



Museums and Crisis Management due to Covid -19. Effects of Pandemic and the Role of Digital and Social Networks Communication

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Abstract

The overall purpose of this study is the effects of lockdown within Italian museums caused by the Coronavirus disease-19 (Covid-19) emergency. During the pandemic, the museums are being closed, and the use of digital content and social networks seems to have been the solution to overcome the closure problem. The study analyzes the role of digital content and tools in communication to manage the shock due to Covid-19. The basic design of the research recurs to the crisis management model used to analyze three stages crossed by museums as preparedness, reaction, and recovery. The study involved several Italian museums grouped according to the art collection, governance, and funding sources. A semi-structured questionnaire was sent to them. The main findings show the presence of digital as a strategy already adopted by museums before the outbreak. However, the results reveal the absence of a preventive phase as requested by the model of crisis management. At the same time, it has emerged the need to adapt the digital content to guarantee the mission of fruition for the public.

Keywords: Italian museums, covid-19 effects, crisis management, digital strategy

Introduction

The Health emergency caused by Covid-19 introduced a crisis for many sectors, including the cultural sector. It caused the closure of cultural venues, loss of audiences, lack of income, blockage of events, low growth in cultural spending, and reduction of economic-tourist-induced activities.

As reported by NEMO's survey 'The majority of museums in Europe and around the globe are closed. Closing doors to the public results in a drastic loss of income for many museums. While some museums have found their budget minimally impacted yet, some museums, especially the larger museums and the museums in touristic areas, have reported a loss of income of 75-80%, with weekly losses adding up to hundreds of thousands of Euros' (2020:1).

Due to the pandemic, the museums have redefined their space of relationship with the public. Forced closures have confronted museum leaders with a scenario adaptation that has forced closure and the choice to ensure their organizational mission.

Accordingly, there has been an acceleration toward digital transformation (Agostino et al. 2020; Xu, 2021), breaking down the problem of the physicality of the place where to live the museum experience.

However, during the Covid emergency, the museums have demonstrated the capacity to react, readapt, and experiment with new approaches to the public. A museum without walls was created or 'musée imaginary according to the concept elaborated by the historian Malraux in 1967.

Nowadays, the museum must be able to embrace the challenges of the present and make itself a participatory and inclusive place (ICOMs, 2019). The lockdown caused by the Covid emergency has interrupted the activities of all productive and non-productive sectors. So, museums have had to manage the crisis that has involved them despite not being prepared (Mackay, 2022).

The use of digital technology and social media could be considered a tool to help overcome a crisis if it is part of a management plan. However, the use of new technologies or new media art (Wang and Lin, 2018) in the museum sector has been analyzed in terms of its impact on collections (Vom Lehn and Heath, 2005) or visitors (Soren, 2005). There is a lack of studies about whether and which new strategic actions have been implemented by museums in times of shock (financial crisis, terrorism, and impact on tourism) or whether they have adapted to a contextual scenario without taking any initiative.

The main models of management crisis identify four stages prevention, preparedness, response, and recovery. Through the application of the model of crisis management, it intends to understand if the use of social media and

digital technology has supported the management of the crisis of Italian museums during the health emergency.

Through the analysis of the presence or absence of digital strategies and social media in Italian museums aims, the paper aims:

(1) Investigate whether the use of digital and social media as part of a long-term plan already started or if it has been implemented after the Covid emergency.

(2) Investigate if digital and social media are tools that have helped and supported the museums in the management of the crisis.

Initially, the research involved 2,156 museums identified through a web search and situated in twelve Italian regions. A total of 73% of the e-mail addresses have been reached. It was sent as a semi-structured questionnaire addressed to the museum manager or director.

Some museums have reacted with actions implemented immediately, others have evaluated initiatives to implement in the medium-long term. Applying the crisis management model, it emerged that museums do not have a phase of prevention (Ramsey, 1994) and use social media and digital to have proactive communication with the audience (Thomsen, 1995).

The paper is structured in five parts. Introduction and analysis of the scenario due to the impact of Covid-19 on the museum sector. It follows the theoretical background and method articulated in two parts: the first investigating the role of digital strategies in museums and the second presenting the main theoretical frameworks on crisis management. Afterward, it follows the results and discussion and, the conclusions.

Theoretical Background

Covid-19 impacts on museums

In early March 2020, the World Health Organization declares the pandemic crisis caused by the spread of Covid-19. China is the first country affected. Italy will follow after it (WHO press conference, 11 March 2020).

Internationally, among the consequences, the cultural sector has seen the cancellation of events and the closure of meeting places and attractions such as museums. At the same time, also tourism sector records around a 70% reduction in tourism activities due to the forced block (OECD). Many countries pass from a condition of 'over-tourism' to one of 'non-tourism' (Gossling et al., 2020).

In Italy, the Bank of Italy report (2020) underlines the reduction of 4.7% of GDP in the first quarter of 2020, estimating a contraction of 9.2% per year. Moreover, the macroeconomic forecast has predicted a 13.5% loss in foreign demand for the products, recoverable within the next two years. The recovery is conditioned by factors such as the spread of the virus, solutions

with which enterprises and citizens face the crisis, investments and, efficacy of policies.

About museums, the first study drawn up by the Network of European Museum Organizations (Nemo's Report, 2020) analyzes the economic impact on 1,000 museums distributed in 48 countries and their ability to continue to guarantee 'informal education through the use of digital technology. The relevant result is about the role of digital and its importance in cultural heritage because it can lead to an increase in the rate of digitization, connect people, enable knowledge, and transform existing resources into new cultural products.

NEMO's Report investigates many areas, the losses for the organizations, the activation of smart-working, the assignment of new tasks to the staff, access to national funds, and the limited ability of museums to seek alternative sources to deal with losses.

The majority of museums in Europe and around the globe are closed. Closing doors to the public results in a drastic loss of income for many museums. While some museums have found their budget minimally impacted as of yet, some museums, especially the larger museums and the museums in touristic areas, have reported a loss of income of 75-80%, with weekly losses adding up to hundreds of thousands of Euros'.

Digital has supported the communication and sharing with the public and the creation of virtual meeting places. Online activities have increased by up to 80% thanks to the human resources dedicated to the digital level and additional resources allocated to support them. The online visits and participation have increased from 10-15% more than 25% of the sample to 200% more representative of 5% of respondents.

The ICOM (2020) study carried out between April and May on 1600 museums in 107 countries confirms what was already highlighted by the previous NEMO's Report. In addition, 12% of participants also declare the risk of definitive closure of their museum, the suspension of payment of salaries (54%), non-contractual renewals for freelancers (2,6%), and layoffs (16%).

Many museums in all countries have transformed into digital museums facing an emergency. This process has stimulated the museums to innovate to communicate their cultural heritage to reach and engage the visitors (Carlsson, 2020).

On the other hand, if museums need to innovate themselves during the lockdown, at the time of reopening they need to apply security protocols to guarantee the visits. Some of the actions introduced are alternative paths for social distancing, online reservations, sanitizing stations, and temperature scans (Laura Itzkowitz, 2020).

Regarding the funds to support the sector, at the European level 2 financing plans have been developed for the relaunch of European countries,

making € 37bn available to the Member States in the context of cohesion policy: the 'Coronavirus Response Investment Initiative (CRII)' and 'CRII Plus' adopted various recovery plans. Meanwhile, Italy adopted with Decree-Law on 19 May 2020, n. 34 called 'Rilancio' a Fund to support businesses and cultural institutions such as publishing, entertainment, and museums belonging and not to the public sphere. In addition, collaboration in the sector has been revealed essential in the absence of official guidelines to overcome the crisis (Mackay, 2022), although it was clear that the cultural system was not prepared to face it.

Museums and the approach to the digital strategies during the Covid-19 emergency

Today, museums have the role of the communicator of culture, where it develops an experience of knowledge and learning. Furthermore, the museum experience can impact the well-being development of cultural welfare (Lampis, 2017).

The concept of the museum is conceived as a space of democracy, an inclusive place, a participatory space that involves the community, which 'recognizes and faces the challenges of the present with the role of being the guardian of heritage to 'preserve, research, interpret and exhibit' (Fraser, 2019).

Technological innovation has also impacted museums, developing several contributions in museum management to understand the impact of digital on exhibitions (Vom Lehn and Heath, 2005) or analyzing the experience of virtual tours for visitors (Soren, 2005).

New media art includes all the digital strategies that a museum can adopt to engage the public recurring to Information and Communication Technologies (TIC), online collection, web, mobile, gaming, augmented reality, and social media. ICOM distinguishes three types of actions according to the strategy adopted by museums: Brochure, Content, and, Virtual. The first one elaborates contents for the web, the second constructs a database through the digitalization of collections, and the third elaborates the contents to ensure a similar enjoyment to the live experience.

Wang and Lin (2018) pointed out that the future of museums lies in adapting to digital as they evolve their structure and increase their competitiveness with others. It is necessary to establish a progressive strategy that leads to the transformation of museum content through the new media art.

Kahn (2020:3) writes, 'creating materials that are designed with digital in mind, rather than as an afterthought, would allow museums to consider how they might be able to act as both repositories, and science communicators to the entirely new audiences'.

The annual report of the Italian statistical Institute - Istat (2019) sustains that many museum structures are using technologies in the face of a low rate of digitization of heritage.

It generates an increase in audience engagement and better communication.

On the other hand, ICOM (2020) highlights the weaknesses of the cultural sector connected to the scarcity of resources dedicated to digital communication, the activities carried out and the investments made in this direction. In the last period, museums can approach digital with far fewer qualms and problems, always relying on internal resources both at an organizational and economic level (Politecnico Report, 2020).

Digital has proven to be the solution, but some have questioned the meaning of the experience. The latter involves the loss of reflection, immersion, and meditation in the face of direct contact with the masterpieces. According to Verdon, the digital has led to a simplification and loss of meaning of the live museum experience.

Other researchers reflect on the opportunity that the crisis has brought in terms of accessibility of materials (Kahn, 2020) although, policies for the provision and use of materials that regulate their use should not be underestimated (Frigo and Stabile, 2020).

The research of Agostino et al., (2020) questioned whether the pandemic crisis worked as an accelerator for the digital transformation process in those public service delivery sectors. Research highlights increasing activities and interaction on social while maintaining the educational role rather than entertainment, but also the need to take unplanned measures and make them part of a plan with the risk of introducing technologies with a high rate of obsolescence.

The pandemic crisis has been a moment of reflection for museums to develop digital strategies and online experiences, programming monetary investments to support an inclusiveness vision of digital resources (Xu, 2021).

However, there is a dilemma regarding how the cultural product is managed, whether it is free or not, raising the issue of economic sustainability and re-evaluation of the use of adequate internal resources in terms of training to develop and offer digital content. These are all aspects on which to base future reflections to accompany the process of digital transformation to be carried out not only to face an emergency.

Management crisis models and the role of social media and ICT

The pandemic caused by the Covid-19 outbreak should be considered a sudden shock that triggered a global health emergency, putting all sectors in crisis. Currently, the studies about the impact of the pandemic crisis on the cultural system do not relate to the actions and stages in which the crisis was

handled but highlight the response by the art world in addressing its audience using technology. Ou (2020) considers the museums' focus has been oriented in the short term to manage the emergency, but this must result in a future reorientation in how they want to operate.

The research literature on social networking and social media to manage crises is circumstantial to the natural disasters, health emergencies, financial crises, and terrorism with the impact on every level of organization's management (Mitroff, 2005), but very few in the cultural sector.

The term 'crisis' has taken on different connotations whether it refers to an organization (Seymour and Moore, 2000) or to a negative event that damages the environment and human life (Bland, 2000).

A crisis is caused by factors or situations internal or external to the organization and is the consequence of an intentional (e.g., terrorism) or unintentional (e.g., an accident) event (Coombes, 1995). Other cases are incidents that affect human safety, the environment, or a negative reputation of the corporations caused by the products (Heath, 1998).

The time horizon determines the impact on the organization (Meyers, 1987). Booth's (2015) model recognizes three types of crises sudden, periodic, and gradual threats.

For each crisis, there are consequences for the organization, which implies entire, partial, or gradual losses. Seymour and Moore (2000) introduce another two types of crisis called Cobra and Python. The first refers to the crisis that catches a company unprepared; it is a shock as a natural disaster. The second refers to the crisis that creeps gradually into the organization and could be caused by poor management. For sure, Bundy et al. (2016) identify four main features of a crisis such as uncertainty, a threat to the organizations and stakeholders' behavioral phenomenon, and part of processes.

Each of these crises involves a type of response that involves defensive actions based on trust and knowledge because in the context of a crisis or change the level of efficiency could be reduced as in the case of the implementation of public reform (Farantos and Koutsoukis, 2015). To resolve a crisis it is necessary to manage it; according to some models pre-crisis conditions must be restored to overcome it. Therefore, the crisis management model has considered a multidisciplinary area because it covers many topics and is articulated in different stages (Mitroff, 1996; Faulkner, 2001; Fink, 1986; Ritchie, 2004).

Researchers have addressed studies on different types of crisis management due to external factors: financial (Aliber and Kindleberger, 2015; Ferguson, 2012), tourism due to terrorism events (Faulkner, 2001; Evans and Elphick, 2005), health due to the spread of disease (Chien and Law, 2003). It is a process that involves four phases (Fink, 1986; Evans and Elphick, 2005): mitigation or prevention, readiness or preparedness, response or reaction, and

recovery (see figure 1). However, crisis management models assume that a crisis needs to be managed through prior forecasting and subsequent planning because the non-crisis phase prepares the organization to react in face of a possible scenario. Usually, the organizations do not implement this process (Bundy et al., 2016).

After that, it will follow the stage of crisis in which the organization can fail or survive. Meanwhile, it develops the phase of management and learning from the problems manifested and a return to the non-crisis situation.

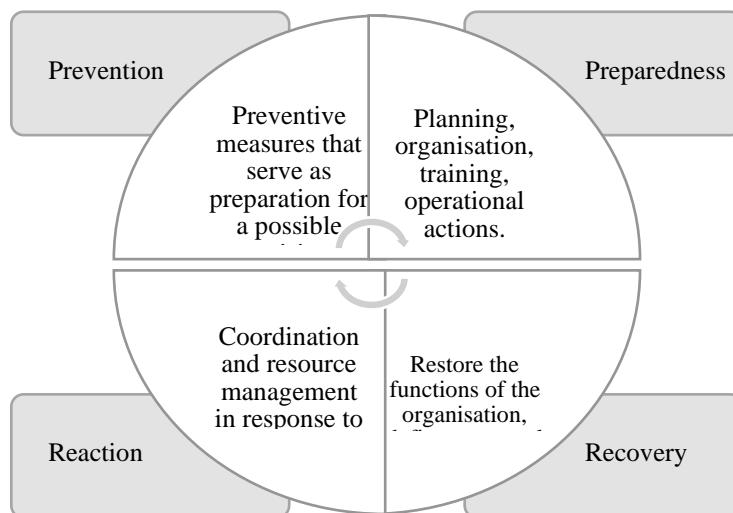


Fig.1: Stages of crisis management. Readaptation from Bundy et al. (2016)

In the last years, studies have explored the use of the Internet of Things as a function ability to communicate and impact in all stages (prior, during, and after) crisis management (Combes, 1999; Gonzalez-Herrero & Smith, 2008; Hughes et al. 2008; Liu et al. 2008; Vieweg et al., 2008), above all social media such as Facebook, Twitter, Instagram, Tik Tok and others (Alexander, 2013).

Many reasons support the use of social media during a crisis. They permit to analyze the environment in which a crisis happens, manage the communication because it is possible to reach the people, provide timely information and, to have a high degree of interaction (Sigala, 2012), to reply and reduce the risks (Alexander, 2013), obtain information by citizens, monitoring formal and informal communication (Flizikowski et al., 2014; Lachlan et al., 2016).

Method and Methodological approach

The work collects data from Italian museums about the impacts, actions, and decisions during the first wave of the pandemic. The aims are:

(1) Investigate whether digital and social media have been used to respond to a sudden threat or if it was part of a long-term plan.

(2) Investigate if digital and social media are tools that have helped and supported the museums in the management crisis.

This paper highlights data on the consequences of Covid-19 on Italian museums through the perspective of strategic crisis management.

It was made a review of the main reports about the Covid-19 scenario in the cultural sector and an analysis of the literature about patterns of crisis management.

A qualitative-quantitative method was used, with a grounded approach as analyses and studies on the phenomenon of Covid-19 crisis management in museums.

The sample involved the museums of 12 Italian regions representing Northern, Central, Southern Italy, and the Islands. According to ISTAT, in Italy, there are more than 4900 museums. However, there is not an official database containing lists and contacts of all Italian museums. For this reason, a database has been realized by the researchers through a web search. Only in the case of state museums sits the list of museums or sites belonging to the Ministry available on the MiBACT website with the contacts, where present, of the official channels. The database of contacts created counts 2,156 organizations between public and private management.

An e-mail has been sent to all museums with a letter of presentation about the research and the weblink to fill the survey addressed to the director, manager of the museum, or cultural services. The period of research covers May and June 2021.

The survey was structured in two parts

- a. The first one is related to the master data of the museums and understanding their organizational structure.
- b. The impact of the health emergency on the museum.
- c. The management of reopening.
- d. Innovation, communication, and digital.

The information has been analyzed according to the process of strategies adopted for the management of the crisis.

The Sample

The database includes 2,156 museums identified through web searching, but only 73% of the e-mail addresses were registered on the internet. Furthermore, 32% of e-mail addresses registered were incorrectly based on the number of automatic notifications of incorrect receipt. A 20% of the sample replied that they were not interested in taking part in the survey or that was closed before the pandemic period for other reasons (e.g., due to

renovation, lack of funds). Of the resulting sample, the final response rate was 14% because 7% did not reply to the survey.

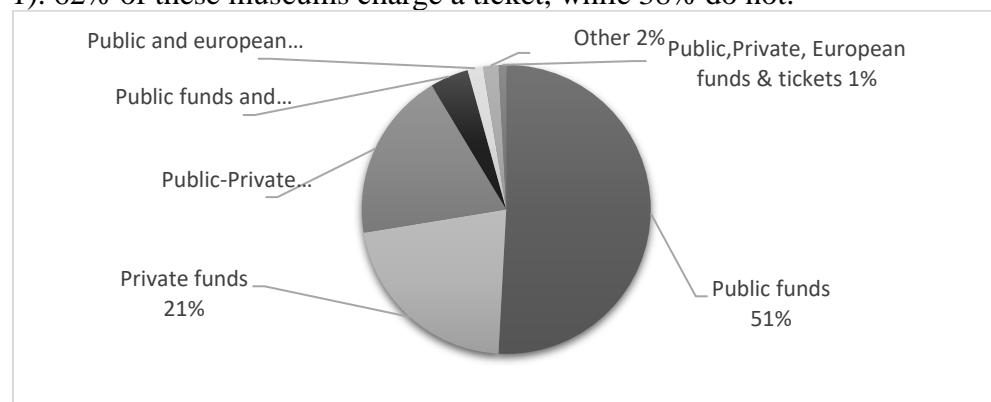
The top three regions in terms of response rate that took part in the survey were also those most affected nationally by the Covid-19, such as Lombardy (29%), Emilia-Romagna (23%), and Veneto (22%). Other participating museums are located in Lazio (10%), Campania (4%), Basilicata (3%), Sicily (3%), Puglia (3%), Aosta Valley (2%), and Friuli (1%). Last in line is Molise, where no museum takes part.

The highest concentration of responses per province concerns Lazio with Rome (10%), Belluno (6%), and Vicenza (6%).

From the answers, it emerged that the thematic area of the museum collection was represented by pictorial art (14%), mixed art collections (14%), Thematic or specialized (11%), Ethnography and anthropology (10%), Archaeology (9%), House Museum (8%), History (7%), Natural History and sciences (6%).

It was asked whether the museum was part of a network or museum system. In 35% of the cases, the answer was "no", 10% answered "yes" without specifying, and 9% did not answer. The remainder of the respondents indicated that they belonged to a network or they are organized into a regional museum system (11%), local network or circuit (11%), or thematic museum network (6%). The remaining percentages, much lower, reveal membership in other kinds of networks.

Concerning the economic structure, 51% of museums are supported by public funds, while 26% and 19% are supported by private or public-private funds. Only in 3% of the cases, European funding is involved as well as private funding, and in 1% of the cases, public funding is also involved (see Graphic 1). 62% of these museums charge a ticket, while 38% do not.



Out of 73% of the respondents, 61% declare to have between 1 and 5 employees, followed by 14% between 12 and 20 employees. Only in 2% of the cases are there more than 100 employees.

The size of these museums is defined by considering the factor of takings, attendance, and the number of employees.

Results

The impact of the lockdown and managing the re-opening.

Museums close during the end of January and March 2020, partly in line with governmental provisions and according to regional decisions. The lockdown required the sudden implementation of smart working for employees. The 12% of sample had their staff placed in smart working mode, while 48% had total accessibility to office space, and the remaining 40% proposes both alternatives.

At the same time, the State made available wage supplementation funds that were only partially used by 40% of the sample and never applied to the entire workforce.

As far as losses are concerned, 24% of the museums did not report any loss, and 19% of the cases losses amounted to €0, as they do not have an entrance fee or additional services. Small museums report in 11% of cases a loss between €50,00-500,00; a further 11% between €800,00-2,000. Small-medium size museums suffered losses starting from 3,000€ per month, up to a small percentage of 3% that have estimated losses between 500,000-1,000,000€ for the period.

About the public, 80% register a loss of more than 6,300 per month, others declared a loss of up to 150,000 visitors.

The management of the re-opening was affected by two factors: firstly, the deadline for the end of the lockdown and resumption of activities as per government regulations, and secondly, the need to guarantee secure access to the museums.

The reopening scheduled in May does not involve all museums, and some of them define several funds to invest. 34% of museums allocate funds for the reopening with a range of €200,00-3,000. Another 17% declares the intention to invest €5,000-15,000, and € 20,000- 50,000 (13%). Finally, 4% of the large museums plan to invest up to €500,000.

Museums stated that the budget allocated for the reopening is for safety, adaptation to comply with health regulations, to diversify the cultural offer, and providing new tools for the use and communication of the heritage.

For the 52%, there is the collaboration with experts, professionals or safety consultants, museum curators to re-evaluate exhibition spaces, communication experts, university lecturers, cultural designers, and, educational operators.

The aim was also to establish new collaborations with universities (11%), other museums (10%), local authorities (10%), the cultural and creative sector (7%), and banks (2%).

The main actions implemented are: ensuring workplace safety for employees, ensuring safety for visitors, and managing visits. In detail, museums indicate (see Table 1):

- a. Sanitisation, Personal Protective Equipment, Control of installations, signage.
- b. Adaptation of the premises and re-evaluation of the visit routes, signage, and sanitizing materials.
- c. Reservation system, reprogramming of supply and visits, visitor flow management system due to the introduction of visit limits.

There have been functional and mandatory choices to guarantee the cultural offer and fruition. The decision-making and strategic choices functional to the reopening are instrumental or rather obligatory and necessary. The museums have indicated instrumental actions to implement in the short term those useful for a safe reopening: adaptation, IPR, protocols, and guidelines (64% of the total). In addition, 4% respond to virtual and digital visits, while 8% re-evaluation of cultural programming.

On defining and reporting on medium-long term strategies, 62% of the sample did not express anything, while 13% stated that they are working on new activities for the fruition of the heritage through the digital.

A further 10% has planned marketing campaigns, to activate collaboration and intensify relations with international networks and the local area.

Short-term operative actions	Strategic actions in the medium and long term
• Security protocols (personal and public).	• Programming of cultural offers and new activities.
• Supplies of sanitation and hygiene materials, PPE.	• Programming of research activities.
• Scheduling visits and booking to manage visitor flows.	• Enhancement or introduction of digital.
• Staff reorganization.	• Marketing campaigns, social media development.
• Adaptation of the site (development of new visitor routes, signposting, information materials).	• New asset management methods
• Increased virtual visits.	

Tab.1: Actions and Activities of the museum on a different time horizon

Communication and Technological Innovation: the situation in Italian museums

The digital strategy, if adopted, requires adequate personnel and training to be pursued. In analyzing these aspects, one of the first questions was whether there was a communication and marketing office. In 70% of the cases, the answer is negative, and 43% of the respondents stated that another office not specialized works in communication and marketing. In 22%, it is a voluntary association or cooperative to which they outsource some services, while in 16% it is an employee in charge, and only in 7% of the cases there is a consultant/professional on contract. In 10%, it is either the museum manager or a museum curator. Some organizations are setting up an ad hoc office (2%).

On defining and carrying forward strategies over the medium to long term, 62% of the sample did not express an opinion, while the remaining 13% stated that they were reprogramming the characteristics of their cultural offerings to move them to a new level.

Only 53% of the surveyed museums claim to have invested in technology and communication strategies in the last three years. Looking at the amount of money, the 12% of them invested between €30,000 and €60,000, followed by a substantial 18% who invested between €1,000 and €5,000.

Large museums, both public and private have invested a large amount but represent a small percentage, as can be seen in Table 2.

Range of investments	% of museums
No response	44%
€ 0	7%
€ 1,000-5,000	18%
€ 6,000-10,000	6%
€ 12,000-20,000	5%
€ 30,000-60,000	12%
€ 80,000-130,000	5%
€ 200,000-300,000	2%
€ 3,500,000	1%

Tab.2: Investments in technology in the last three years

Data on the digital approach of Italian museums: the reaction phase

The digital strategy for museums encompasses several reference areas; in this analysis, we investigate three areas: institutional websites, social media (blog, community), and online connection (digitization, storytelling, social tagging).

3% of museums are not active on the web, while others declare to be present on at least one communication channel.

Among the social tools most used alone or in combination with others are websites (82%), Facebook (83%), Instagram (52%), YouTube (28%),

TripAdvisor (23%), Twitter (20%), Pinterest (5%) or others (blog, Flickr, Google business). 23% of the museum is active on two communication channels, while 22% has a profile on at least five platforms. This aspect shows the combined use of more than one tool and, above all, that museums have started to activate their online presence in recent years.

<i>Presence of marketing&communication office</i>	<i>Range of investments in technologies (last 3 years)</i>
<ul style="list-style-type: none"> • 86% no dedicated office. • 57% of museums involve staff with other competencies. • 20% of museums outsource marketing services. • 7% of museums have a contract with expertise. 	<ul style="list-style-type: none"> • 44% no response. • 18% € 1,000-5,000. • 12% € 30,000 - 60,000. • 7% € 0.
<i>Use of digital</i>	<i>Use of one or more Social media or platforms</i>
<ul style="list-style-type: none"> • 82% website. • 25% virtual reality. • 10% phone Apps. • 7% augmented reality. • 6% digital storytelling. • 4% no use. 	<ul style="list-style-type: none"> • 83% Facebook. • 52% Instagram. • 28% Youtube. • 23% TripAdvisor. • 20% Twitter.

Fig.2: Identifying the elements of the preparation stage

Communication and the use of digital: the reaction phase

Few museums increased their activity after the closure, the 11% have activated Instagram accounts, 5% Facebook and YouTube channels, and less activation of Twitter, Flickr, and other platforms (2%). 74% of the museums did not activate any new web channels or social networks.

<i>Digital and communication</i>	<i>Readjustment of contents</i>	<i>Reorganizing Human Resources</i>
<ul style="list-style-type: none"> • 74% No actions. • 11% Institutional web. • 10% Online collection • 5% Other (mobile, gamification, e-marketing). 	<ul style="list-style-type: none"> • 36% Digital visits. • 22% Online exhibition presentation. • 20% Webinair. 	<ul style="list-style-type: none"> • Staff reorganization (all museums). • New tasks (all museums).

Fig.3: The stage of the reaction

Museums were asked what actions they had implemented to keep in touch with the public. Seven categories of multimedia activities were selected and divided into subcategories. A distinction was made between actions implemented before and after the closing of the museum.

It emerges that digital storytelling(10%) and virtual tours (6%) were the most implemented actions. While video games and videos have been

introduced in a lower percentage by museums. However, at the time of the research museums already use digital tools, and those who were able to do so increased their activity.

<i>Multimedia content category</i>	<i>Multimedia sub-category</i>	<i>Pre-existing activities</i>	<i>Activities implemented after closing.</i>
1. Interactive Museography	Augmented reality	11%	2%
2. Institutional website	Virtual tour Website	8% 59%	6% 1%
3. Web video	Video	-	4%
4. Online collection	Digital Storytelling	5%	10%
5. Mobile	Application phone QR code	15% 2%	- -
6. Gaming	Videogame	1%	3%
7. E-marketing	E-commerce	-	1%

Tab. 4: Museums' digital strategy before and during the Covid-19 crisis

Reassessing the relationship with the public and the museum management model: the recovery phase

From the questions posed to the managers or directors of museums, it emerges the need to invest in the strategy of digital technology to improve the access to the cultural heritage. This consideration was made in the light of the period that has kept the public physically away from the museums. Museums have re-evaluated the management of their relationship with their public, guaranteeing first the safety of the places and aiming at loyalty-building actions, resumption of direct contact through the integrated offer with guys, more inclusive participation, and new ways of enjoying the visit.

In the case of these museums, digital is confirmed as an element that makes it possible to rethink the museum model about the experience to be offered to the public and the ways to take part in the visit whether on-site or off-site.

The digital belongs to three moments of the visit experience before, during, and after. On the other hand, there is also an orientation towards a renewed cultural offer that begins to integrate the logic of sustainable tourism. Another more instrumental action for the public is the organization and management of services, including the introduction of ticketing where it is not foreseen, a reservation system, and visitor flow management.

The second aspect of museum management that emerges concerns the internal organization of work, which aims to enhance smart working as a way of working for employees.

Finally, at the basis of the re-evaluation of the museum management model, two factors emerged which imply a relationship with other stakeholders, both institutional and non-institutional. The importance of

developing an approach that aims at networking and directing funding, especially public funding. Further, there is the openness to collaboration with private bodies useful to rethink the museum model and redefine its activities.

<i>Re-evaluation of the museum management model</i>	<i>Readjustment of contents</i>	<i>Developing new approaches for the valorization of cultural products</i>
<ul style="list-style-type: none">• 43% No response• 20% No re-evaluation.• 12% Increase in digital.• 12% Managing customer services.• 4% Smart working.• 2% Relations with organizations.	<ul style="list-style-type: none">• 50% No response.• 15% Increase in Communication.• 15% Actions of audience development and engagement.• 10% Increase in digital content offer.	<ul style="list-style-type: none">• 46% No response.• 29% Multimedia content, digital devices.• 15% increase in communication.• 6% Experiential approach.• 4% Integrate the network with the territory.

Fig.4: The stage of recovery

Discussion and Conclusion

The cultural sector is susceptible to the crises arising from other sectors such as the economy, the tourism sector, and security from unforeseen events. Currently, the crisis faced by the cultural and museum sector stems from the impact of a health shock. The Nemo report (2020:1) states 'we must learn from this crisis to effectively respond, mitigate, adapt and integrate'

Italian museums reacted to the closure, which led to a loss for all organizations involved, by implementing actions to maintain contact and relations with the public.

According to the management crisis models, the actions taken by the museums are related to two macro areas: functional actions to be implemented immediately to avoid a further worsening of the critical situation and actions to be evaluated and implemented in the medium-long term.

In the first case, since the objective of the museums is to maintain the relationship with the public and fulfill their educational, cultural, and heritage mission, they acted along two lines: one oriented towards safety and the other towards communication and use. Thus, museums have indicated as short-term objectives the implementation of guidelines to adapt the museum structure to the employees and the public. At the same time, the web has had the function of supporting museums in their role as communicators of cultural content through a wide application (e.g., institutional websites, virtual tours, digital projects, digitalization of materials).

Reacting instantly is not the only solution. To manage the crisis and ensure a recovery it is necessary to set long-term goals and introduce the aspect of planning which is too absent in the management of our museums.

The application of a crisis management model applied to museums in the context of the pandemic emergency revealed:

- 1) the Absence of a Preventive phase, a kind of gray area. Most of the museums investigated prevent the operational risk related to their activity: damage to heritage and works (in 90% of cases) but had never considered the risk of immediate closure.
- 2) The Preparation phase. Museums are found to be active and 'prepared' as far as communication is concerned (82% stated that they have a website) as it has been found to have strategies already in place. The prepared phase coincides with the degree of redness of museums for digital support and communication development to continue opening, guaranteeing enjoyment, and fulfilling their mission.
- 3) The Reaction phase detects if there was an adaptation to the context using the resources already present or if a reaction was matched by the implementation of new instruments. The results underline a weak implementation of new tools and more attention to the action on visits and transformation of content to disseminate them.

There is an increase in digital visits, webinars, and the online presentation of exhibitions already planned but not available due to closure.

- 4) The Recovery phase corresponds to the reassessment of strategies and actions for the future. Rethinking the cultural offer by providing exhibitions and events that are not live, increasing multimedia and digital content, opening to the outside world with new forms of collaboration, and re-evaluating the relationship with the public.

After the analysis, it can say that the museum does not use the social media to prepare and prevent the crisis by scanning the environment (Ramsey, 1994), searching for changes and new trends (Coombs, 1999), but to have proactive communication with the audience (Thomsen, 1995) during the lockdown period.

Recommendation for future research

For future research development it could be interesting to apply the model of strategic crisis management (Taneja et al., 2014) from the perspective of the museums' directors to understand actions, activities, and impact on the internal organizations (e.g., workers, volunteers) and external stakeholders. The application of the model of crisis management can help

these organizations to understand in a strategic view the main steps to be prepared for every threat or uncertainty context.

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