

DIGITAL EXPERIENCES FOR THE PROMOTION OF CULTURAL HERITAGE

Dalia Gallico
*Università San Raffaele Roma
Italy*

ABSTRACT

The incorporation of digital technology in museums can offer a more engaging and interactive experience for visitors. It can also allow you to reach a wider audience through resources and online platforms and to provide additional context and information about their collection. However, it is important for museums to carefully consider how to integrate digital technology into their exhibits and ensure that it enriches rather than detracts from the overall visitor experience. By carefully incorporating digital experiences into their museums, they can provide visitors with a more immersive and engaging experience. Studying the intersection between digital technology and cultural heritage, this thesis aims to explore the potential of digital experiences in the cultural heritage sector and to identify best practices for creating immersive and educational digital experiences that engage and educate users. We will first examine the new technologies at the service of the cultural heritage sector and then move on to market numbers and target users. Through a literature review and successful case studies, we will identify the key factors contributing to the effectiveness of digital experiences applied to cultural heritage and then develop a concrete implementation strategy of these technologies by sector actors.

KEYWORDS

Digital Experience, Cultural Heritage, Virtual Reality (VR), Augmented Reality (AR), Social, Promotion

1. INTRODUCTION

The digital age has brought about unprecedented changes in the access, experience and interaction with cultural heritage. From virtual reality exhibits to online collections and interactive educational resources, the use of digital technologies in the cultural heritage sector has the potential to democratize access by increasing enjoyment to a wider audience. However, simply digitizing cultural heritage does not necessarily result in a meaningful and engaging user experience. Therefore, it is crucial to carefully consider the design and implementation of digital experiences in this area in order to effectively convey the meaning and value of cultural heritage.

Before proceeding further, it is also necessary to consider the challenges that this digital change has brought to the cultural heritage sector and how it has instead affected the use of content during the COVID-19 pandemic.

In 2020, in Italy, following the legal provisions which ordered the mandatory closure of museum structures to contain the spread of Covid-19 (between the end of February and May and between November and December), almost all museums (92 %) managed to guarantee services and activities, reopening the exhibition spaces to the public of visitors when permitted. Of these, over half (56.7%) remained open to the public for more than five months in the year, 28.1% for three to five months while 15.2% ensured physical access to visitors only for two months. The museums of the central regions (61.1%) and the museums of large urban centers (63.2%) and metropolitan cities (59%) have managed more than others to guarantee prolonged opening of the structures (more than five months). On average, during 2020, the facilities were open to the public for around 116 days. In the months in which the public had access to the exhibition spaces, 82.4% of the museums adopted at least one of the health measures required to reduce the risk of contagion. In addition to the use of disinfectant products for hand hygiene (85.8%) and devices for detecting body temperature at the entrance to the structure (63.1%), many museums have organized visits in such a way as to limit the presences (82%) or to allow only programmed entrances by telephone and online appointment (58.1%). Just over half of the

museums (54.2%) also set up visit itineraries with horizontal signs and 44.9% created the delimitation of the contact areas with adequate physical barriers.

In the face of the measures that have limited the possibility of attending public places indoors due to the health emergency, seven out of 10 museums (73%) have used alternative tools and methods to stay in touch with the public. Of these, the majority (63.6%) carried out remote communication and information activities through the main social media (Facebook, Instagram, Twitter), 46.1% increased or launched information initiatives through dedicated web platforms, 39.1% made streaming presentations of their collections or proposed video interviews with industry experts. Three museums out of 10 (30%) have chosen to make virtual tours of the museum facility available to users, to allow remote guided tours of the exhibition spaces.

To organize and provide online services, museums for the most part (85.4%) made use of internal staff who already had the professional skills necessary to manage digital technologies. Relatively few museums have resorted to external professionals (24.3%) or provided specific training or professional retraining interventions to internal staff (11.7%). The digital information and online communication activities with the public involved a larger number of structures than in previous years: in 2019, in fact, 63.4% of the institutes were present on the web with their own dedicated website, 57.4% had opened an account on major social media and 27% of museums offered tours and virtual visits on their website.

On the other hand, as a negative aspect to be attributed to digital change, there is certainly the proliferation of fake news and digital reproductions to be taken into consideration, which have cast doubt on the authenticity and value of the entire heritage. Furthermore, the growing demand for digital experiences has led to an oversaturation of online content, making it difficult for institutions stand out and effectively engage their audience.

Against this backdrop, it is more important than ever to carefully consider the design and implementation of digital experiences in order to effectively convey the meaning and value of cultural heritage.

The cultural heritage sector is vast and diverse, encompassing a wide range of museums, sites and traditions valued for their historical, artistic or cultural significance. Therefore, it is important to consider the specific needs and context of each heritage organization and its public.

Table 1. Percentage of people who have visited museums and/or exhibitions at least once in the last 12 months (2019 and 2020). Elaboration by Openpolis - With the Children on Istat data

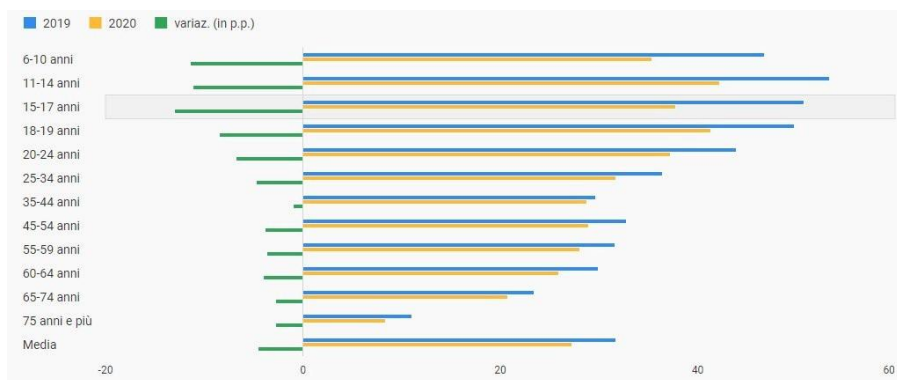


Table 2. Percentage of minors who have visited museums and/or exhibitions at least once in the last 12 months (2010-20). Elaboration by Openpolis - With the Children on Istat data

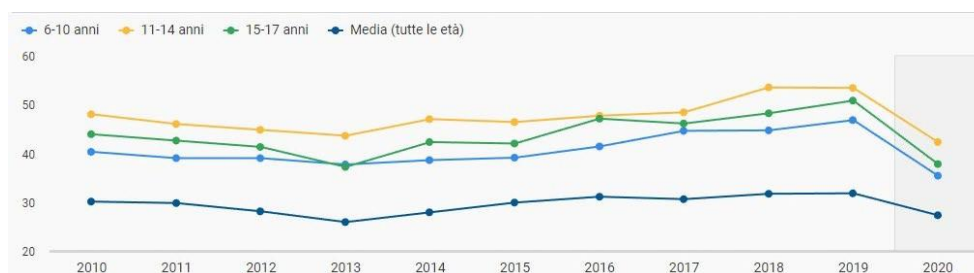
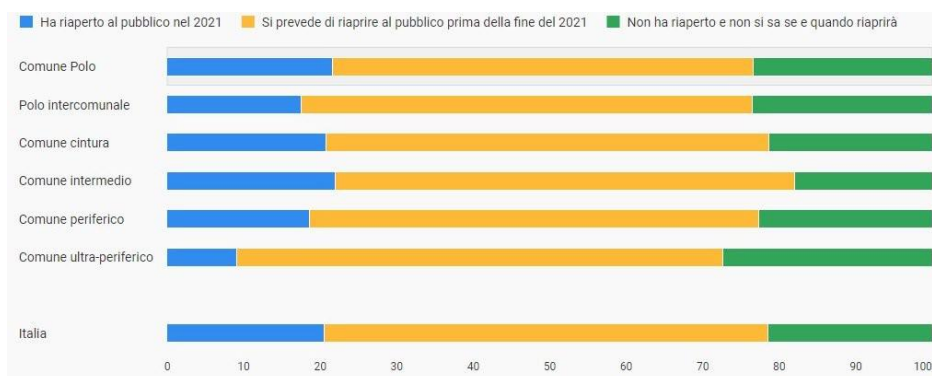


Table 3. Percentage composition of Italian museums based on reopening in 2021.
Elaboration Openpolis with Children on Istat data



2. DIGITAL EXPERIENCE

Digital experiences can take many forms, including:

- **Virtual Reality (VR) exhibitions:** VR technology allows visitors to immerse themselves in a digital environment, often linked to the museum's collection. For example, a history museum might use VR to transport visitors back in time to experience an event that happened or delve into a historical location. VR can also be used to create interactive exhibits that allow visitors to explore and interact with a digital environment in a more active way. This can be especially effective for science museums, where visitors can learn complex concepts in a more immersive and interactive way.

We can find some Italian case studies such as: the exhibition "A Space Adventure". In Fiumefreddo Bruzio (Cosenza) the Space Adventure exhibition offers "astronaut" experiences thanks to simulators, installations and virtual reality. Made by Extramuseum, by the RADAR Association in partnership with the Municipality of Fiumefreddo Bruzio, the Province of Cosenza and the Calabria Region. It is a production of the US Space & Rocket Center, the space museum in Huntsville in Alabama, USA.

The second Italian case study is the exhibition "The R-Evolution Park" created by Way Experience and Milanoguida with the scientific support of WWF and open to the public from March 2022. "The R-Evolution Park" is a revolutionary experience that addresses the theme of the evolution of Planet Earth. A journey through time, from the dawn to the present day, to find out how save the world. An adventure, with a scientific and environmental sustainability theme, to be experienced at 360° thanks to the Virtual Reality viewers.

- **Augmented Reality (AR) exhibits:** AR technology overlays digital information onto the real world, often through a smartphone or tablet app. This can be used to enrich traditional exhibits, for example by adding additional context or historical information to an exhibit on display. For example, a museum might use AR to provide additional information or context about a specific painting or sculpture, or to allow visitors to virtually explore a 3D model of an exhibit. The most virtuous case studies were conceived by: AGO Art Gallery of Ontario, with the exhibition "ReBlink". The brainchild of artist Alex Mayhew, the Toronto museum has created ReBlink, an innovative Augmented Reality experience that draws on innovations in technology to offer visitors the ability to see AGO's works in a whole new way through their phone's camera and a specially developed app.

The National Museum of Natural History Smithsonian in Washington DC allows visitors to reconstruct the skeletons featured in the "Bone Hall" exhibit via a specially developed mobile app.

- **Interactive kiosks and touchscreens:** Many museums now have interactive kiosks or touchscreens that allow visitors to learn more about specific exhibits or the museum's collection as a whole. These may include video content, quizzes and other interactive elements. Interactive kiosks can be especially effective for museums with large collections, allowing visitors easy access to information about specific items in the collection.

- **Online resources and digital collections:** Many museums now offer online resources and digital collections that visitors can access before or after their visit. These can include insights, virtual tours, online exhibits and digitized versions of the museum's collection. Online resources can be a great way for museums to provide additional context and information about their collection, and they can also be a valuable resource for researchers and educators. The reference Italian case studies are: Museion of Bolzano, which organizes online events, among which the one dedicated to art therapy stands out, with conferences, talks by experts and workshops that can be accessed directly from the museum's Facebook page.

From the official website of the Pinacoteca di Brera, it is possible to access the over 600 works in the collection, with very high definition photographs that allow you to discover details that may be indecipherable live. Furthermore, the Brera On air channel of the art gallery offers music, readings, documentaries and exhibitions, the first of which is dedicated to Raphael. The contemporary dialogues with the Peggy Guggenheim Collection in Venice are also online. The virtual programming of the Brescia Musei Foundation allows visitors to visit current exhibitions, educational activities and features as well as new titles in streaming directly from the latest edition of the Trieste Film Festival.

- **Social Media and other web platforms:** Museums can use social media and other online platforms to interact with visitors and provide additional content related to their exhibitions. This may include behind the scenes at museums, live broadcasts of events and interactive elements such as polls and quizzes. These media can therefore be a great way for museums to reach a wider audience and build a sense of community among their visitors.

This last point deserves a dutiful study as the dynamics of social networks can be very complex, especially if intersected with the cultural heritage sector. Looking at the current trends, important clues emerge about the change of direction in progress. If we take into consideration the top hundred most visited museums in the world, last year the three major social networks had all recorded growth in terms of followers, and Instagram had surpassed Twitter in fan preferences. In 2021, however, Twitter and Facebook lost 4.2 million and 2.7 million followers respectively, and Instagram, while growing, had a 30% lower increase. The scenario suggests that museums will be forced to use platforms like TikTok to find new and younger audiences. The main obstacle is of a cultural nature, because there are so many old-fashioned institutions that take themselves very seriously, while TikTok is synonymous with energy, speed, constantly evolving news.

For its part, the Chinese social network is moving to enter the world of culture, as demonstrated by the partnerships with the Cannes Film Festival and with the Royal Shakespeare Company. Some museums, however, have taken action and obtained the first results. The Prado in Madrid has the largest following on the platform, with more than 360,000 followers, mainly thanks to a series of "behind the scenes" videos of the museum's activities. Among the most interesting contents, we should also mention those of the National Gallery in London, the Rijksmuseum in Amsterdam and, in Italy, the Uffizi Galleries in Florence, where the followers on TikTok exceeded those of Twitter (96,400 followers and 10% total) compared to all the social networks on which the museum is present. However, very far from Instagram which collects 681,556 users of the total 962,987 of the Uffizi (71%), followed by Facebook, with 126,674 followers and 13% total.

After the boom of the past years, growth in 2021 has slowed, perhaps as a reflection of the physical reopening of many museums. The Museum of Modern Art in New York has been the undisputed number one for years and, even in the top twenty, the names are mostly the same as they were a year ago.

Table 4. Top 10 museums on social

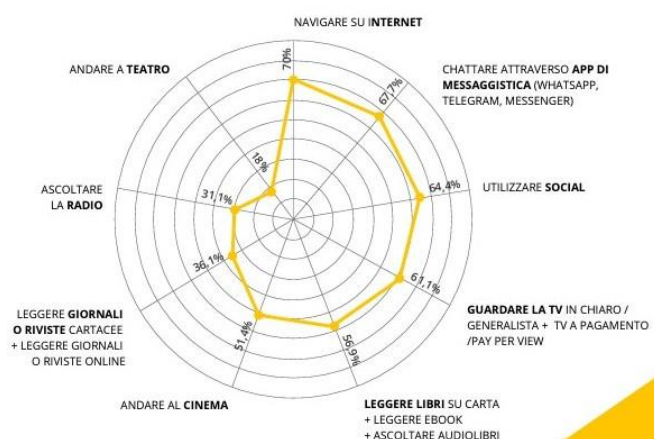
	Sede o complesso museale	Città	Follower	Incremento dal 2020
1	Museum of Modern Art	New York	13.191.000	1,4%
2	Metropolitan Museum of Art	New York	10.439.000	1,9%
3	Tate Galleries	Londra, Liverpool, St Ives	10.116.000	1,6%
4	Louvre	Parigi	9.080.000	5,2%
5	Guggenheim	New York	6.927.000	0,2%
6	Van Gogh Museum	Amsterdam	6.452.000	4,6%
7	British Museum	Londra	5.769.000	0,1%
8	National Gallery	Londra	3.921.000	3,7%
9	Museo Nacional del Prado	Madrid	3.811.000	20,3%
10	Victoria and Albert Museum	Londra	3.789.000	3,1%

3. THE RESEARCH

In carrying out this work we have tried to offer a sufficiently complete overview of the evolution of new technologies and we have seen how they have acquired a predominant role in everyday life and how they have changed the way we absorb information, communicate and socialize. At the basis of all this is the birth and development of the Internet on a global level which, in parallel with technological evolution, has drastically changed the social, cultural and economic landscape. Starting from this, we have outlined how technological progress in a general sense has impacted the cultural sector, the main subject of this text. The path towards the digitization of art and cultural heritage has already led to remarkable results, highlighting numerous examples of excellence among museums, creative companies and Italian organizations. We have therefore observed, through well-known case studies, how the process of digitization of artistic and cultural works has led to excellent examples of how organizations have managed to implement and exploit the enormous potential of new technologies, such as AR, VR, digital experiences, to offer innovative and high quality products, services and experiences. However, this process has often been difficult and complex from the start and looks set to have a long way to go. Before the expansion of the pandemic, the cultural and creative sector had seen strong growth, especially in terms of creating new jobs and positively impacting other key sectors for economic development. However, the sector has encountered numerous difficulties, such as the lack of support and lack of trust in digital planning, both from governments and cultural institutions, and the low levels of cultural consumption in our country. Through the qualitative and quantitative research presented, we were able to outline the cultural sector and observe the changes and transformations that have taken place in the information and cultural consumption sector; data that reflects the difficult situation of recent years caused by the pandemic and the slow recovery we are still facing. The “Io Sono Cultura 2022” research by the Symbola Foundation and Unioncamere has allowed us to understand what the great powers are producers of artistic and cultural content on a global level and how the Cultural and Creative Productive System is the engine of our country's economy, representing 5.6% in terms of value and 5.8% in terms of employment, thus proving to be fundamental in the development capital and territory.

The investigations of ICOM Italia, on the other hand, have allowed us to better understand the impacts of the pandemic on Italian museums and archaeological areas and how these institutions have approached digital with the aim of staying in touch with their audiences; in fact, we have seen how 89.24% of museums created ad hoc digital content after the closure and how 64.31% created new social channels or reactivated channels they already had. The pandemic and related restrictions have significantly accelerated digitization processes, especially in the world of culture and museums. Numerous cultural institutions have reacted to the situation by moving at least half of their normal cultural activities and offerings online. However, this phenomenon also seems to have influenced the way the public perceives culture, increasing the risk of making its meanings and nuances more ephemeral. After analyzing the cultural heritage sector in its breadth and depth, we focused on the reference target for the launch of the digital strategy, i.e. young people belonging to Generation Z, the so-called digital natives. People, therefore, who grew up during the full development of Information and Communication Technologies, and the first to have known a world already pervaded by new digital tools that have influenced how we live everyday life and the processes of acquiring information, purchasing behavior and ways to communicate. In fact, these prove to be perfect early adopters, users therefore familiar with the digital environment capable of educating previous generations and guiding future ones.

Table 5. Gen Z media diet. BUZZOLE survey



Through the surveys conducted by BUZZOOLE we have understood how Gen Z's media diet is made up, still finding a strong presence of traditional media such as TV, books and cinema, albeit in a reduced way compared to more recent media, probably also due to the cultural heritage of family of origin. This analysis then allowed us to cluster our target into four groups, taking into consideration what the likes and needs are and how much individuals want to know the brand in depth or how much instead they allow themselves to be influenced by a by external actors. This division allows us to further refine the digital campaign launch strategy, demonstrating how followers and effortless users, the most active online, represent the user group on which the brand should concentrate its efforts. After this first quantitative analysis, we focused on understanding the values pursued by Gen Z to date, noting how we find ourselves interacting with individuals who are very attentive to both political and environmental issues. In fact, brands have had to deal with a new dogma: being activists and taking a position to increase sales. This has led to the birth of Brand Activism, of which we have seen the definition given by P. Kotler, and how this must become a guide for companies and can no longer be limited to just being an element of communication strategies. To better understand this phenomenon, some of the most virtuous case studies have been reported. In recent years, the continuous increase of the Internet has become evident, which has confirmed its position as a privileged means of information for Italians, especially among the youngest. Only television has a greater impact than the Internet, but the latter is mainly used through social networks and by consulting specialized websites on various cultural topics. It has also been observed how web communication strategies, in particular those that make use of influencers, are able to involve a vast audience in the world of culture, especially among young people. However, this has often led to extreme and conflicting considerations, as in the well-known case of the " Museum Uffizi- influencerFerragni". It is therefore important to continue monitoring the long-term effects of these strategies, to evaluate whether the large number of "likes" and followers on the social pages of museum institutions will actually translate into a real increase in visitors.

Table 6. The new geographies of cultural and creative production in the world. Unioncamere - Symbola Foundation - I am culture - Report 2022



4. CONCLUSION

In conclusion, we can state that, as also revealed by Digital Report 2023, in Italy there is a growing maturity in the use of the Internet and social media. These tools are used in increasingly diversified ways, above all for the purpose of entertainment, information, sharing and socializing. They offer the possibility of providing cultural products and services adapted to different types of users and users, simplifying their narration, involvement and experientiality, generating consumption practices and proactive learning. Furthermore, they constitute a potentially useful tool for individual growth and intellectual capacity of people, thanks to the vast range of training contents that can be shared and used through the various sharing platforms. This part of the analysis was the basis for the development of a digital strategy defined in two parts: on-site and off-site. For everything that concerns the off-site, therefore the part relating to good practices to be implemented in the digital world to increase brand awareness and interact with the public, we started with the presentation of a

new brand, muvi, whose main purpose is to support cultural institutions in the creation and promotion of digital content using a platform accessible from mobile or desktop devices. After presenting the Brand Guidelines, we went on to define the aspect and main functions of the application through which all the information on current events and exhibitions is made available together with the digital content created by the institutions. These contents will therefore be available for consultation and above all shareable by the entire community, offering greater visibility to the organizers. Thanks to a fully customizable notification system we will be able to create a totally personalized environment based on the preferences of the individual user, improving the user experience. To complete this first strategic part, we then deepened communication on the web. Starting from the key concepts, such as accessibility and usability and, once understood how indispensable they are in order to be able to create an inclusive virtual environment that responds to the needs of all users, all the tools and best practices to be implemented to respond to these were presented requirements and also to comply with the regulatory framework, see the Stanca law. We therefore took advantage of the guidelines provided by WCAG to define the basic principles to follow for the creation of a fully accessible website, also defining the right practices to adopt. Finally, the tools available to verify the accessibility of the institutional website were presented, which can also help to evaluate its usability. As regards the part relating to social networks, we have underlined the importance of how collaboration and co-creation can offer multiple opportunities for improvement and development, if properly studied. In fact, the not carefully considered choice of a possible collaborator, especially if one aims primarily to generate economic profit and whose work deviates too much from cultural purposes, could prove to be highly risky and counterproductive, leading to damage to the credibility, reputation or image of the cultural institution. To avoid this, it is advisable to conduct careful research on social media, with the aim of identifying the influencers who are closest to the principles of your brand and who reflect your personality. Turning now to the on-site strategy, we have defined the positive and negative aspects of phygital contents such as AR and VR, emphasizing how the size of the structure and the economic capacity can drastically influence the design choices; the case presented concerning museum houses was useful for us to better understand this aspect. In any case, given the high competence and specialization necessary for the creation of contents like these with a high technological content, we have reiterated the importance of co-creation. Therefore, the comparison with partners in the sector is the right path to follow to bring significant added value to the experience of visiting cultural sites. All this highlights how the experience of the lockdown experienced in recent years has led to greater awareness and new perspectives for the future, which institutions should consider to facilitate a correct digital transformation of cultural heritage and generate more revenue for museums. The latter should once again become places of cultural production, as well as consumption, creating new art forms and experiences through the support of digital technology. For the last part of the strategy, detaching ourselves from the digital world, we explored the theme of merchandising and capsule collections to increase brand awareness. We have therefore observed the phenomenon on the basis of two well-known case studies, Lidl and Ikea, effectively verifying what benefits this marketing strategy has brought to the two brands in question. In both cases, the result was undoubtedly positive, leading to an increase in traffic in their stores and generating potential future sales as regards the core business of the brands. Ultimately, we can state that, despite the growing presence of the Internet and digitization in society, many areas of the Italian cultural and artistic industry are struggling to adapt to these changes, highlighting a persistent gap. It happens that the initiatives promoted by holders of cultural contents do not take into account scientific or commercial innovations. For this reason, cultural institutions need guidance in understanding the importance of developments in digital research and applications in order to meet their innovation needs. The challenges facing every cultural institution include adopting innovative strategies to attract new visitors and make their collections and initiatives more accessible, thus promoting the democratization of knowledge. Digital and the web can be useful development, enhancement and communication tools at various levels, but require specific skills, adequate resources and appropriate investments. However, these actions are particularly complex for small and medium-sized enterprises and emerging realities, which make up a large part of the Italian cultural sector, and represent the subjects most at risk and to be valorised. One of the main challenges of the moment is therefore to ensure that these subjects too have access to the opportunities offered by digital.

REFERENCES

- Accessible Resources for Cultural Heritage EcoSystems. (2020) *ARCHES project funded by the European call for proposals of the Horizon 2020 programme*. <https://cordis.europa.eu/article/id/413505-technical-innovations-help-overcome-access-barriers-to-cultural-spaces/it>
- Bone Hall (2022). *National Museum of Natural History Smithsonian*. <https://naturalhistory.si.edu/exhibits/bone-hall>
- Boracchi, C. (2020, December 17). *The rediscovery of the podcast and its potential* ICOM Italia. <https://www.icom-italia.org/wp-content/uploads/2020/12/ICOM-Italia-ICOM-RL-Comunicazione.17dicembre.2020-Boracchi.pdf>
- BUZZOOLE (2021). *Influencers and Gen Z: the role of influencers in purchasing processes, surveys* <https://buzzoole.com/resources/influencer-e-genz/it>
- Carraro, R. (2019). *The immersive digital transformation of Cultural Heritage 2019: the example of M9*, *Agenda Digitale*. https://www.agendadigitale.eu/cultura-digitale/la-digital-transformation-immersiva-dei-beni-culturali-lesempio-di-m9/#Linnovazione_costante_Sic_transit_tecnica_mundi
- Clarelli, M.V. M. (2011). *The museum in the contemporary world*. Carocci editore
- Criconia, A. (2011). *The architecture of museums*. Carocci editore
- Dara, V. (2017). *Who are the digital natives? A portrait and some myths to debunk*. Inside Marketing, <https://www.insidemarketing.it/chi-sono-i-nativi-digitali-caratteristiche/>
- Dawson, A. (2022). *Museums & Social Media*. <https://www.ilgiornaledellarte.com/articoli/musei-e-social-media/138963.html>
- Digital Mosaik. (2018). *The difference between augmented reality (AR) and virtual reality (VR)* <https://www.digitalmosaik.com/blog/differenza-ar-vr>
- Europa Creativa (2021-2027). *Creative Europe* <https://www.europacreativa-media.it/europa-creativa>
- FOCUS. (2021). *Space Adventure simulators and virtual reality to experience life as astronauts*. <https://www.focus.it/scienza/spazio/space-adventure-simulatori-realta-virtuale-mostra>
- Foschini, C. (2021). *Ferragni effect on the Uffizi, boom in visits from the youngest. Director Schmidt: Stable growth for the 19-25 age group*. https://firenze.repubblica.it/cronaca/2021/04/02/news/firenze_ferragni_uffizi_influencer_boom_di_visite-294813857/
- Haupt, R. (2021). *Netflix politics: who dictates the agenda in the age of social media*. Willmedia, Milano,
- ICOM Italia (2020, October). *“Museums and COVID-19”*. <https://www.icom-italia.org/musei-e-covid-19-questionario-di-icom-italia/>
- ICOM Italia. (2020). *Digital Communication and COVID-19*. <https://www.icom-italia.org/comunicazione-digitale-dei-musei-ai-tempi-del-covid-19/>
- Il Museo del '900. (2018). <https://www.m9museum.it/il-museo/> <https://www.carraro-lab.com/2018/11/29/inaugurazione-di-m9-il-piu-grande-museo-multimediale-italiano/>
- IPSOS, Digital Audio Survey (2022). *Podcast 2022, quality as a way to grow*. <https://www.ipsos.com/it-it/podcast-indagini-ipsos-digital-audio-survey-podcast-qualita-strada-crescere>
- ISTAT. (2022). *Report Museums and similar institutions in Italy*. https://www.istat.it/it/files/2022/02/REPORT_MUSEI-E-ISTITUZIONI-SIMILARI-IN-ITALIA.pdf
- Kotler, P., Sarkar, C. (2020). *Brand Activism*, Hoepli, Milano
- Maurizio, C. (2021). *Museum at the time of covid, the Italian solutions: virtual, immersive, interactive tours*. <https://www.agendadigitale.eu/cultura-digitale/tour-virtuali>
- Meschini, A. (2011). *Digital technologies and communication of cultural heritage. State of the art and development prospects: Technologies for the communication of cultural heritage*. <https://disegnarecon.unibo.it/article/view/2565/1943>
- New European Bauhaus (2022) https://new-european-bauhaus.europa.eu/index_en
- Openpolis. (2022). *Access to culture and museums for minors, after two years of the pandemic*. <https://www.openpolis.it/laccesso-alla-cultura-e-ai-musei-per-i-minori-dopo-due-anni-di-pandemia/>
- Symbola (2022). *I'm Culture 2022*. <https://www.symbola.net/ricerca/io-sono-cultura-2022/>
- We Are Social & Hootsuite Digital (2023). *Report Italia 2023*. <https://wearesocial.com/it/blog/2023/02/digital-2023-i-dati-italiani/>
- We Are Social & Hootsuite. (2022). *Digital 2022 Global Overview Report*. <https://wearesocial.com/it/blog/2022/01/digital-2022-i-dati-globali/>