sessions, the various participating museums present real issues subsequently discussed in public, to find innovative technological solutions. Among the supporters of the event, there are also several software and hardware producers, happy to present their products in a display capable of



gathering the entire national museum sector

4. What about smaller museum: which opportunities do they have to face the challenges when trying to embrace the digital dimension?

The state museums of small and medium size have budgets too small to be able to face this challenge alone. For them, a possible solution is cooperation with universities: if museums have content and creativity, universities have the necessary technologies. A collaboration of this type can create fertile ground for the development of new digital professionals generation, that in the future may be attracted by the preservation of cultural heritage.

5. What are the most important emerging job profiles related to the digital aspect of a museum?

In my opinion we have to train the existing profiles with new skills. An example out of many: today the curators are trying to develop innovative content for virtual visits in the same way they do for exhibitions in museums, ignoring the main core of the virtual space and the computer game. All this happens at the expense of the results. What the museum should do now is to invite specialists of the augmented reality to acquire the skills that are lacking in this area.

6. How do you recruit staff in your museum? What is your ideal candidate?

The key word is perseverance. Young people today believe that it is enough to be creative and expect immediate results. It is a common mistake in the era of rapid and high-speed decisions, which leads to a misunderstanding. If you're ready to become a "ermitazhnik" (part of the Hermitage team) in just 25 years, then this is the right job for you!





Kiasma Museum of Contemporary Art





Website:

www.kiasma.fi
www.kansallisgalleria.fi/en

Size/n. employees:

Large more than 50 (The whole FNC organisation)

Main Social media channels:

Facebook - Twitter - Instagram -
Wikipedia - GooglePlus - Youtube -
Blog

Type:

National

Type of museum and collections

Art

Museum's annual attendance

Kiasma: 200,000
The Finnish National Gallery: 500,000

“Different open platforms could be very useful for learning. For me, Twitter was a revolutionary thing to discover. It opened my work and expanded my working community outside the walls of Kiasma.”

Sanna Hirvonen
Senior Planning Officer,
Public Programmes Department



Photo: Finnish National Gallery / Pirje Mykkänen

1. What does the future hold for museums? How is the sector evolving? How do you see museums in the next 10 years?

I work in the public programmes sector in Kiasma and I'm interested in audiences. I think that over the last 10 years museums have increased their audiences and become more audience centred. We understand and think of our audiences better than before. Maybe it has to do with financial resources - many museums have to do more with less. We have to attract visitors. However this has helped us to think more about our audiences' needs: to know who visits us, and what people's actual needs and motivations are. We are going more towards that direction. I do believe that museums will continue to be important platforms to work on our identity, our history and to help us understand each other

and ourselves. From the digital point of view, I think, digital and physical museum experiences will be more intertwined and digital will be seen as a natural part of both experiencing museums and working in a museum. The online experience will be more and more central as part of the museum visit, and before and after it.

2. How the digital environment is affecting the museum world?

Digital technologies are definitely influencing museums and our working life. I think when relevant technologies are discovered and used, it makes the work much easier: from using online calendars and working spaces - which, by the way, it has worked very well in our museum - to collection digitisation and management. According to an international report comparing

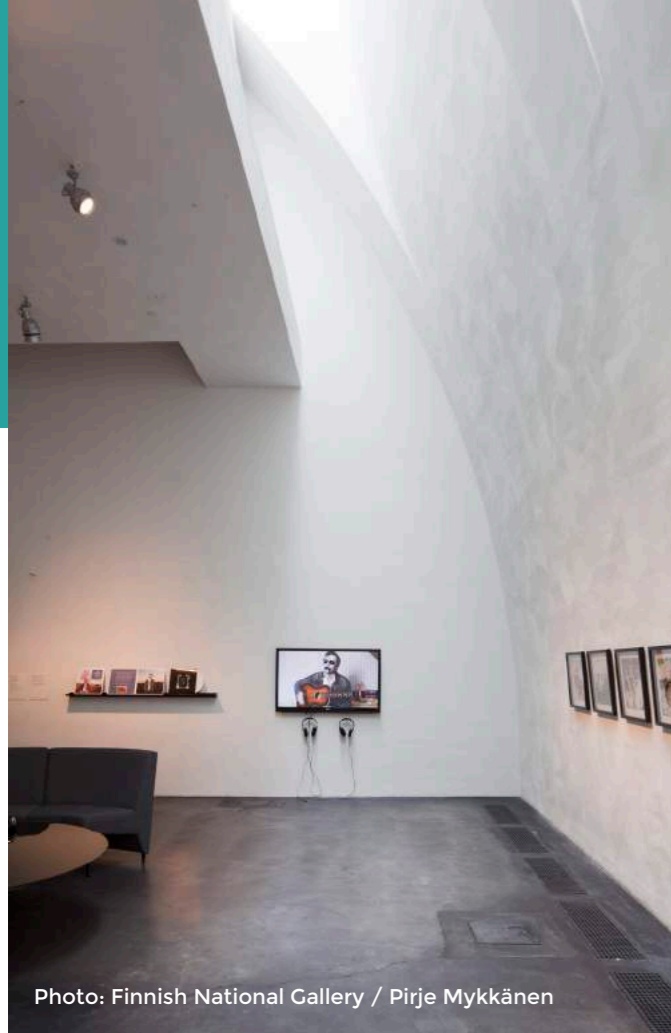


Photo: Finnish National Gallery / Pirje Mykkänen

openness and digitisation in the GLAM sector in different countries, Finnish Museums are doing well in digitisation, but not necessarily in opening their collections to public use yet. The digitisation is well taken care of in our museum, too. A topical challenge to us is working with art that exists online only. We have just launched a new collection of online art, and the skills involved in taking care of online art are a new thing that we need to think of. To be able to work on digital collections, and to open up your collection digitally, you also have to have expertise on copyright laws. We are lucky to have a lawyer of our own, specialised in art. But talking about museums and digital in general –

often it's not about digital, it's about your mission and what you want to achieve. We have to understand where we are going. You can recruit new staff and buy skills you don't have in-house, but you need to know what to buy and what to require.

3. What would help museum professionals to better face the challenges when trying to embrace the digital dimension?

I've noticed that learning together is often motivating. It's a good idea to encourage active and knowledgeable members of the staff, encourage peer learning and share good practices, internally in the museum and also between museums. Different open platforms could be very useful for learning. For me, Twitter was a revolutionary thing to discover. It opened my work and expanded my working community outside the walls of Kiasma.

4. What are the needs of a museum regardless the size to face these challenges?

I think a key thing to understand is that digital is not a value in itself, but it's a tool for doing what the museum is there to do. Digital doesn't just come; you have to make decisions on what tools and ways of working are useful and valuable to you. So digitalise when it makes sense and makes things better, and choose tools that are usable and serve your goals. Clear goals are important – to understand why we are doing this, in which direction we are heading.

5. How would you rate the efficacy of your digital strategy today? What challenges are you still facing (if any)? What are the key successful aspects?

Kiasma is part of the Finnish National Gallery. We don't have a separate digital strategy, but digital is embedded in the strategy of the Finnish National Gallery in many ways. It says, for example, that the Finnish National Gallery creates wide possibilities to experience, look at and understand visual arts both nationally and internationally and in digital environments. We enhance both the digital and the physical accessibility of our collections. Our activities reach an increasing audience nationally and internationally and in the digital environment. We advance the use of open data and provide high quality digital materials. These are clear goals: to open up and make our collections available digitally, and to address our audiences digitally as well. So digital is one means to bring art to our audiences.

We also have a digital services steering group that works across sectors: collections, ICT, communication and marketing are included in this group. It's one way to take care of the digital as a whole.

I think the key to a successful digital project is that you have a devoted leader, obviously, and a team of different professionals with digital and

other skills. You have to know the substance as well as technology, and understand the needs of your audiences.

One of the challenges is that you can't do everything yourself and you have to buy services. Sometimes, as a consequence, you can't serve the audiences as smoothly as you would wish. The processes might be a bit clumsy. Copyright of visual arts is another thing that puts limits to what you can do. Luckily our Ministry of Education and Culture supports us by paying copyright fees for the Finnish artists whose work we have in our collection. This makes it possible for us to show our collections online extensively. We have projects on open data. We have opened our collection metadata on a CC0 licence and we have started slowly to open images of artworks (obviously not of contemporary art but of older art housed in the two other museums of the Finnish National Gallery).

6. In what area museums should invest?

It's hard to name one, or two or three areas. It depends on the goals that each museum has, and on their audiences. It's good to offer online what you have and share materials and data with open licenses when possible. Museums in Finland and internationally have woken up to social media. It is one way to take care of your relationship with your audiences. Museums also have online audiences: I don't think, for example,

that the people that come to Kiasma are our only audience. There are also online audiences that might never visit the museum because they live elsewhere or are not that much interested in contemporary art. Not everyone has to come, we can offer them content online and be present in their lives through the platforms they use anyway.

7. What digital competencies or soft skills are needed to facilitate this change?

I think almost any soft skill is good. For example team work: to be able to work with different people with different backgrounds. To be able to network online, learn from others; find ideas not only from your own sector, or your own country; to be able to learn from outside the box. Being able to facilitate collaboration face to face and through digital tools is useful. The understanding of audiences - having real interest in what they do, what motivates them and what they are interested in, it's necessary if you want to create something for (or with) the audiences. To design digital services you also need to understand usability and know your audiences' relationship to digital. I think in general it is good to be open and collaborative. To take steps with digitalisation, it's also good to understand the advantages of open data. You also need knowledge of copyright laws and open licenses.

To reach audiences through digital services and platforms you need to understand the spirit and the idea of each of those platforms and the way

people use them. Serve content that is relevant in that context and works in that channel, and most of all, content that is meaningful to your audiences. Nowadays many cultural institutions understand that to reach people online we need to go where they are - on social media and Wikipedia, for example - not build our own "museum portals".

8. How do you recruit staff in your museum? What is your ideal candidate?

It depends on the position, of course. Lately we have hired a digital media manager and an audio-visual technician, and are currently hiring a curator for our collections. All of these recruitments include a digital dimension, and digital skills are needed. In addition to the skills, it is important that the candidate shares the values of the Finnish National Gallery: together, transparent, professional.

9. What are the most important emerging job profiles related to the digital aspect of a museum that are lacking in the museum sector today?

It's hard to say, because there are different museums. Some have positions that others don't have. Some museums have data managers, for example. Something that comes to my mind is a community manager. This is a person that works with the museum's online communities and social media platforms. In my museum this role is shared between many people and it works ok -

but real online presence requires more than just status updates. Putting more resources to online interaction with audiences is something museums might want to consider in the future. In larger organisations there can also be internal community managers. A Web-editor is a role that some museums have - putting more emphasis on producing online content that serves their audiences.



Photo: Finnish National Gallery / Niina Vatanen

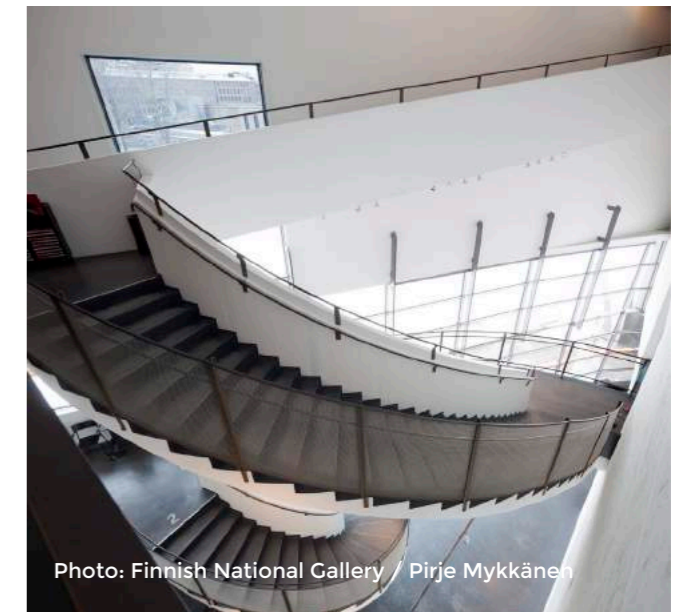


Photo: Finnish National Gallery / Pirje Mykkänen



MAAT

**Museum of Art,
Architecture and
Technology**



Website:

www.maat.pt

Size/n. employees:

Small/medium 21-50

Main Social media channels:

Facebook - Instagram

Type:

National Private

Type of museum and collections

Art - History - Science and Technology
Centre - Architecture

Museum's annual attendance

364.000 in 2016

“This is one of the great challenges of contemporary art: so far, traditional means such as synthetic texts of explanatory panels tried to explain to users the artist’s work, their personal idea of art, the ideas that come into shape in the work. The real challenge is to transfer this information into the most intuitive and tangible ways, that the development of digital technologies makes it possible. Augmented reality can have a revolutionary role in this, managing to “bring to life” the art works in a totally new and unique way”.

Pedro Gadanho

Director of MAAT, the new museum of Art, Architecture and Technology, in Lisbon.

Previously he was a curator of contemporary architecture at the Museum of Modern Art, New York.



1. How the digital environment is affecting the museum world?

The transition to digitalization offers new opportunities and new problems, which concern both the world of artistic production and fruition. Regarding the production, my previous experience at the Department of Architecture and Design at the MOMA in New York is enlightening. In those years, together with my team, we wondered for a long time on an issue which I believe will be increasingly stringent in the future, for many museums in the world: how to ensure the preservation of data about digital projects? Architecture, in fact, perhaps more than other creative sectors, has experienced a rapid transition from paper to digital, as regards to the methods of work. As such, we found ourselves facing this need sooner than others.

And what has become clear is that only a few cultural institutions are currently able to relate to this kind of problems. Looking at the few that did some advanced work, such as the Canadian Centre for Architecture, it is obvious that the difficulties affect not only the introduction of new methods of data collection and storage, but also the continuous updating of the software needed to access the information, while trying not to waste data in the transfer of information. If you want to acquire a work in 3D, and place it in the digital collection, it is necessary to ensure the transfer and storage of data, but also the necessary means for its presentation to the public in the long term, that is, when the curator who wanted it, or the artists themselves will not be there anymore. These issues will become more and more central in the future. Maybe it will not immediately happen in contemporary or



traditional arts, where artists still work mostly with “traditional media”: from paper to sculpture, from photography to video. But they too will address new tools and therefore face the same problems. In fact, the importance of this issue grows along with the number of artists that use digital media for the realization of their works.

On the other hand, I’m a bit critical regarding the trends around the fruition of the works, new trends that are being introduced by some projects, including the one carried out by Google, for

example. I was at the Google Cultural Lab in Paris, when they started the work for the reproduction of a museum visiting experience, for those who don’t have the ability to do it physically. I do not think you can replace the feeling you get in wandering inside a museum, linking the displayed works through a visual interface. Same for all those virtual platforms that, in my view, can be seen as an important way to strengthen and enrich the experience inside the museum, but can’t ever entirely replace it. The fact that these issues are now at the center of the debate and that many institutions invest energy and resources in the creation of experiences of this kind, shows that today this is the trend. But in the future, I think it will lead to another level of discourse and we will focus more on the type of experience generated by the artist’s way of working and the possibilities offered by digital tools to transfer this information to the public in order to complement, not substitute, the experience of the work.

2. What would help museum professionals to better face the challenges when trying to embrace the digital dimension?

Relate with technology partners, with the appropriate know-how and expertise, involving them in an ongoing dialogue to bring them closer to the real needs of the museum sector, which has nothing to do with the entertainment sector or technology fairs, where people are looking for another kind of experience. A museum needs a technology able

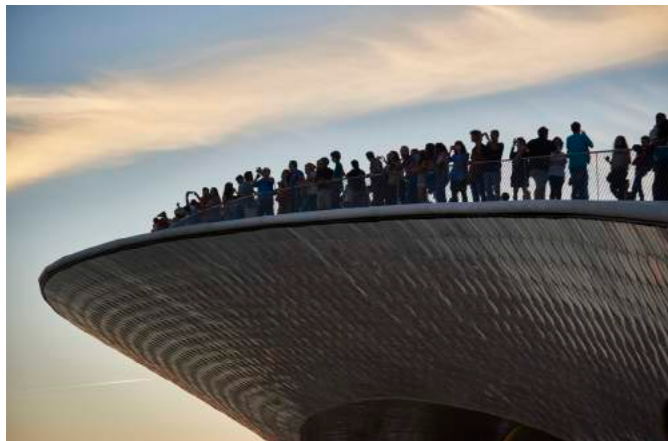
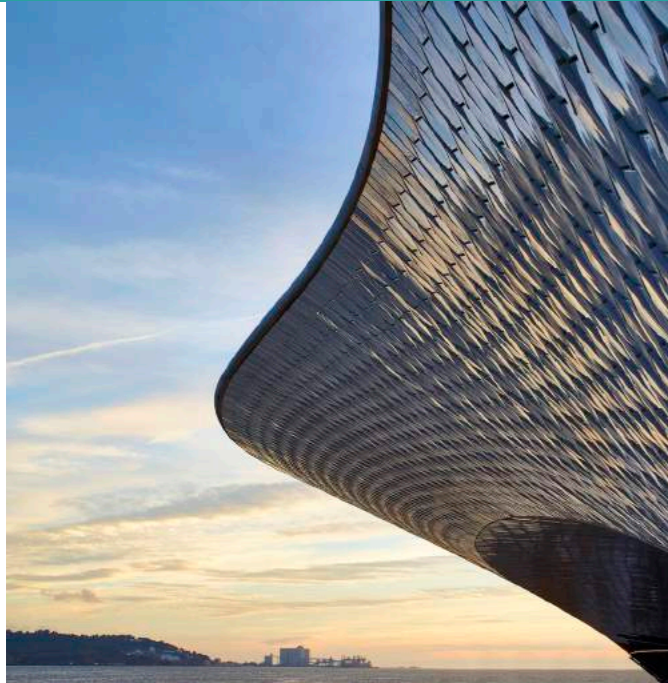
to provide in a direct and engaging way the additional information that accompany an art work. In parallel, an increasing number of artists is, not only using, but also turning its attention to the impact of digital technology. As a museum, we are very interested in trying to give evidence of what is changing in the world of technology and digital, but through the perspective of artists. As such, we often exhibit new technologies used by the artists in their works, but also happen to give space to those artists that highlight critical issues related to the world of digital technology and its use.

3. How is the digital environment affecting the museum world?

The overall labour world has been extensively modified by the digital, to the point that we do not even remember how things were before advent, 10-15 years ago. Just imagine waiting for an approval letter for six months, or to arrange a meeting by contacting people only through hand line and fax. It seems astonishing! The digital age has markedly stepped up the speed in our workplaces: this is one aspect of the digital transformation that we neglect because this new speed is now part of our lives in ways that we no longer recognize. If we talk about areas that have not yet had a direct impact by digital technologies - I refer in particular to the very pragmatic aspects of museum work, such as



organizing an exhibition, which still takes place in traditional ways, then we have a situation. However, if exhibitions use new media, then we must ask for specific technical expertise, updated on the incessant changes that the world of image and sound live every day. This is another challenge today, because machines and technologies become obsolete very quickly. Then there is the communication aspect that deals with the web site and how it can replace or supplement the museum experience. That, of course, now implies social media, which increasingly have a key role in the perception of the museum and its activities. But I remain stunned at how the continuous search of the spotlight and the attention of the online audience, through Facebook or Instagram, sometimes does not help to communicate and bring a true appreciation for the work of the museum. The impact of digital culture, in terms of social media activities, can be very misleading because it allows you to distort the way we work is appreciated in a museum, in strategic



and financial terms. The immediate impact on the web is sometimes able to distort the actual value generated by a work or an artistic activity in the non-virtual world. From this point of view, museums are becoming more “populist”, in the search for the general public approval, as it the case of the world political scene in recent years. As for the future development of digital technologies in the museum sector, I want to go back to what I just mentioned before, namely the fact that the augmented reality represents one of the most interesting aspects of this transformation. With this technology, instead of reading the few explanatory phrases next to an art work, it is now possible to receive much more information, in a more immersive mode, for an immediate understanding of the object being exhibited. The Google Glass are an example. The means used so far do not allow people out of the art world to feel completely involved and fully grasp the work and its meanings. This is one of the great challenges of contemporary art: so far, traditional means such as synthetic texts of explanatory panels tried to explain to users the artist’s work, his or her personal idea of art, the ideas that came into shape in the work. The real challenge is to transfer this information into the most intuitive and tangible ways, that the development of digital technologies makes it possible. Augmented reality can have a revolutionary role in this, managing to “bring to life” the art works in a totally new and unique way. In what concerns the collection, MAAT has just started the process of digitalization of its heritage and it

is about to approach how to figure out which is the best way to proceed and how to give it back to its audience. The experience at MOMA teaches me that this is not a fast process. On the contrary, the challenge is interesting and open, because many museums are digitalizing their collections by merely storing an image and description of their works. But there are many other interesting information related to the work to be transmitted to the public. I think it’s an important issue that deserves more attention. We work a lot in terms of communication, so that the MAAT can count on a simple and clean identity, recognizable from the graphic point of view. Facebook is one of the most important tools that we are using, like Instagram, which we see as a good audience-based tool to promote the architectural beauty of the building that hosts us.

4. What are the most important emerging job profiles related to the digital aspect of a museum?

I think that the interaction designer is a strategic figure, able not only to have an eye towards all possible content generated by an art work, but also able to combine them with the most appropriate means, depending on the objective to be achieved: from a short video content for Facebook, up to longer and in-depth content for the web page. It is a figure that has to do



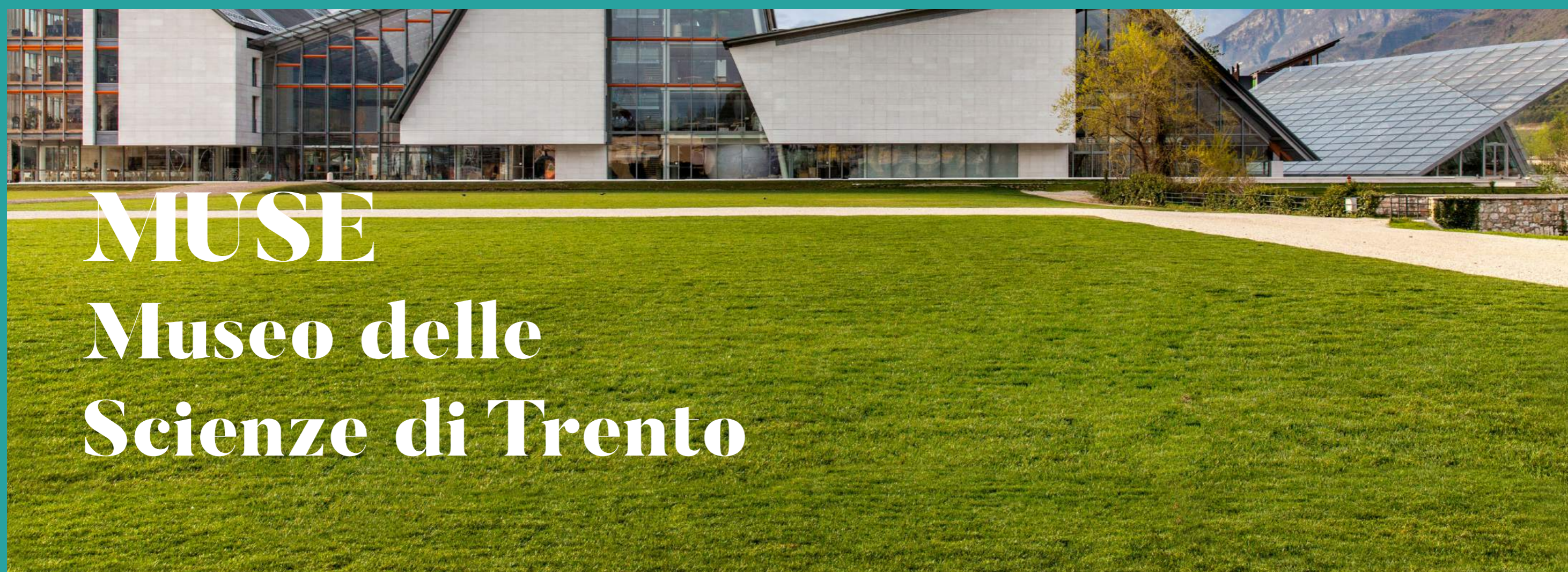


with the world of well-rounded communication, especially regarding the production of content, but which also lies at ease with the technical skills required to communicate with the different media, including digital media.

5. How do you recruit staff in your museum? What is your ideal candidate?

Currently we outsource many projects. Every work of art addresses several issues and requires specific skills, so we cannot afford to have a completely dedicated internal figure in the development of digital content, as well as those who work on our website and our social media. Therefore, we often turn to a consultant or a producer, with different levels of specialization to meet the specific problems posed by the artist. Only museums of MoMA size can afford to have a digital strategy director with a dedicated team, to produce digital museum content, to select the appropriate support for their conservation, to choose the material to develop communication on social media, and so on.





MUSE
Museo delle
Scienze di Trento



Website:

<http://www.muse.it>

Size/n. employees:

Large more than 50

Main Social media channels:

Facebook - Twitter - Instagram - Skype - Wikipedia - Pinterest - Youtube - Flickr

Type:

Local

Type of museum and collections

Anthropology - Archaeology - Natural History/Science - Art - History

Museum's annual attendance

510.000 visitors

“In a contemporary museum, digital technology is essential but should not prevent the perception around the find and the unique empathy that only its materiality can generate. The availability of a tablet or augmented reality use should not prevent the public fully reaping from the potential of the objects. What we need, then, is a technology that is there but doesn't show. A technology that also does not create gaps between digital natives and those who are outside it: a “responsive” technology, able to respond differently depending on who uses it, starting from the youngest.”

Samuela Caliarì
Head of Public Engagement

Davide Dalpiaz
Scientific Communicator, Multimedia Content Coordinator



1. What does the future hold for museums? How is the sector evolving? How do you see museums in the next 10 years?

Today the Italian museums are experiencing a good time despite the crisis, as confirmed by the Minister of Culture Dario Franceschini. European museums work even better. This shows that museums perform specific functions corresponding to the actual needs of society. It is not like it used to be, when the public visited a museum to see a specific find. Today the public is looking for “facilitators” able to build bridges between various disciplines and knowledge. Because, in the information society, there is a shortage of those that help to understand the relationship between all the information that today, more than ever, is available and easily accessible. In this scenario, the authority of a

museum can help navigate through the myriad of information, scientific and pseudo-scientific. The museum of the future is a museum developed and co-created with the public. An institution capable of a larger sharing with the local and scientific citizenship and able to give citizens a place where to find scientific authority and expertise, and above all a place to belong, becoming a part of their own lives. So, that's how the social value and, in our case, the cultural-scientific value of the museum enables communities to create. In this way, the museum becomes a place to be from an early age, in the everyday life, like the cinema, the park or the supermarket. In a nutshell: not a temple, but a living institution that generates a comprehensive benefit, personal and for the entire community.



2. How the digital environment is affecting the museum world?

We are at the beginning of this change, and Italy runs a little behind other European countries. Regarding the introduction of the digital within the collections, we are a highly technological Sciences museum, advantaged from this point of view. But we realized, thanks to the users, that technology must not lead to the finds disappearing. Mind you, the MUSE also has hosted exhibitions which were 90% digital and, in general, we consider augmented reality and remote fruition great

opportunities. However, either the technology has a fully immersive meaning (as in the case of *Oltre il limite*, a completely virtual astrophysics exhibition, able to explain the gravitational waves - something otherwise impossible), or it must play a role in the enhancement of the objects, not in their replacement. The technology should not be alienating. We believe it is necessary to work towards a fair balance: in a contemporary museum, digital technology is essential but should not prevent the perception around the find and the unique empathy that only its materiality can generate. The availability of a tablet or augmented

reality use should not prevent the public fully reaping from the potential of the objects. What we need, then, is a technology that is there but doesn't show. A technology that also does not create gaps between digital natives and those who are outside it: a "responsive" technology, able to respond differently depending on who uses it, starting from the youngest. We are still in an embryonic stage, but this is the direction we need to follow.

Among the museum activities more involved with the digital transformation, in the first place, there is the heritage digitalization, where everything begins. Thanks to 3D scanning, it is now possible to have digital archives of the highest level, quickly and directly accessible, something that had seemed impossible just a few years ago. It has been a while that we are working in this direction, cooperating with start-ups and companies for 3D digitization of a large part of our works. Some internal resources are working in collaboration with external partners for the realization of display systems, which will allow the transfer of the entire digitalized heritage on the most suitable national platform. In second place there is digital communication which, through the social media, helps museums to deepen its relation with the public, both during the visit and than from home. MUSE is relying on an internal staff that works for social media on daily basis.

Finally, no less important is the creation of

additional digital media for comprehensive communication: from installations in the exhibition halls, to the devices for visit enrichment, to event realization. For a few years now the MUSE has decided to invest in a technology section that deals with the audio-video production for several purposes. This department, consisting of two people (supported by graduate students and trainees), for example, handled all the audio-video content guides, developed in partnership with external companies that dealt with the software development. Today similar skills are not on board, although it certainly will be a growth sector. For the moment, our staff works closely with those involved in creating the most suitable software languages, also because we have an area specialized in software, which requires constant updating. In future strategies, it might be reasonable to introduce a specific profile that deals with this updating. Twenty years ago, it was unthinkable even an audio-video section, simply because we just didn't feel the need.

Finally, about the world of apps, MUSE has not a mobile app on the market. The works are underway but we haven't defined it yet. The dedicated staff is working with various external entities, using its expertise, in developing the most appropriate user interface for applications that will be used in teaching and accompanying in the exhibition halls. Currently we rent our own app on iPad mini, with different video materials



and insights. The service can be improved, even just transferring this content to a free app, downloadable by smartphone. We then planned the development of a whole series of applications to strengthen the marketing and to notify visitors about the local events. Or, vice versa, to attract visitors through the geofencing, which informs them about the museum activities as soon as they arrive in Trentino.

3. What would help museum professionals to better face the challenges when trying to embrace the digital dimension?

A biodiversity of skills, specific and transversal. As for digital skills, as a museum, we mainly aimed at software developers. Our museum is a modern, a state-of-the-art museum which requires a high level of technology. We therefore need software for the management of installations and also for the technological management of the museum structure, from the correct functioning of the lights to the new parking system. For achieving this objective, we addressed specialized companies, to assist our staff in managing and maintenance. For what concerns the soft skills, it is good that in our working groups we can measure with the most diverse skills: from the artist to the designers, from the scientist to the architect, down to the carpenter. However, to prevent the system from becoming inefficient, it is good that these skills are recognized and well defined within a structural organization able to make them communicate, integrate and interact.



4. What are the external and internal factors that could undermine a digital strategy development?

The digital strategy of a museum depends on many factors: it is a matter of leadership and resources, but also of management.

We are used to act by starting with what we want. Suppose the initial request is “what we would like to get from digitization”? The answer is to foster a comprehensive inclusiveness, together with the involvement and participation of people with disabilities within the museum. We are not only talking about blindness and deafness, but the most diverse disabilities. Technology offers many possibilities for this purpose, even though the museum has to deal with economic issues. There is another equally important aim for the MUSE: audience development techniques production. In this regard, we have done some experiments on profiling the audience, not only to collect information about where they are from, education et similia, but also to understand how it moves, what it does, what they takes home and whether after the visit they keep in contact with the museum. We have been working on this issue for a year; only time will tell us what sort of results we can bring home.

To date the most important result achieved by MUSE is the one obtained with audio-video guides, which continuously collect feedback directly from users, through a questionnaire

in the same audio guide. The visitor’s approval rating was 90% positive. This success was made possible by an initial investment. From face to face interviews to calibrate the instrument under construction, we added a major investment on the device, beautiful from the aesthetic point of view, as well as functional.

In parallel, we have done some experiments with easy to use digital devices, owned by the museum, to encourage interaction between visitors who don’t know each other. A reality of our territory, the Bruno Kessler Foundation, has focused on developing a digital role-playing game, to be proposed within the museum. Through visual and audio tools, the visitor was projected into a fantastic story full of action that changed depending on the chosen itinerary. And, as in all decent role-playing games, all participants were asked to solve a case. Since this is a test, the reduced number of people involved (80) still does not allow us to evaluate results. However, we realized that similar gaming techniques can work. But the response of the instrumentation used proved to be unsatisfactory, because it was inferior to that of any smartphone in use today. In our view, in museum digital strategies it is important that people use their devices, instead of delivering tablets and appropriate devices. First, because today all visitors have one; secondly, because everyone has more confidence with their own instruments. Moreover, for user profiling, if we



could find a way to geolocalize all visitors' phones, we would also avoid over-filling the museum with sensors.

5. What are the most important emerging job profiles related to the digital aspect of a museum?

Among the most important skills are those related to digital communication, which cannot be ignored. We have a dedicated office that deals with them. In this area, the growth is continuous and whenever possible, we try to include some young people, which means digital natives. One thing is to master digital tools because you have learned how to use them. Another thing is, you master them because you were born in, immersed in it. We often host young people

who have chosen our cultural institution to do the civil service, an internship or a work placement, or a volunteer experience. In this area, they really are a valuable resource. Although we are a young museum (the average age is lower than 40 years), what is perhaps missing is a think tank of budding digital natives. Boys and girls aged 18 to 25 who only deal with this and that, once they turn 26, they will take care of other things, because they are already part of another generation. The young age is important, without limiting the opportunity to work also with people of other ages. But if there are not many millennials, we lose control of these dynamics. In addition to the freshness and continuous updating, we also need a lot of technique. It's easy to fall into the ambiguity of considering digital communication

available to all: posting something on a social media doesn't make someone an expert on communication matters, but the truth is that to become an expert extensive training is required. Social media it's not something just anyone can do: they need specific skills that should be kept constantly up to date. As a Science Museum, we are, by definition, propelled towards the future and innovation. In the museum, there is also a FabLab, a digital fabrication laboratory, to meet the domestic needs of prototyping: from the educational tools of the several departments, to the technical solutions for exhibitions, through more specific instruments for research departments. But beyond this, to encourage change, we think it would be useful to introduce the rule that, every five years, the museum staff changes the role it plays, at all levels. This would allow freshness and dynamism, as well as greater openness. The balance created by a twenty-year stability of the roles tend to have an excessive, static nature. In England, for example, the directors change more frequently and, in general, a greater staff turnover at all levels facilitates change.

6. How do you recruit staff in your museum? What is your ideal candidate?

To this question there is a different answer for all the museum areas. For that which concerns digital matter, to stay current with the latest

trends is perhaps the main feature. Because it is a world that is evolving rapidly. Within six months everything changes: a new sustainable mobility can come out, for example. So, the predisposition to change, to be kept informed, to know what is happening, to work in teams are essential characteristics in our ideal candidate.



Musée du Louvre

Website:

<http://www.louvre.fr/en>

Size/n. employees:

Large more than 50

Main Social media channels:

Facebook - Twitter - Wikipedia -
LinkedIn - Vine - Daily motion

Type:

National

Type of museum and collections

Anthropology - Garden - Archaeology -
Historic Building/Site- Art - History

Museum's annual attendance

9.3 million visitors in 2014

“The digital strategy is not only a strategy for one museum, but a local and joined perspective and networking engaging common stakes, for conservation, digitization of the collection and digital skills for professionals. What I can do as a professional working at the Louvre, I can help small museums and give my expertise to them, in order to find solutions together.

There is a responsibility, an ethical and moral responsibility to create networks of competences between museums.”

Anne Krebs

Head of socio-economic Studies and Research Division,
Research and Collection Department

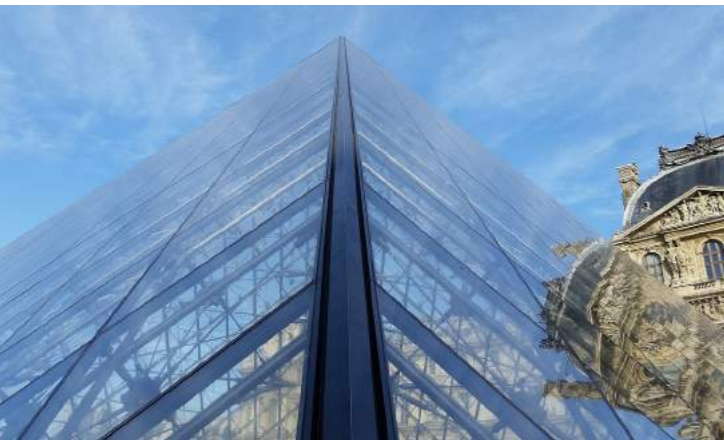


1. What does the future hold for museums? How is the sector evolving? How do you see museums in the next 10 years?

It's always difficult to answer such a question, for many reasons. First of all, museum professionals or politicians as well as researchers generally think they can find solutions by looking at “big” museums like the Louvre. Yet, big museums represent only 1% of the museums around the world. They expect that the solutions implemented by them can be developed for small or middle size museums. This is not possible, for very pragmatic reasons. It's a question of means, both financial means and of human resources. In “big” museums you also have a variety of experiences, contents and skills. The focus should be on small museums, having a bottom up approach instead of the opposite.

It is very important to consider small museums models and understand their problems and functioning in order to find solutions.

My second point is that all we can say today about museums, digital and jobs is strongly correlated to the crisis context. What I'm going to say to you today is completely different from what I could have said 5 years ago or probably what I will say in 5 years. This crisis context is so huge for the majority of museums, that it is very difficult to discuss any general strategy related to digitalization and digital competences. Because museums are confronted with such an important number of difficulties in terms of budget, in terms of human resources, and deskilling processes, it is very difficult to describe a “normal” situation and have some ideas about what should be done or could be done. The question is difficult because it is



financially from their local authorities and their own resources represent less than 10% of their budget. So they strongly depend upon their local authorities - they have absolutely no perspective for new projects and activities - and most of them do not even have a website - they don't have any digital tools. They strongly depend on their local authority website, and such websites can be obsolete and old. Often, local museums are not autonomous about digital contents and/or are not allowed to produce their own contents. In many cases museums simply have a Facebook page devoted to their local audiences. In my opinion, there is still a strong and erroneous idea that all museums benefit from digital tools, and that they are all capable to use digital tools in a rich and sophisticated way.

2. How the digital environment is affecting the museum world?

There is still an important gap in terms of cultural and digital practices at large. We can see that there is still a very important gap between museums' professionals in terms of digital competencies, especially between "white collars" and "blue collars" working in museums. Managers do use digital tools in a very sophisticated way. But when asking the staff working in the galleries for example, they may have much more limited digital skills. And we can observe the same gaps and disparities in society. The professional world is a mirror of society at large. It's very important to train people with low qualifications

also connected to the general economic model of museums. Museums are depending on the global economic situation and in many countries (like in England, Portugal, France, Italy) some of them are closing their doors. So it's very difficult to forecast the situation in 10 years time. Most probably, for very economic traditional reasons, important museums, like the Louvre, will still have a similar position thanks to a general and classical "big" museums' attractiveness and impact (beyond the specific situation of terrorism in Europe, and the current decrease of attendance in museums). Moreover it's very important to consider for example, the case of France, where 80% of museums depend

in museums, for example reception staff.. Some museums are now aware of it. Even at the Louvre there are still differences depending on the socio-demographics and level of education of workers. This is why the Louvre decided to organise training sessions on digital skills. A situation, which is, logically, almost impossible for a small size museum.

Another example - many museums are trying to develop crowdfunding programmes, by using digital tools in order to improve or develop their restoration or educational programmes. In France, the Ministry of Culture usually says; "it's very easy to develop a crowdfunding campaign", but small museums object that they don't have neither the means nor the skills. Again there is still a very strong digital gap within museums depending on their size and financial means.

3. What would help museum professionals to better face the challenges when trying to embrace the digital dimension?

Museums' professionals are wondering what to do in order to develop digital cultural programmes for their audiences but beforehand, they have to try to solve the question of digital access and ability to use digital tools. The central question is the relationship between education and culture, educating to digital tools, that means educating both to culture and digital competences.

The challenge is not only to "develop" art and culture, it is also and most importantly to develop digital competencies in order to - eventually- benefit from art and culture. This is a challenging question in France and Europe.

At present, I think we lack precise data in order to analyse the situation of museums in terms of digital competences and skills. The usual dialogue with ministries of culture or ministries of budget reflects the fact that they need data as decision-making tools. We all need objective and reliable information regarding digitization in museums and digital competences. We need such reliable data to conduct a very qualitative analysis and state of digitization, but you also need to convince politicians and financial bodies with quantitative data.

Indeed, there is a deskilling process in Europe - museums, theatres and operas are suffering from planned reduction in staff. You do not only have a "quantitative" loss of people and workforce, but also a complete loss of transmission of competences. Most of the museums in Europe started digitization processes but they cannot afford it any more. The transmission of skills in museums is very challenging because museums do have a high degree of expertise and retired people are not replaced. Linked to this, there is a complete lack of strategy by European States related to the disappearance of rare competences and skills in museums. In parallel, there is another belief in Europe



particularly in England, the Netherlands, or Scandinavian countries: volunteers are seen as one of the solutions for museums, but volunteers do not have necessarily the skills that are currently lost. So for me a challenging situation is digitisation of the collection in order to facilitate its access to all, as well as maintaining the core of the competences and expertise of museum professionals, particularly curators and documentation experts. In fact, research about the objects and the collection is fundamental, otherwise you have material objects, but you don't have any analysis or narrative. Research about the objects is crucial; therefore to maintain those skills inside the museums is also crucial. But we are at risk

of losing those competences, because we are not transmitting them to the young generation, since museums are not recruiting and not opening their doors enough to them.

4. What about smaller museum: which opportunities do they have to face the challenges when trying to embrace the digital dimension?

I'm not sure there is any "local" answer to such a question, as it is very much linked to each situation and each museum's financial and HR means. What is clear is that there is a lack, in many countries, of local strategies. What is missing at local level is a kind of networking support in order to find resources, assistance or training..

Museums used to work inside a "closed" environment but now they are forced to go outside of their boundaries and look beyond these boundaries, in order to develop new activities with the other museums on their area. The question of digital competences needs to be analysed at a regional or local scale. The digital strategy is not only a strategy for one museum, but a local and joined perspective and networking engaging common stakes, for conservation, digitization of the collection and digital skills for professionals. Each museum no longer can have its own website, having the risk to be obsolete very quickly. And no museums are sustainable enough in terms of financial means in order to improve their technologies and tools.

What I can do as a professional working at the



Louvre, I can help small museums and give my expertise to them, in order to find solutions together. There is a responsibility, an ethical and moral responsibility to create networks of competences between museums.

5. How do you recruit staff in your museum? What is your ideal candidate?

There is no recruitment in museums today. Moreover, the digital system had a very small impact in terms of jobs positions linked to the creation of small divisions or units devoted to digital tools in museums. It created very few positions, in charge of technical aspects, like engineering, technical competencies relevant to the implementation of websites or social networks. The most important impact (tangible or intangible) has been found for private companies selling their tools or methods to museums.

The economical model of the introduction of digital tools in the museum sector is also another open research question that has not been analysed yet. Thus, there is another crucial question for research, which is not only a question of skills but also a question of the impact of digital tools on museums' workforce and on museums' economic models.



**National
Museum
Wales
Amgueddfa Cymru**



Website:

<https://museum.wales/>

Size/n. employees:

Large more than 50

Main Social media channels:

Facebook - Twitter - Wikipedia

Type:

National

Type of museum and collections

Anthropology - Natural History/Science - Art - History

Museum's annual attendance

Around 1.700 million (2016)

“How do we deal with all the issues regarding what we collect and how do we collect all these digital materials? That’s is a question for museum specifically, because our vision is about collecting the present so that we understand our past.”

Janice Lane

Director of Gallery Development and Visitor Experience

Dafydd James

Head of Digital Media



1. What does the future hold for museums? How is the sector evolving? How do you see museums in the next 10 years?

From a really wide perspective I think one of the biggest challenges of the sector is seeing digital as an integral way of working. Regardless where you may fit in the museum range of disciplines and areas of work, there will be a requirement for a set of digital skills and competencies that are taken for granted. That is a mental shift/cultural change in terms of planning and visioning services, so that the digital element becomes an integral part of the thinking from the outset.

Taking whatever processes that we had and actually reconstructing them in a way that is relevant in a digital world. Apart from the cultural change, there are challenges in terms of skills

and investment as well. How do we use limited sums effectively, in the current timeframe, to develop our digital presence across our organisation and not within solo department?

Another challenge is how we communicate digitally and how we understand digital developments and stay current. Digital is used by people in their everyday lives and is always changing. We are still trying to understand different ways of communicating, how that changes people's interaction with museums and the collection. There are examples of museums moving faster: it depends on investments, skills and also the age range of the staff. Skills and interest of the staff (alongside investment in infrastructure) are influencing more than anything else how quickly we can move digitally, even without the resources to bring in additional dedicated "digital" people.

2. How the digital environment is affecting the museum world?

These are issues affecting not only the museums. Speaking about collection management, how we deal with all the issues regarding what we collect and how we collect all digital materials? I think there isn't enough discussion about that.

How do we capture the tweets that politicians use, all the social interaction that happens between people through a digital media? All this digital material, how is going to look at in 50 years? We went through a period of commemoration of different ranges of world events. Looking at human interaction to understand the past is very important. For example, how the letters written during the first world war are important to understand how people lived in this period? How is this going to work in the future when we relying on social media and emails, and no one collects? When this is not being kept in somebody's house? That's a question for museum specifically, because our vision is about collecting the present so that we understand our past in the future.

Then you have all areas of collections that have to do with arts and science, that are also born digital or developed in the digital framework, which perhaps we haven't got the space or digital skills or infrastructure to preserve effectively. We haven't worked out what is going to happen when it becomes obsolete, we haven't joined up enough across the sector or it's not moving quickly enough into the sector in terms of our professional practice.

It will impact also in terms of how we might be cataloguing collection management in the future. It's already impacting on how we do marketing and PR. Ultimately, it will effect exhibition design.

I think there are a lot of different areas where perhaps we are still following traditional routes and we should be trying to think how we join that up with the digital elements more effectively.

It might be not just about digital approach to it, but it might be other processes such as agile that are relevant to building exhibitions. Those approaches that might give you more flexibility to work with your community groups for example, that are becoming relevant in a physical world not just the digital.

Mind the balance between the digital and the physical. In the early days museums made a lot of mistakes, focusing on the technology rather than on the purpose of what they were trying to achieve. We made huge steps forward as we may now really focus on what we want to achieve and then focusing on the best technology to achieve that outcome.

3. What would help museum professionals to better face the challenges when trying to embrace the digital dimension?

I think we need to make a distinction between digital confidence and digital competence. Many people are comfortable using their own social media or digital platforms on a daily basis, but they don't have the confidence to adopt them in a professional environment. It's not always about competency but



making it easier through workshops, training, multidisciplinary and interdepartmental projects. So we may have a goal that is not necessarily about using technology but it's a goal for the organisation. We approach it digitally as a group across the organisation. It's not necessarily led by the digital team, and that starts to encourage advocates for the use of digital and builds confidence within different departments.

4. What are the needs of a museum regardless the size to face these challenges?

I think it's pretty standard across all the organisations. You will have departments that don't want to adopt or are slow to adopt any cultural change. Certain people resist change.

As well as financial issues, small or big museum you are always going to have them. The bigger the museum, the bigger the scale of the change as well. So I think it's pretty consistent across the organisations and there are no frameworks to apply either. So organisations should try to work out from themselves as well as look at different size organisations and taking some of the best learning from them.

I think with larger organisations you might have pockets of agility but making cultural change takes longer. Perhaps in small organisations you might have 5-10 people in the staff so that you might be able to get culture change a lot quicker. This, I think, it's the only difference.



5. What are the external and internal factors that could undermine a digital strategy development? How would you rate the efficacy of your digital strategy today? How would you rate the efficacy of your digital strategy today? What challenges are you still facing (if any)? What are the key successful aspects?

Speaking about internal factors, there are always resource pressures and each museum has to define their priorities. Another thing I find frustrating is the complexity and the risk-aversion that we have, particularly towards a really open approach in how

we use our materials. It is complicated, because there are also problems with the copyright, that it's really internally a difficult one to unpick. Some of the big organisations, like Rijksmuseum Museum and the MET in New York, have a completely open collection situation. We have huge issues with copyright agreements within our collection. We are trying to be less risk averse, to become more free in how we are use our collection. Those are the kind of issues that prevent us to move as quickly as we want to, as well as infrastructure challenges. For example, the (infostructure) system that we use is built to be an internal cataloguing, or an internal

copyright management tool. So that makes it more challenging to create open audience facing products. Also, there are millions of images online, who cares and what is the purpose of opening every item at once, what we want to ensure is the value that the museum can offer. Therefore it's getting that balance of relevance for our audiences as well as whether we can do it.

Relevance and meaning, search-ability and purpose behind why you are actually making something open and available.

Another key factor for us is that we are bilingual organisation, we operate in Welsh and English language. Therefore we have to ensure equal opportunities in both languages through our web and social media presence. In our social media policy we allow people to go ahead with the preferred language. Making this social media policy was quite liberating and made us move forward.

We produced a digital content strategy in 2014. A key part of that was around our social media policy and producing digital content and supporting the rest of the organisation to produce content. We focused on our social media because it was more of a neutral platform. In line with that policy we developed a training programme, traditional workshops, social media surgeries based on action learning sets, different toolkits, monthly bulleting to brief people on the campaigns that were going



on. That was really successful. We've seen much more growth but also more engagement with our content as well, that is really important. We are not just looking at the vanity metrics of the numbers of followers but at the real engagement we can provide. Through that, we managed to have digital champions across the organisation who are very competent.

Amgueddfa Cymru-National Museum Wales has 7 museums and a collection centre. Geographically we are quite dispersed. In Wales we also have a lot of challenge in terms of coverage and digital access. We have an open air Museum in Cardiff, which does not have web or mobile coverage throughout. The same



in other parts of the country. These barriers can change the way we are trying to reach audiences and how effective digital is in doing it. To resolve these problems, we have done a lot of innovation, particularly in digital infrastructure, with products that allow us to work in a bilingual way. We play a leadership role in a National project called People's Collection Wales, that involves four different partners. The aim is bringing together the national collections. This project has been a place to test out how we produce content, what infrastructure we need to work bilingually. We did a major upgrade with very little money because we use it to work creatively, across different partners and things. There are still technical and long term infrastructure problems, that are our biggest challenges, but we are doing a lot around leadership management across departments since making the case of digital being part of their thinking and practice is still not easy. In fact, we continue to lobby the departmental leaders across the organisation, manage time, programmes. It takes up resources.

6. In what area museums should invest?

All areas are relevant, of course you need to prioritize resources. Speaking about digitising the collection, it doesn't make sense to digitise the entire collection if we don't apply the approach why do we want to digitilise in terms of audience reach and engagement, and also perhaps in terms of profile, income generation and visitors number. There is no point



in digitising something unless you understand why and how you are going to use it. If you don't get key basics in place you run the risk of having to go back and re-digitise everything because you didn't use effective metadata and didn't do it thinking about why and how its going to be used and how we futureproof it?

We are trying to build our investment in different areas and link it to our core values and outcomes. I don't think that just focusing in one place you will actually achieve the impact you need. Be very clear on what you want the output and outcome to be and work digitally to get it. Build in the investment because it is part of your overall plan, that allows you to move forward coherently, not to be good in just one part of it. We have invested a lot of time in upskilling, not only in social media, but also in production and planning digital content, website updating and online shop management. We need to invest more in digitisation of the collection, however it needs to be strategic, but it's very difficult in UK to get any funding for the digitisation of collections or archive management.

7. What digital competencies or soft skills are needed to facilitate this change?

The first thing that we looked at was the structure of the team, knowing that a digital team is not going to grow hugely due to the financial climate. We looked at the skills that we

had to facilitate and coach others into learning digital competences and use the platforms. In terms of the team we invested in coaching, training, management training, and looking at the range of skills the digital team could bring - e.g. digital officer with a learning background so we were able to map our learning objectives. Of course we need planning and management skills for our big infrastructure projects but we need to be able to look at what's on the horizon, strategic planning as well. So one of the main shifts is associating coaching and training: that is important for a digital team and for the organisation. So they have digital content skills, editorial skills, planning skills and that level of confidence as well. So we did training in different levels for beginners, intermediate (i.e. Twitter) and then we started the pilot projects. Those projects were a great way for individuals to learn with others the best approaches and to evaluate how effective those project were. This training included our Board of trustees. It give us more confidence in how we were bringing our strategy forward and gave us freedom to be more innovative.

8. What are the most important emerging job profiles related to the digital aspect of a museum that are lacking in the museum sector today?

I think curatorially absolutely it has to be there.

I think here there is the biggest gap at the moment. And also with any kind of learning and engagement team. For our staff and museum assistants, we are looking for a range of different competences within those teams. The role may not necessarily change, but I think we need to be reimagining what the word curator means, what the word museum assistant means, to understand how they work within the virtual and the physical realm, and how the museum sits in those two realms.

We are quite open in how we recruit internally for the digital team. In terms of the technology, we can teach that. It's more about how people approach challenges and problems, and the commitment they have to visitors experience and customer service. These are the kind of things that we look at, not experience of specific platforms, because we know that they can be taught.

There is a clarity in terms of learning and engagement as a core set of competences within a group of museum staff. The importance of engaging the audience and the relationship with the audience has to be understood within a conservator and a learning officer as well, at different levels of course. Unless you have those core values you are not going to be able to deliver the kind of participatory engaged relevant museum experiences that we should be developing. Where we are trying to get smarter is really having high quality evidence, research based evidence on which we are basing decisions across a whole range of different areas of our work. That focus on having "Why we are doing something?",

asking the right questions about it, collecting data in the right way and analysing it, reflecting on it, and improving what we are doing, it's critical and often that is the bit that gets missed out.

Emerging job profiles are around data, business intelligence, analysis, understanding audiences. These are important especially now that we are driven to make commercial experiences to make more money. You need to understand customers, visitors and audiences in slightly different ways and how to monetize those opportunities. These skills enable to be much more strategic in our planning.

Some of our training is adapting to be more about data literacy instead of digital literacy. We are looking at basic things like segmentation, looking at more general trends, see how we use our different platforms and channels. It's gone beyond how to write a tweet effectively, or how to write an engaging blog, to how to target certain people and how to know what you are doing is effective.

9. How do you recruit staff in your museum? What is your ideal candidate?

It needs to be quite specific. So not an overarching digital competence. In terms of job specification we drill down a bit more. We have teams specifically working around content, teams working with assets, teams working with others, facilitating and evaluating projects, and so on. On the technical side, if you look at it more specifically, it depends on the platform we use. If it is a curator, for example, we may be looking



for someone that either has experience in using social platforms in an organisation, or is used to writing certain content. So, we don't look for just a general digital competency line, but something more suited to our organisational goal or departmental goals.

The image shows the exterior of the Museo Nacional del Prado in Madrid, Spain. The building is a grand neoclassical structure with a prominent portico supported by tall, white columns. A large bronze statue of a seated figure is positioned in the foreground. The Spanish flag flies from a pole on the roof. The scene is set against a clear blue sky with some trees visible on the left.

Museo Nacional del Prado



Website:
www.museodelprado.es

Size/n. employees:
Large more than 50

Main Social media channels:
Facebook - Twitter - Instagram - Wikipedia

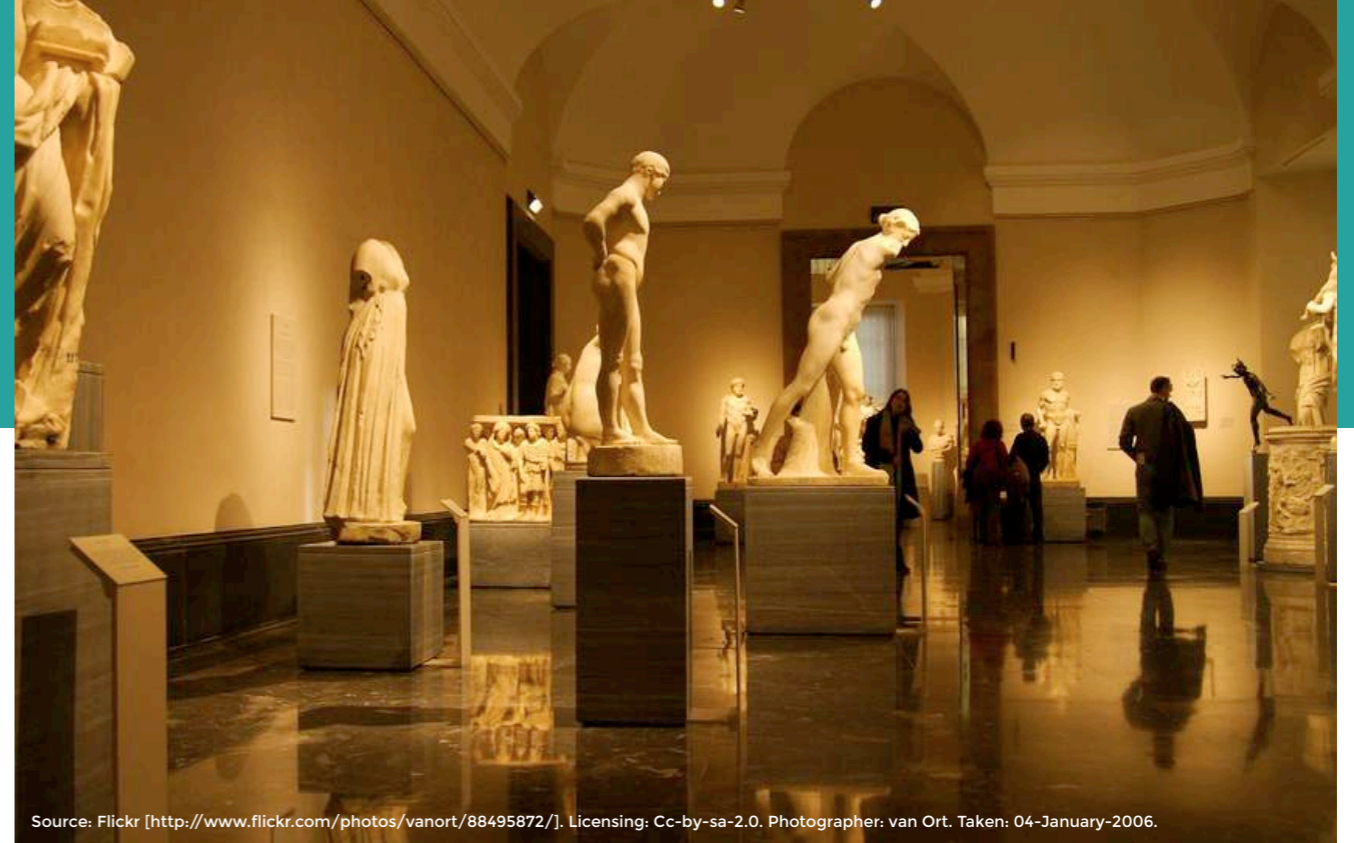
Type:
National

Type of museum and collections
Art

Museum's annual attendance
3.000.000

“When we started out, the limit was fear and uncertainties about how to proceed in a large organization like ours. When you work in a small museum the problem is reduced human resources. On the contrary, when you work in a large organization, the problem is having to deal with too many departments. There are always complications and there is always a reason for doing nothing. But what is the cost of not doing anything? It is always better to do something, even if little, because in a changing world the worst mistake is to stand still and digitalization is the only way to go. Time and patience helped us to respond to the doubts of all the staff, including the simplest questions. One thing is clear: to help people accept change you can't propose it haphazardly, but the best thing to do is to let them understand that you have a precise strategy”

Javier Pantoja
Chief Digital Officer, Head of technology



Source: Flickr [<http://www.flickr.com/photos/vanort/88495872/>]. Licensing: Cc-by-sa-2.0. Photographer: van Ort. Taken: 04-January-2006.

1. What does the future hold for museums? How is the sector evolving? How do you see museums in the next 10 years?

In my work ten years is a very long time as well as 6 months. Despite the difficulty of prediction what is certain is that the museum of the future must be a digital museum, able to seize the opportunities associated with sharing its collections online.

Otherwise we cannot rely on the interaction between possessions and visitors, becoming more and more virtual. Our museum has 200 years of history behind it, which can count on an important collection of art works, created by internationally renowned artists. For us it was important to create a free digital database of collections, for museum internal use and for external users. Because if you do not share your

knowledge, it is bound to disappear. Sharing is an opportunity for growth. Just think of how today, Wikipedia has become a useful tool for enriching the work of a museum institution, even if wrongly, someone still thinks to Wikipedia as a competitor. The digitization process can only be a process of sharing. Today museums live a very interesting phase, characterized by the transformation of their visitors from physical to virtual. To understand the extent of this change, one need only to think that the number of our website visitors is double the number of people that visit our rooms: 6 million in the first case, three in the second. And every year the number of visitors continues to grow.

2. How the digital environment is affecting the museum world?

The digital is the means to realize the museum institution's mission, is not a goal itself. It is part of the museum strategic plan and, therefore, covers all aspects of a museum life.

Today the sector needs a digital transformation, which looks to the museum not only as a physical place to preserve its collections, but also as a virtual place. For a long time, I thought that this transformation concerned visitors only, but I have realized for quite a while now that all starts from the people who work inside the museum. The change required would be much easier to achieve if people just used in the workplace, the technology they are accustomed to use in their private lives (smartphone, Netflix, etc.). However, when it comes to digital transformation in the workplace, people always think they have too many tasks and do not want to do anything considered too difficult, too complicated to learn. Technology should immerse the museum staff in a natural way, as it does in their private life. Having said that almost all people today are using Facebook to communicate with their family, Skype to talk with friends and relatives and smart TV in their free time.

Thinking about the meetings we held for the database digitization, I can say that it was a complex process. It was difficult to explain to the entire staff the main purposes that lead to digitization. Compared to ten years ago when I started working here, the situation

has much improved. At the time, most people had no idea what was Facebook or Twitter; some thought that digital was a sort of documentary. From this point of view today is all much easier: although most of the staff is more than 50 years old, many of them are used to make online purchases, from theater tickets to clothing. However, if you have a digital transformation program to be developed in a museum, resistances are likely to still be met: people do not want more tasks and are afraid of being absorbed in a fully digital world. At first, the museum staff had no way to understand who we were and what we were doing. I have the feeling that they had realized the importance of digital, but they were convinced that it did not concern them. Yet things are changing and people are beginning to think that their growth is related to this issue. Today it is increasingly clear that if you want to work, you should be able to use a word file and prepare a power point, just to give an example. But I remember at the beginning the fear and negative responses to any proposal, for no reasons.

When we started out, the limit was fear and uncertainties about how to proceed in a large organization like ours. When you work in a small museum the problem is reduced human resources. On the contrary, when you work in a large organization, the problem is having to deal with too many departments. There are always complications and there is always a reason for doing nothing. But what is the cost of not doing anything? It is always better to do something, even if little, because in a

changing world the worst mistake is to stand still and digitalization is the only way to go. Time and patience helped us to respond to the doubts of all the staff, including the simplest questions. One thing is clear: to help people accept change you can't propose it haphazardly, but the best things to do is to let them understand that you have a precise strategy, what is our action plan for Twitter, Snapchat, and so on. It is therefore necessary a clear idea of what we want to do and where we want to go. Open a new account on a social media or start a new digital project is like designing a new exhibition or a new educational program: you have to solve many issues related to the staff, the budget, the different goals, different actions. These are all activities that qualify a strategic action plan. And everything must fit into an overall strategy.

In our museum, the first area involved in the digital transformation was the communication area. The first step in this process was to find the suitable content managers able to explain online our collection and our artists, for a growing community of followers (our Facebook page now has more than 1 million contacts). The publication of the contents in the various social respects an editorial plan made with extreme care and professionalism, which combines information on the activities taking place inside the museum, exhibitions, educational programs, online publications. Social media are really important for us, because creating communities



By losmininos (Flickr) [CC BY-SA 2.0 (<http://creativecommons.org/licenses/by-sa/2.0/>)] via Wikimedia Commons

support our work.

Ten years ago, we started with two people working at the website but as time went by the management realized that digital is important, despite the limited human resources due to budget constraints. Step by step we created a small department within the Communication Department, which handles relations with the traditional media. Ten years ago, there was no Facebook, Twitter and many other communication channels which are now part of our daily lives, so this team was really counting on few people. As the time went by, we have realized that the digitization was a goal not only for our Communication Department but throughout the museum. And which is why we organized a meeting with other departments potentially interested in the ongoing transformation (from Design to Teaching, from Reception to Research). Not as a superimposing policy but because we were interested in their opinion and how they could play a role. So, we created a cross-team focused on New Media, a much broader field than the Computer Department.

This led to the Digital Department, whose first goal was precisely the realization of the new platform, thanks to the contribution of all departments of the museum. Now we have integrated the Digital with the Computer Department and both work closely with those involved in the production (Communication Department) and dissemination (Education Department) content.

3. What would help museum professionals to better face the challenges when trying to embrace the digital dimension?

The staff of a museum should not face the digital world, but take it for granted, like people take for granted their smartphones, their Facebook profile and their smart TV. As I have already mentioned before, their immersion in the digital world should be as natural as possible.

For us it was crucial the long process, started five years ago, which led us to the creation of our new website. This time has been useful to understand what people want, what they think of us and what are the Prado needs. We have worked with a dedicated team, consisting of museum employees, supported by some external web designers who work at the concept. As for the structure, the function of various parts of the website and design, the contribution of the museum team was decisive. The starting point was defining how people are aware of our museum and how they usually use our website. Considering a personalized use of the site, according to different

visitor profiles (the teacher, the tourist with family, the daily tourist, the Spanish grandmother and so on), we focused on their different reasons and will to understand the relationships between them and the museum, their emotional and functional link. If the bond is primarily emotional in nature, the visitor is looking for information that have more to do with the Prado as a brand, its history. Like, for example, a memory of a lifetime: "I visited the museum with my father when I was a kid ...". But when the relationship is primarily functional, the visitor is looking for information related to the purchase of a ticket, to download a collection artifact, looking for detailed information related to a particular artist, and so on. We worked to find meeting points between the functional and the emotional aspects, around which everything moves. We then analyzed the data related to the navigation of the website various pages to understand that our online visitors have on average a very strong link with the museum's artworks. It is an important factor that we have considered. In fact, the information concerning the works of the collection are the backbone of the structure and design of our new website. Not to mention our brand, our mindset and everything that concerns us. That's why our site is centered around this axis. The very moment you become aware of our museum, you also experience we have the works of Goya, Velasquez and many others. There are museums that places a lot on their brand or their educational programs, rather than their collections; the Tate Gallery and the Guggenheim are just two examples.

The communication of these museums aims principally to inform about the many activities carried out and only secondarily, to inform about collections.

4. What competences are needed to facilitate this change?

More than a matter of skills and abilities it is a matter of mentality and will. The new museum professionals must have the digital world as one of their primary objectives.

The sector needs a mix of skills, a good mixture of art history, computer science, history, communication, online marketing, and cultural management. My ideal staff should know how to use a computer writing code such as HTML and other specific applications, but also must have a degree in art subjects, because we need people who know how to produce content. Today the team I work with has 8-9 people with this type of expertise.

5. How do you recruit staff in your museum? What is your ideal candidate?

Our ideal candidate must have a comprehensive approach of the world, also from the digital point of view. It is important that they know where they live as much as they know our collections, our history and our activities. Because the role they will have is that of mediator between two

worlds: the Prado and the outside world. Then they have to be able to use the digital tools available today, like, a few years ago, it was essential to know how to write reports and other documentation.

6. What are the most important emerging job profiles related to the digital aspect of a museum?

Considering what I said so far, I believe that the emerging professional figure is that of the digital curator.



POLIN

Museum of the History
of Polish Jews



Website:

www.polin.pl,
www.judaika.polin.pl,
www.sztetl.org.pl,
www.sprawiedliwi.org.pl,
www.warsze.polin.pl

Size/n. employees:

Large more than 50

Main Social media channels:

Facebook - Twitter - Instagram - Youtube

Type:

Public-private

Type of museum and collections

History

Museum's annual attendance

460.000 visitors

“In the next 10 years I expect visitors to be more interested in investigating issues presented in museums in a more intimate way. In the ubiquitous atmosphere of digital media people will seek more and more original objects, humble form of presentation and intimate looks into people’s stories that they can refer to. The value of authenticity will be crucial here”

Joanna Król

Head of the Digital Collection and Resource Center Department



1. What does the future hold for museums? How is the sector evolving? How do you see museums in the next 10 years?

It depends on the region. In Middle and Eastern Europe, as well as in Middle East countries, national, historic museums will be created for different reasons. Eastern European countries are still grappling with 20th century history. This is why many institutions will be built to tell the story of intensive, quite often difficult contemporary history. Such branch of museology will be used for political purposes too, to build neighbourhood relations between countries, to shape societies' images of nations and their history. For Middle Eastern countries a modern concept of nation is still quite new. National museums will help them to build and make stronger its nation's identity. In the so-

called Western world various local museums will be developed and focused on the story of some specific issues, cultivating the tradition of each region.

In the next 10 years I expect visitors to be more interested in investigating issues presented in museums in a more intimate way. In the ubiquitous atmosphere of digital media people will seek more and more original objects, humble form of presentation and intimate looks into people's stories that they can refer to. The value of authenticity will be crucial here. In this respect art collection museums (like The Vatican Museums, The Louvre, The British Museum) or ancient history/archaeological museums (like huge units in Asia) still will be very popular. Digitization and making collections accessible on-line will not discourage visitors to see them in reality.



I expect more and more museums to treat equally people with different disabilities; digital technologies might be helpful in this aspect. I hope that a vast majority of museums implement electronic systems to supervise its organizational, financial and administration issues. This improves quality of work tremendously.

2. How the digital environment is affecting the museum world?

Digital technology might be very useful, but it is a source of evil too. In my country we have too much digital. It causes many frustrations, especially in interpersonal communication. Every day we write thousands of e-mails, expecting others to react quickly. That provoked an unhealthy progress in fast information delivery. Such situation deprives us from taking our time in making strategic decisions (management) of even rethink properly projects we are conducting (employees). In addition, much of the information is rubbish and waste of time since people stopped to respect the value of words. Because of that museum staff is suffering from different diseases based on stress.

On the other hand, different digital technologies are very helpful in developing museums technologies - from object conservation to intriguing methods of preparing exhibitions and might be very useful in attracting visitors.

That is why I suggest keeping a healthy distance towards the idea of living in the intensive digital



environment. It is also very important to build in each museum some organizational frames, which will enable to make the best out of digital and not to get sick at the same time. Especially management should be aware of it.

3. What would help museum professionals to better face the challenges when trying to embrace the digital dimension?

Good deals with IT designers. Hence, if you can afford it, employing your own IT designers or IT staff that will efficiently collaborate with the employees responsible for the digital development. Sharing experience and good practices with other museums within experts

network is highly recommended too. Creating networks that might be very useful in applying for various grants for digital archives development, digitalization, building digital tools for content dissemination and PR activities around such activities.

4. What are the external and internal factors that could undermine a digital strategy development?

Speaking about external factors, there is the lack of normative/legislation regulations, concerned with protection of digital assets. This is the case of Poland, where there are governmental regulations regarding protection

of material collections, but no clear regulations regarding digital collections. Current legislation doesn't perceive digital collections as national good and hence something worth to protect. Lack of clear regulations creates also troubles with methodology of indexing such assets. On the other side, shortage of grants focused on building digital born collections and dissemination of knowledge via modern technologies. Probably such condition is regulated by habits of the grants holders which activities are prepared for such groups as students and teachers. Because of that, grants are designed for quite traditional digital tools as e-learning platforms or education packages published on the website. It is quite difficult to apply for new technologies solutions, which has educational values in a less direct way and might be promoted within much bigger, yet less specified, group of audience.

No audience for digital products: the fact that some technology is successful in one country, doesn't mean it has to be accepted in another.

Poverty within the society: digital technologies are expensive and need good quality equipment such as highly advanced processors and screens in different mobile devices. If society is still developing, new technologies cannot be affordable.

Lack of joined technology solutions (and investing in them), which can both fit museums' desires and its audiences' needs: a good example are Internet products for people with disabilities. Museums would like to have attractive visually websites; unfortunately, at the same time, because of its

design, it deprives deaf people from proper reading these websites. I hope to overcome such difficulties in the future and develop market for people with disabilities.

Speaking about internal factors, first, there is a lack of digital strategy, due also to the absence of a professional team. Creating products according to new trends without paying attention to museums' needs and its audiences' needs is not strategic. The lack of marketing research before investing in a specific digital product it's also important, as well as having not enough time for testing new digital products. Management might not be able to supervise digital appearance of their museum efficiently and wisely.

Another counter-productive aspect is the presence of many digital products at the same time; that might provoke serious problems with museum's public appearance and understating their mission.

In the last three years, regarding challenges, we did progress in understanding our position as a museum on the Polish and world market. The digital dimension became one of the most important features of our museum. So that today we are on a good way to build a serious digital strategy, with good quality digital projects. Some of them were imperfect, but we improved them day-by-day. We used to create products, which became market failures. We used to have too many digital activities and still we are struggling to make a reasonable cut down. We slowly learnt how to analyse our knowledge and what to do to avoid mistakes in the future. Still today we lack of





expertise exchange. On a scale from 1 to 10, I can say we are at level 5 now.

The biggest challenge will be to make employees from other museum's departments aware of what digital is about and what kind of benefits one can take out of it. We want to raise such awareness step by step, by organizing special training for colleagues who work in different museum's departments. The first step will be about encouraging employees to use digital repository.

POLIN Museum is a huge, narrative-historical museum, presenting one of the most powerful histories that ever happened in the world. Most of our staff believes that working here is a reason to be proud. Without people strongly believing in the ideas that the museum is representing, we would not achieve our success. Enthusiastic people, believing

in the museum mission, are a key successful aspect. Technologies and methods are important, but without heart-believing people we wouldn't be able to build anything. This strong emotional aspect is shared by employees in every department - from administration to education.

5. What digital competencies or soft skills are needed to facilitate this change?

Today for a museum is increasingly important to have a good service offering. To ensure it, museum first should be able to create a unique experience for visitors, by creating the best quality digital products, working smoothly (no bugs, friendly users experience enabling him/her to discover what they are looking for quickly). It's also important to

have carefully selected program for selected groups of audience, which would include digital dimension and needs, of those who can't visit the museum in reality. An efficient and friendly electronic tickets booking service can also help attracting visitors. Accessibility is strategic, so that solutions generating equal chances for visitors with disabilities and those from disadvantaged environments (especially children and adults who have limited financial possibilities) are essential. Finally, attractive shops presenting museum goods (exhibit catalogues, collection presentations, educational materials for teachers), accessible on-line could also be important.

To improve the museum staff everyday work, what is really crucial today is: a systematical marketing research (which should include digital users' needs); a systematically, wisely and economically conducted promotion on the Internet; a central and well-secured digital repository; an electronic document system for financial and administration registration. But, at the same time, a better organizational work culture, shaping culture of work (respecting others time and sending less e-mails) is vital, as well.

6. How do you recruit staff in your museum? What is your ideal candidate?

Most of the time I arrange open recruitment. The

ideal candidate should be open for new ideas, cooperative and accepting other colleagues' otherness. Good education is an important base too but does not have to be certified with the best diplomas. Sense of humor is important too. I am a great supporter of transparency in employing staff.

Also, I support sub-contracted employees. Suppose there are formal and financial possibilities to employ an experienced sub-contracted employee for a long-term contract, I try my best to make it. This is not only honest and respectful, but it also gives so much demanded security - both for the employee and museum stability.

7. What are the most important emerging job profiles related to the digital aspect of a museum that are lacking in the museum sector today?

Professional and patience IT designers and developers who would understand the museum employees' needs in digital development. In POLIN we only have one specialist like this and he is priceless. We are lucky to have him on board. Thanks to him we were able to implement such digital solutions, as on-line websites disseminating knowledge about Polish Jewry and electronic financial documents registration.



Rijksmuseum



Website:

www.rijksmuseum.nl

Size/n. employees:

Large more than 50

Main Social media channels:

Facebook - Twitter - Instagram - Wikipedia - Pinterest - LinkedIn - Youtube

Type:

National

Type of museum and collections

Art - History

Museum's annual attendance

2.000.000

“Museums need to change their behaviour a bit. They should be able to share their collections more and with less restrictions.

Of course we are custodians of our collections, but we need to bring them to audience. If we look at the development of some very successful applications that changed our lives, like Airbnb or Uber, it is clear that today the key word is not possession anymore, but sharing.

The main challenge for museums is not to attract audiences only, but to find the easiest way to share their collections and to connect with other groups of society.”

Linda Volkers
Marketing Manager Rijksmuseum



1. What's the future holding for Museums? How the sector is evolving? How do you see museums in the next 10 years?

It's always difficult to make a prediction. 10 years is a long time and if you look at the social media's development everything is changing very fast, transforming dramatically the landscape. What I do see is that museums need to change their behaviour. They should be able to share their collections more and with less restrictions. Of course we are custodians of our collections, but we need to bring them to the audience. Looking at the development of some very successful applications that changed our lives, like Airbnb or Uber, is easy to understand that today the key word is not possession, but sharing. The main challenge for museums is not to attract audiences only but to find the easiest

way to share their collections and to connect with other groups of society.

Rijksmuseum's put our collection online, in Rijksstudio, without any restraints, for free: everybody can access. If museums do that, they would gain relevance and reach a large audience, including scientific target ones. Opening up museums, digitally or in another way, and make use of the network around them. So, we have a lot of specialists in the field and we can make more use of them in another way. Thanks to the open data movement, specialists look at your data and complete them, just like Wikipedia, also in a scientific way.

The best way to reach this purpose depends on the museum, the collection and the means you have. We are in a comfortable position, because we are a large museum in the Netherlands: we have the possibility to raise a substantial financial

funding in comparison with other museums. Many people say we're able to share because we are rich and have something to share. That's correct, but on the other hand, I think it's the mindset, the idea of sharing that makes the difference. We believe having a strategy is key: you can think of wonderful structures and projects but, if they are not in line with your core activities, they are not as effective as you would like to. We decided to digitalize our collection for exhibition and scientific purposes: putting them on our website in Rijksstudio, that seemed just another step ahead of our regular activity. For us is a natural way, but it doesn't work this way for every museums. We can do this, we can share our collection online because the major part of our objects is copyright free (the copyright are expired), so it's easier for us.

The idea of the Rijksstudio started ten years ago. Giving our collection for free is one of the best investment decision we ever had. It's an indirect way of marketing. It helps being relevant and we believe, by doing that, people know our collection better and finally, they will come to us. We are not afraid of people making new art from our art, creating something new, because we gain relevance as a museum, above all for new generations. Today we count 2600 new digitally creations. That's a very basic and important task of a museum: looking at the future, not only at history.

2. How the digital environment is affecting the museum world?

It depends on which sector we're looking at. It should be very interesting if curators and other museum specialists started blogging or using social media much more, using LinkedIn, for instance or other relevant channels. In our marketing section everybody is using it, but other colleagues still don't. And it's a very powerful form of networking. Apart from what people publish on their private channels, I see a tendency of more in-house production of content for official museum channels. In general, I see the number of people among the staff museum with digital knowledge growing, telling stories and making content themselves, making clips, videos and photos. We use these for our Intranet or other channels. We still use digital and external advertisement agencies for trailers and other projects. But we are trying to enable our employees to make digital contents by themselves, because we believe in the power of employees. At a service level, we have established a multidisciplinary webcareteam since the new opening of the Rijksmuseum in 2013, for instance. This team consists of people from all different departments: from IT to the collection department, curators, marketing and press. They are all doing shifts in the weekends and sometimes after opening hours. This team assists the regular team in the Publication Department, who is doing webcare during office hours. We are all in contact with each other and we help each other,

to decide how to respond and what to do in particular situations. That's very powerful, because we're from different departments; so, we have a lot of knowledge to answer to many specific questions, about collection, exhibitions, admission and so on. Thanks to another recent initiative, we are training our security and front office staff, about social media: how to use them sensibly. We are also training some curators to start blogging. We used to have a more conservative approach "Don't blog anything!", but now we are stimulating people and we are reinforcing those blogs as well. So, if my colleague puts a blog on Twitter we share that, with the Rijksmuseum account. We are also doing a lot with email and newsletters: some years ago we thought email newsletters would maybe vanish, but today it's very popular and so we put a lot of effort to improve it. We have a huge Customer Relationship Management system and we think that one of the things we want to do is invest more in that, do more with the insights, with data and knowledge. That's something we are working on, because we're not on the level we want to be.

Sometimes we find some limits during these processes of change, some cultural ones. Sometimes people have the tendency to control. You need to be aware of the fact that when you're in dialogue with your





audience you can get different questions about how to do that, and how to organize that. A new Director has been appointed recently and he wants to focus on digital and younger audiences, so we need to change our communication too. But at the same time we must not forget we have a lot of fans of over 50 years and older. So we need to combine those audiences. That's one limit and, of course, we have budget limits too. We are trying to look for partnership among our financial sponsors if we have specific projects, in order to open the museum to everybody. For example, now we have no admission fee for people up to 19 years old and we can do this because of one of our benefactors. Also the Rijksstudio is made possible by benefactors. In Netherlands is very common to find sponsor for specific cultural projects.

In the museum we have free Wi-Fi everywhere to enable visitors to use digital media. We have chosen to use limited digital interaction means, as we don't want the visitor to be distracted by I-pad or technical installations or something like that. We want to give our visitors the most genuine experience of art objects. We are using technology in different ways. So we have a high-tech solution for our website and art-collection with Rijksstudio, a free app, we participate in the Google Art Institute Project and we're experimenting with Virtual Reality and beacons.

We are doing a lot of things and the focus is on disclosing our collection to the widest possible audience.

3. What would help museum professionals to better face the challenges when trying to embrace the digital dimension?

There must be a transformation at different levels. The world is changing and museums need to rethink the way they are engaging with the audience. People have to be aware that's all about sharing, everything is out in the open through social media and you don't have to be afraid of that. Museums must embrace it rather than restrict it or try to control everything. So museums must be aware that public is changing too: if they are focusing on children, for instance, they have to consider that today children have a complete different behaviour than 10 or 20 years ago. For example, we are allowing people to take photos in the museum, because we know people are doing it anyway. People want to take a picture of them in front of a nice painting. If you respond with restrictions, you are not successful. That's a small example of encouraging different behaviours.

At the other hand, museums need to hire people with digital background and digital knowledge. It could be on social media, digital website building or data. Data is very important, because museums should measure things they are doing and use the results to define what will be effective for audiences.

Our museum has the basis for the digitalization, even if sometimes we need to outsource a

consultancy for something more specific. Sometimes it's better to work with external specialists and sometimes it's better to develop the skills yourself. Skills on the content production for the audience, that should be something we should develop ourselves it helps if we make use of the knowledge and expertise of employees, because you get much more authentic stories. And people are working with all their dedication and love: so why you don't make use of them?

Actually we have several departments working on social media: our publication department, marketing and press. One of the colleagues is a very good photographer, so she is in the lead for our Instagram account. We have an editorial meeting every week with these people and every 2 weeks we have a larger meeting with people from the Education Department and other sectors, to discuss with a larger group what we are publishing the next week.

4. What about smaller museum: which opportunities do they have to face the challenges when trying to embrace the digital dimension?

I would say, please stick on your core activities and see how you can relate to your daily business. Sometimes it depends on skills, but I would also suggest them: do one thing and stick to that. Don't try to do ten things because your



budget it will be away in ten seconds. If keep your focus and make use of opportunities coming from the web, you would gradually evolve. For us it was a long route digitalizing our collection and we haven't finished yet: we have one million objects and only 300.000 are digitized yet. Speaking about that, smaller museums could focus on a smaller part of their collection. It's a matter of smart planning: if you do something, do it at a highest possible quality and try to think further. If you are putting something online with many restrictions it doesn't make sense. If you can only put ten objects online without any restrictions, it would be much more effective.

5. What are the external and internal factors that could undermine a digital strategy development?

We are in the middle of revising our ICT strategy on a very high level, because is 5 years old. We do believe we have taken some steps, but we want to go further. We are focusing on using our network, of all our partners, including museum partners. We are partnering a lot, in exchanging exhibitions, objects, but also in co-production in videos or even a website. The recent Gordon website (robertjacobgordon.nl), realized together with South African Institute, is an example. We recently opened a South African exhibition and the website is part of it: it disclosures paintings and diaries of Jacob Gordon, a Scottish explorer of the 18th century. It enhances our reach, it helps doing our job, but we do it selectively -

otherwise your activities will be to scattered. Using our network is fundamental of our ICT strategy: we try to do as much as possible and, at the same time, we want to pick a few initiatives. We want to experiment, focusing on our core activities. If you don't do that, you will have a very nice action but nothing more than that. Everything you do, should have a link with your key goals.

6. What competences are needed to facilitate this change?

First, a senior level of social media skills. Today a lot of museums have social specialists at a junior level, without strategic power. Second, we need people with digital expertise, like data specialists (people able to read inside data and translate them into activities and new priorities). Third, museums need to be content producer as well, so they need content specialists (like an editor in chief) and people who can make videos and good photos. In general, it's important that people are aware of the digital development in other areas. We are successful because the Rijksstudio has been inspired by Pinterest, for instance. The idea of giving away for free is also similar to Airbnb (even if Rijks Studio began before Airbnb). By looking at those developments and translating them into your own practice you make new things, you promote change. Museum staff should look further than the museum sector. They have to look at all the branches as well. For this reason, another very important competence

is curiosity. People should be curious of other things and not being only in their own safe environment, they have to get further. I've been working in the Rijksmuseum for only four years. I come from a completely different environment: I worked in a digital agency and in financial institutions as well. Rijksmuseum embraced people from other branches to get different views, skills and experiences. This meeting of cultures is really helpful, as it brings new ideas, a different way of thinking. If you stay in your silo, think only of your primary goals strictly, you won't have success. That's why is so important to work with partners: they can give you different ideas and expertise and working with them it's much more funny.

7. How do you recruit staff in your museum? What is your ideal candidate?

If I worked at our HR Department, my ideal candidate should have, beyond their specific skills, digital competences as well: I would like to know if they are using digital media or social media in their own private life, to understand what they can do for the museum. It's very important to work with people who think digitally, and are aware of the many possibilities technology can give us. At the same time we have a lot of specialists who are great at curating new exhibitions, that's not very digital. We need to help each other, to exchange competencies



so that curators can become perfectly able to cover the digital aspects of an exhibition too, even if it takes time.

8. What are the most important emerging job profiles related to the digital aspect of a museum that are lacking in the museum sector today?

All competencies of all profiles are important in the digital area. Above all, like I already said,



it would be helpful if curators develop their digital competencies. At the same time, I think we need some dedicated digital specialists at a senior level. Indeed, digital manager is a strategic job profile, because they know everything about setting up a website and are also able to talk to different partners and communities.





Victoria and Albert Museum



Website:

<https://www.vam.ac.uk/>

Size/n. employees:

Large more than 50

Main Social media channels:

Facebook - Twitter - Instagram - Pinterest - Youtube - Blog - Tumbler
Wikipedia

Type:

National

Type of museum and collections

Art - Design and Performance

Museum's annual attendance

Over the course of 2015-16, a record 3.9 million people

“Even if it has the funding, an organisation has to have the will to invest in digital. Digital products rarely come into being without considerable behaviour and process change, as well as the adoption of new methodologies and ways of working.

Internal leaders need to lead and to drive that change. They need to understand how to embed digital media within the organisational culture. They need to whet the organisation's appetite for digital transformation, helping it to deliver new products, services and experiences that answer visitors' – and customers' – needs.”

Kati Price
Head of Digital Media and Publishing



1. What does the future hold for Museums? How the sector is evolving?

Experiences are increasingly at the heart of the museum offer. Museums are focussing more on the needs of their visitors, on understanding who their audiences are, and to build experiences around their needs and interests. Those experiences may exist within in physical buildings, with physical objects, or within the digital realm, with virtual objects and experiences. These experiences are built around museum content, collections, people and knowledge.

2. Is there a digital competences gap in the museum sector?

I don't think is a competences gap as much as

a resource gap, and in some quarters a lack of appetite and ambition to invest in digital. Some people are less able to visualise or quantify the potential impact that digital media and technologies can deliver. It is up to digital leaders to understand, realise and communicate that potential. They need to understand how best to wed digital transformation to organisational strategy and mission. If there is a competence gap, it's less around digital literacy, and more around the skills that are needed to sell a vision, to derive data-driven insight, and to build the business case for digital investment. And if there is a skills gap, it is in knowing how to commission, create and measure compelling audience focused content in the digital realm and in understanding how to build engaging digital experiences. While not everyone in the museum needs to know how to build this



content and develop these experiences first-hand, they do need to be able to articulate what makes for a good digital experience, or an inspiring digital encounter.

If anything, we need to focus on building digital confidence. Digital teams and leaders need to help identify, create and encourage colleagues to use digital tools as part of their everyday work and enable them to think digitally. In this way, they will help build that confidence. At the V&A we've developed user-friendly digital tools for the broader staff. We built, for example, a new management content system for our new website that anyone can pick up in 20 minutes, which enables colleagues to

publish website content quickly and intuitively. The V&A digital media team is a talented team of people working across content, technology and design. They have the expertise to research, understand, design and develop products, experiences and content that deliver on our vision to bring the V&A to life online. Our work covers everything that the V&A does: from the exhibitions we curate, and the collections we care for, to the knowledge we share. The digital team focusses on using digital tools and technologies to develop compelling digital content and experiences. We work with colleagues across the organisation who use digital media, tools and process as part of their work.

This includes the collections management team who oversee the digitisation of the collections, managing the data, information and knowledge we hold about our collections, and supporting the underlying systems. Everyone who works with the objects within our collections uses the collection management system as part of their day-to-day work. The digital team draws on metadata within that system, and surfaces it to the online world via an API to create online experiences about our collections.

As well as our curatorial teams, including the contemporary team (Design, Architecture and Digital department - DAD), are defining what constitutes good digital design through our acquisitions, events and exhibitions programme. For example, DAD has acquired the Chinese social media site "Wechat", as a new object for the collection. This has interesting implications for how museums collect, manage and maintain intangible pieces of digital design, born-digital artworks, or objects that are distributed across social networks. We can't think about those objects in the same terms as the physical objects that comprise most of our collections.

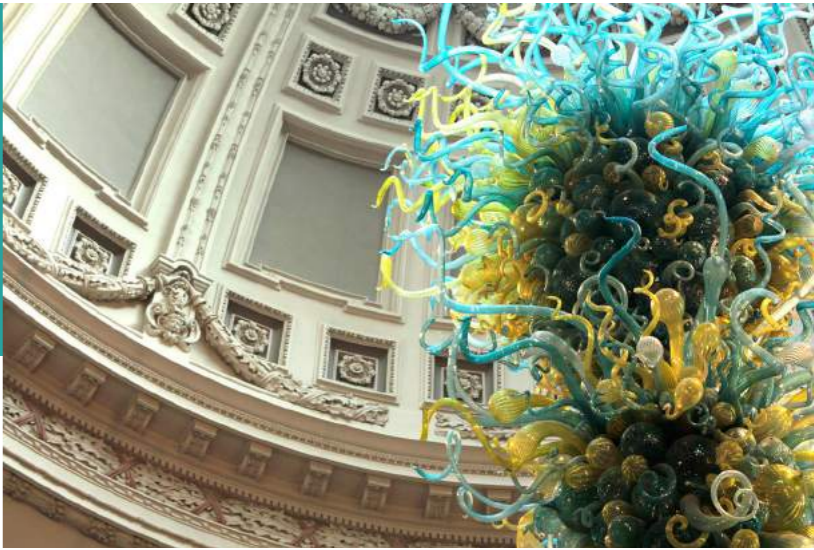
The learning department whose digital programmes team use digital tools and technologies, as part of the museum's events programme which serves a diverse audience. The IT department, who maintain the organisation's networks and infrastructure. Digital is a dimension of everybody's work at the V&A to a greater and lesser extent. Together we

are helping to define what the V&A is, and to understand how we can use digital as a means to improve how we get our content, knowledge and collections to the world at large, and to communicate with the world to increase our reach.

3. What would help museum professionals to better face the challenges when trying to embrace the digital dimension?

I'm lucky. I work in a relatively large, well-funded, well-resourced museum. Whether large or small, all organisations need to embrace digital media and technologies. However, in a small organisation you are less likely to have digital specialists. You are more likely to have generalists that need to work across a range of different disciplines. A digital team of one, for example, might need to do a bit of coding, a bit of design, a bit of content development, a bit of social media, a bit of email marketing... In bigger organisations those areas might be covered by at least five roles, if not more. The need is no less, but how that need gets addressed is quite different depending on the scale of the organisation. Smaller organisations therefore need to invest in multi-skilled generalists, and ensure they are properly remunerated. I think the biggest blocker to getting good digital talent within museums is in paying people what they deserve.

There is a lot of knowledge sharing that happens



within the museums sector via training, networking and informal events, like meet ups. Given we're well-resourced at the V&A, it's incumbent to us to share knowledge - gained from our success and failures - so other people can learn from that. I encourage my team to blog, attend meetups, to speak at conferences because knowledge sharing is invaluable in keeping up the momentum and the pace of digital media, which is quite unlike other areas of industry.

4. What are the external and internal factors that could undermine a digital strategy development?

The blockers are money and motivation. Even if an organisation has the funding, it must have the will to invest in digital and there needs to be an internal appetite for digital. Digital products rarely come to life without a lot of behaviour and process change, as well as the adoption of new methodologies and ways of working. Often, digital projects become Trojan horses for cultural change. What may ostensibly be a website refresh project, can often be a driver for much needed organisational change. So that's when internal motivation really comes into play. It's the role of people in my position to influence and persuade to get stuff done. That's where projects succeed or fail. They rely on the ability of internal leaders to drive change, and on the broader culture being ready for change.

Not all organisations have the internal awareness to gauge how big their appetite for change is, to be

able to identify the opportunities, and ensure they are commercially or reputationally viable.

Museums are very attractive organisations for suppliers and start-ups to test their propositions. It can sometimes be overwhelming to sift through the approaches we get daily and work out which are genuine opportunities with real value versus those that may not be. It's important to instil a culture of experimentation, and of course technology has a big role to play; but technology should not be the end but rather the means. Collaborations are excellent ways of testing new ideas and technologies to develop new content and experiences. But they must be led from within, and be tied to your organisational mission.

Key success has been building a business case that resulted in significant investment in overhauling to our digital infrastructure, which led to the development of a new content management system, a new website with further products in development. We could have pursued one of two approaches - a reputational argument (based on improving brand and user experience) and an ROI driven approach. We decided on the latter and used analytics and market research to make a watertight business case, that demonstrated the value of our digital estate. In it, we argued that the website is the key source of visits to the museum and that, through improving the user experience, we could turn more digital visits into visits to the museum. Because we know the average spend per head for each visitor, we could then quantify the potential uplift in

footfall and in income. We demonstrated that this digital investment could be recouped by increasing the number of physical visits to the museum that are prompted by the website. We won the business case and got that much-needed investment. It was the first time anyone had looked at the digital infrastructure in terms of a business asset, rather than just investing in digital for reputational reasons.

In terms of process, the V&A digital team uses Agile development process - where a self-organising, cross-functional team collaborate to build software in a highly iterative way, with a focus on early delivery, continuous improvement, and constant prioritisation. It's highly transparent, and fast-paced - it's very different to most museum processes, and can often run counter to the way museums operate. Adopting Agile principles and methodologies have been a success for us, resulting in a high performing team and, interestingly, elements of the Agile approach have begun to be used in different areas of the organisation.

We now have a more data informed approach to digital development. We will always look at data - from website analytics, from user testing and research - to inform everything that we do. We also take a human-centred design approach to our work, and ensure that good design is at the heart of all that we do in digital media. We need to continue to build ambition around the role of digital in the museum's future. That's a big

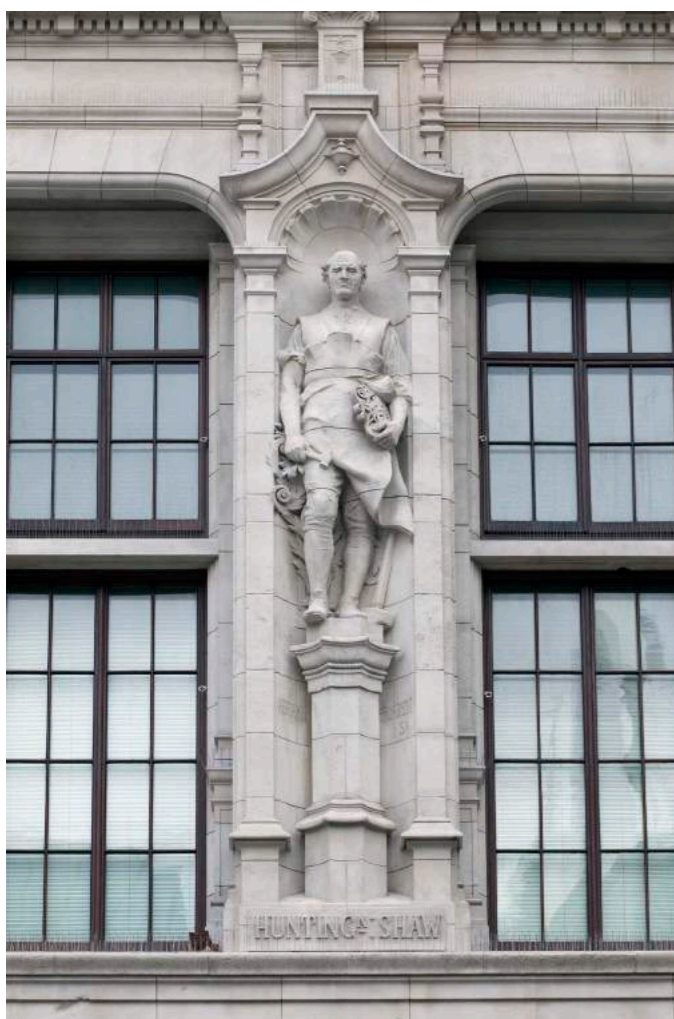
focus of mine now, to create more of an appetite and vision for what digital media could help us achieve. At the moment, the organisation is still focussed on our digital infrastructure, but we are beginning to think more about digital in experiential terms.

6. In what area museums should invest?

There are core areas of the digital infrastructure to invest in - like your website, ecommerce, CRM, collections management, and digital asset management systems. And, of course, there is the resource needed to create and manage content, and to run social media activity. These are the tools with which you build compelling digital experiences. What you do with those tools needs to be tailored to your organisation. Only through research will you know what is right for your organisation.

7. What competences are needed to facilitate this change?

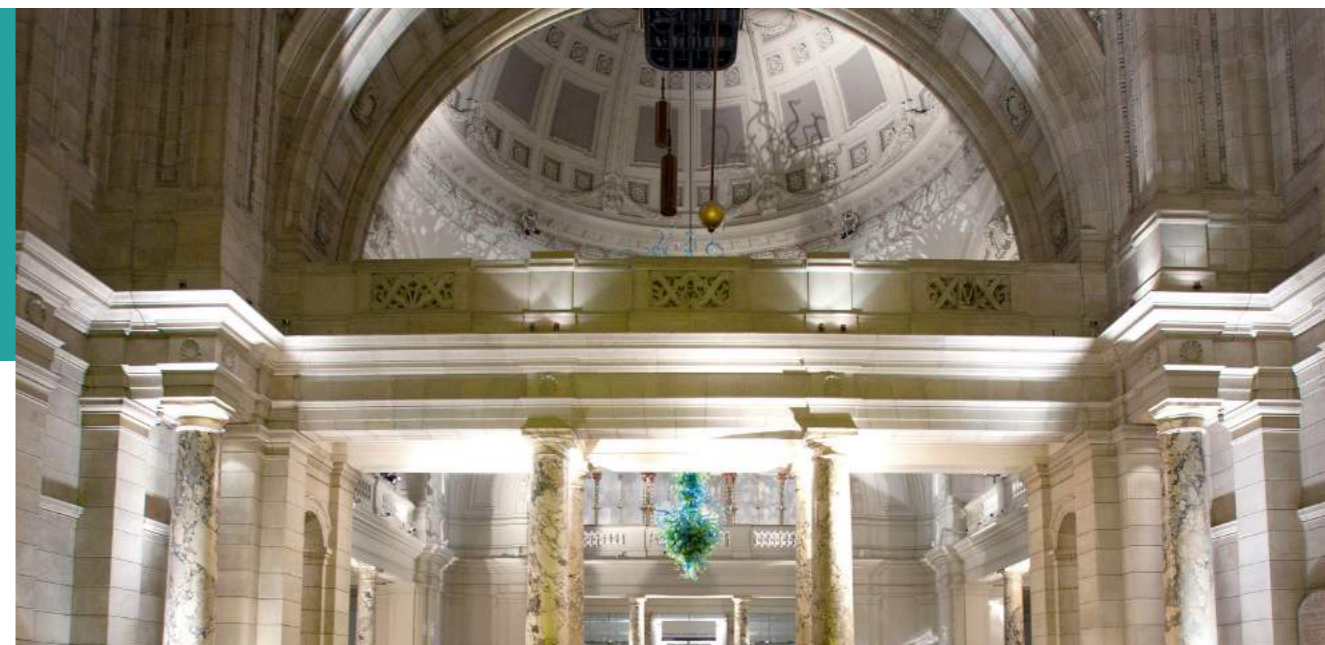
To drive organisational change you need to have strong leadership skills. And digital projects will



always involve an element of organisational change. The organisation, therefore, needs to equip people to lead digital change, to support them to be good leaders, and efficient managers of cross-functional teams. Digital leaders need the communication skills to convince colleagues that change is necessary, and to demonstrate the opportunities it offers. Everyone needs to understand website statistics and be literate in data analytics, and know how to derive insight from data. Whether or not you have an in-house design team, it's important to know and value the principles of good user experience.

8. How do you recruit staff in your museum? What is your ideal candidate?

Recruiting for design and technology roles is challenging. Museums find it difficult to compete against other sectors where these roles command healthy salaries. We use the museum website as a key channel for recruitment but for more specialist roles we need to be more proactive and use new channels to target those who might not have considered working within a museum. My team's work covers digital experience, content development, and technology. Tech - full stack team specializing in Ruby (on Rails) with extensive front-end experience - modern CSS and Javascript (ES6). Content - A team that includes editors, digital content managers and producers that oversees



content production, across print content (e.g. exhibition catalogues) and digital content (including video). Design - Breadth of experience designing user-focused digital products and experiences (including responsive websites, features and apps). Depth of expertise around user experience, user testing and research, interaction and user interface design.

9. What are the most important emerging job profiles related to the digital aspect of a museum that are lacking in the museum sector today?

Full stack developer: somebody who can work across the whole technology stack - from the back to the front end.
Experience designer: someone who really understands interaction design, user experience, user interfaces, and has solid graphic design and user research skills.
Data scientist: people who know how to work

magic with data.

The above roles also rely on an ability to speak the language of business as well, not talking in tech terms, but framing their work around business goals. The skills of the future will be around experience and data, key areas that are going to be strategic for all roles within the museum.

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Mu.SA Project (2016-2019)

“What will happen to museums when digital technology shows its full potential? What features will the museum of the future have? How will it seize the opportunities offered by digital innovation? What competencies does this industry need to keep museums relevant from the twentieth century to the present? To understand what role the digital driver is playing in the modernization of the industry, we asked these questions to ten internationally renowned European museums, where varying types and sizes of collections are conserved.

The report “Museum of the future” is part of the Mu.SA “Museum Sector Alliance” project, which 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.

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