"Digital technologies and cultural tourism in the time of COVID-19: the case of museums and cultural centres in Athens"

Master Thesis

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The thesis is dedicated to my parents, who have always been supportive, through good and hard times, and who have encouraged me to pursue this journey.

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Abstract in Greek

Τις τελευταίες δεκαετίες, η ραγδαία αύξηση της τουριστικής και πολιτιστικής βιομηχανίας έχει διαμορφώσει ένα ιδιαίτερα ανταγωνιστικό περιβάλλον για τα μουσεία και τους πολιτιστικούς οργανισμούς. Ταυτόχρονα, η ανάγκη των σύγχρονων καταναλωτών για ενεργό συμμετοχή στη συν-δημιουργία της εμπειρίας τους έχει οδηγήσει τα μουσεία στην υιοθέτηση νέων τεχνολογιών, για την προσέλκυση και την διατήρηση τουριστών και γενικότερα επισκεπτών. Ωστόσο, το πρόσφατο ξέσπασμα της πανδημίας του κορωνοϊού είχε σημαντικό αντίκτυπο στους πολιτιστικούς οργανισμούς, επιταχύνοντας ή προκαλώντας τον ψηφιακό τους μετασχηματισμό. Σε αυτό το πλαίσιο, η παρούσα εργασία στοχεύει να εξετάσει τη χρήση νέων τεχνολογιών για την προσέλκυση και διατήρηση τουριστών και γενικότερα επισκεπτών, πριν και μετά την πανδημία του κορωνοϊού. Η μελέτη εστιάζει στην Αθήνα, την πρωτεύουσα και μεγαλύτερη πόλη της Ελλάδας, η οποία έχει αναδειχθεί τα τελευταία χρόνια σε δημοφιλή πολιτιστικό και city-break προορισμό. Για το σκοπό της μελέτης αυτής, υιοθετήθηκε μικτή μεθοδολογική προσέγγιση, όπου εξετάστηκαν 7 πολιτιστικοί οργανισμοί μέσω ημι-δομημένων συνεντεύξεων, ερωτηματολογίων και ανάλυση περιεχομένου ιστοχώρων. Τα αποτελέσματα έδειξαν ότι, παρόλο που οι τουρίστες είναι μια σημαντική πηγή εσόδων για όλους τους συμμετέχοντες οργανισμούς, μόλις ορισμένα ιδιωτικά μουσεία έχουν θέσει την αύξηση ή την διεύρυνση του διεθνούς κοινού τους ως στρατηγικό τους στόχο. Επιπλέον, τα ψηφιακά μέσα ενημέρωσης έχουν σημαντικό ρόλο στην προσέλκυση τουριστών, ειδικά για μη-δημόσιους οργανισμούς, ωστόσο, ο βαθμός αξιοποίησής τους εξαρτάται από τη διαθεσιμότητα εξειδικευμένου προσωπικού. Σχετικά με τις ψηφιακές τεχνολογίες κατά την εμπειρία της επίσκεψης, τα αποτελέσματα έδειξαν ότι οι μη-δημόσιοι οργανισμοί τείνουν να χρησιμοποιούν περισσότερα ψηφιακά μέσα για να ενισχύσουν την συν-δημιουργία της μουσειακής εμπειρίας, ενώ η ποσότητα των ερμηνευτικών εργαλείων φαίνεται να εξαρτάται από το είδος της έκθεσης. Τέλος, κατά τη διάρκεια της καραντίνας, παρατηρήθηκε αυξημένη παραγωγή ψηφιακού υλικού και δραστηριότητα στα μέσα κοινωνικής δικτύωσης από μη-δημόσιους οργανισμούς με εξειδικευμένο προσωπικό, ενώ οι οργανισμοί με ισχυρότερη εταιρική ταυτότητα ήταν εκείνοι που αξιοποίησαν την πλούσια ψηφιακή τους παρουσία για να προσελκύσουν διεθνές κοινό.

Key Words: νέες τεχνολογίες, μουσεία, εμπειρία επισκέπτη, κορωνοϊός, ψηφιακός μετασχηματισμός

Abstract in English

During the last decades, the unprecedent growth of the tourism and cultural industry has created an increasingly competitive environment for museums and cultural organisations. At the same time, the need of contemporary consumers for active involvement in the co-creation of their experience have led museums to adopt digital technologies, as a means to attract and engage tourists and cultural consumers. Nevertheless, the recent breakout of COVID-19 pandemic has had a tremendous impact on cultural organisations, and it has provoked or accelerated their digital transformation. In this context, the present study aims to explore the use of digital technologies for attracting and engaging tourists and cultural consumers before and after the breakout of the COVID-19. The study focuses on the city of Athens, the capital and major metropolitan area of Greece, that has emerged as a popular cultural and city-break destination in the last years. For the purpose of this study, a mixed methods approach was adopted and seven cultural organisations were examined through semi-structured interviews, questionnaires and website content analysis. The findings showed that, while tourism was an important source of revenue for all participating organisations, only a few private museums had set the increase or expansion of their international audience as a strategic objective. Furthermore, digital media had an important role in attracting tourists, especially for non-public entities, however, their level of exploitation was dependent on the availability of specialised staff. When it comes to digital technologies throughout the customer journey, our findings showed that non-public entities tended to use more digital technologies to enhance co-creation during the visit, while the quantity of digital interpretation tools depended on the type of the exhibitions. Finally, during the lockdown period, increased digital content production and social media activity were observed in non-public entities with specialised staff, while organisations with a strong brand identity were those who exploited their rich digital presence to attract an international audience.

Keywords: new technologies, museums, visitor experience, COVID-19, digital transformation

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Abbreviations

AR	Augmented Reality
COVID-19	Corona Virus Disease 2019
EMST	National Museum of Contemporary Art
GDP	Gross Domestic Product
GNTO	Greek National Tourism Organization
HoC	Head of Communications
ICOM	International Council of Museums
ICT	Information and Communication Technologies
MOMA	Museum of Modern Art
MCA	Museum of Cycladic Art
NAM	National Archaeological Museum
SIT	Special Interest Tourism
SNFCC	Stavros Niarchos Foundation Cultural Center
UNWTO	United Nations World Tourism Organisation
VR	Virtual Reality

Introduction

During the last decades, the disruptive force of globalisation and the development of tourism and leisure industry have increased interest in museums and cultural organisations worldwide. Museums are considered to reflect the culture of a destination and help define the identity of a place and have traditionally been popular destinations for cultural tourists and city-breakers (Graburn 1998; Misiura 2006).

However, the unprecedent growth in the tourism and cultural industry has created an increasingly competitive environment for museums and cultural organisations. The global economic crisis in recent years has highlighted the need of museums to generate their own income, which has led to an increasing dependency on the buying power of consumers (Zukin, 1995). Tourism is an important source of revenue for museums, especially those located in urban areas, therefore their focus has shifted towards offering competitive cultural products and experiences. To achieve that, museums and cultural organisations have adopted business-oriented approaches, by developing strategic plans and priorities to achieve their goals.

The shift of paradigm in museums is also related to the growing visitors' needs, who are increasingly looking for holistic and engaging experiences (Di Pietro et al., 2015), which has led to the development of new types of tourism and cultural products, related to contemporary culture, creativity and every-day life. Thus, museums need to adjust to the needs of contemporary tourists in order to attract their attention, increase their competitiveness and stay relevant. A way to achieve that is by offering compelling, memorable experiences (Pine and Gilmore, 1999) and by involving tourists and visitors in the co-creation of their experiences (Prahalad & Ramaswamy, 2004).

The evolution of technology and the widespread of internet has allowed cultural consumers to be involved in both the production and consumption of their experience and increase their satisfaction. Therefore, museums are increasingly adopting digital tools, including digital media and computing technologies to attract and engage tourists and cultural consumers and increase their competitiveness. Digital technologies offer many advantages to museums, as they can be used both as interpretation tools and points of interaction, during the museum experience, but they can also be used as an effective marketing and communication tools to attract different target groups.

Nevertheless, the breakout of COVID-19 pandemic in early 2020 has dictated mobility, health and hygiene restrictions, which have disrupted the operation of businesses and organisations around the world as well as tourism activity. The lockdown period during March-May 2020 and the consequent restricted operation of museums and cultural organisation have given rise to the importance of digital technologies and digital media for engaging their audience and ensuring business continuity. Thus, the COVID-19 crisis has brought forward significant challenges for museums and cultural organisations: while some of them are moving towards digital transformation, others are facing significant financial difficulties that may even threaten their survival.

Hence, the present study aims to explore the use of new technologies for attracting and engaging tourists and cultural consumer before and after the COVID-19 breakout. The study focuses on the city of Athens, the capital of Greece, that has emerged as a popular cultural and city-break destination in the last years. More specifically, the aim of this study was threefold:

To explore whether and how museums and cultural centres of Athens exploit digital technologies:

1) To attract tourists, as a strategic objective
2) To allow co-creation of the experience during the customer journey, before the COVID-19 breakout
3) To ensure business continuity and customer engagement during the COVID-19 period

To explore these aims, the study adopted a mixed methods approach by combining qualitative methods (interviews), quantitative methods (questionnaire survey) and secondary data analysis (website content analysis) for 7 cultural organisations. This approach allowed us to understand the kind of digital technologies used and to reveal perceptions, different dimensions of the topics, challenges or opportunities from a management perspective. The study is organised as follows: In first chapter, the importance of cultural tourism for the tourism development of Athens is discussed. The second chapter discusses the evolution of museums and the role of digital technologies as interpretation and as marketing tools. The third chapter presents the impact of COVID-19 pandemic in cultural organisations and the digital transformation of museums. In the fourth chapter, the present study is presented, i.e., the case of Athens through its museums and cultural centres and the methodology of the study is discussed. The fifth chapter presents the findings of the study and their implications for organisations and policy makers, including suggestions for future research.

Chapter 1: Cultural tourism and sustainable development

1.1. Sustainable tourism development

According to the United Nations World Tourism Organisation (henceforth UNWTO), "*tourism is a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes.*" In recent decades, tourism has become a major economic sector at a global scale. In 2019, international tourist arrivals reached 1.5 billion, showing a 4% growth compared to 2018 (UNWTO, 2020). The direct contribution of travel and tourism to global Gross Domestic Product (henceforth GDP) was estimated to be approximately 2.893 billion US dollars in 2019, accounting for 3,3% of the total global GDP (Statista, 2021). The tourism sector was also directly or indirectly responsible for 10% of total employment in 2019, amounting to approximately 330 million jobs (WTTC, 2020). As an international activity, tourism is sensitive to international changes, be it social, economic, political or technological. The recent breakout of COVID-19 pandemic, in early 2020, has had a tremendous impact on the tourism sector with a plunge of 74% in international arrivals, an estimated loss of USD 1.3 trillion in export revenues and 100-120 million direct tourism jobs at risk in 2020 (UNWTO, 2021).

Nevertheless, as one of the world's largest and fastest-growing industries, it has been associated with social, cultural and environmental pressure on the host communities, giving rise to the concept of sustainable tourism, a recurrent theme in the tourism literature of the past 30 years. Sustainable tourism development was first introduced as a concept back in the 1980s by the United Nations and it was associated to strategic tourism planning with the aim to minimize the adverse effects and the environmental footprint of mass tourism (Belias, Velissariou, Kyriakou, Koustelios, Sdrolias & Mantas, 2016). Mass tourism refers to "*the movement of a large number of organized tourists to popular holiday destinations for recreational purposes. It is a phenomenon which is characterized by the use of standardized package products and mass consumption*" (Naumov and Green, 2016: p.1). While mass tourism brings an overall volume of revenue that supports economic growth, it is considered an aggressive type of development; The extreme concentration of tourists in one place often results in the saturation of the place, and therefore its degradation and its loss of attractiveness (Dehoorne, 2006).

To mitigate these problems, communities have turned to alternative types of development aiming to achieve long term sustainability. The concept of sustainable tourism is defined by the UNWTO as "*tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities*" (UNEP & UNWTO, 2005). The relevant discourse has therefore shifted its focus from a narrow tourism-growth perspective to the broader development of a destination by focusing on the interconnection among its different sectors. To achieve that, destinations aim to expand to more sophisticated tourism markets that have different consumption patterns, in relation to mass tourism, and are interested in destinations with local and unique characteristics (Coccossis, 2001).

In this context, Special Interest Tourism (SIT) products have emerged, such as sports tourism, cultural tourism, agrotourism or wine tourism, that address the needs of visitors that are motivated to travel by personal interest and wish to know the dimensions of a place that are not displayed to mass tourism. These types of tourists are usually characterized by higher educational level, greater purchasing power and greater interest in the authentic features of a place, compared to mass tourists (Coccossis, 2003; Belias et al., 2016). Thus, tourism development focusing on these markets could be milder and more sustainable, with respect to the local economies, the natural and the human resources of the destination.

1.2. Cultural tourism

Nowadays, one of the main reasons for travelling to a destination is to explore the cultural resources of the place, to the extent that cultural tourism is not considered anymore an alternative type of tourism in some parts of the world (Smith, 2016). Cultural tourism has been defined by the UNWTO as "*A type of tourism activity in which the visitor's essential motivation is to learn, discover, experience and consume the tangible and intangible cultural attractions/products in a tourism destination. These attractions/products relate to a set of distinctive material, intellectual, spiritual and emotional features of a society that encompasses arts and architecture, historical and cultural heritage, culinary heritage, literature, music, creative industries and the living cultures with their lifestyles, value systems, beliefs and traditions*". (UNWTO, 2017).

Despite the growing body of scholarly work on this field, there has not been a general consensus with regards to the definition (Dolnicar, 2002; Hughes, 2002). Early researchers focused on motivational factors, defining cultural tourism as a form of travel in search of new authentic experiences (Hall & Zeppel, 1991; Reisinger 1994) or for personal enrichment (Silberberg, 1995), while other made distinctions based on whether the motivation is primary, secondary, or incidental (Hughes and Benn, 1995). Nevertheless, others prefer a narrower definition and focus on the consumption of cultural services, rather than motivation (Hughes, 2002).

Cultural tourism is one of the largest and fastest growing global tourism markets (UNWTO, 2004). It is noteworthy that 26% of the European citizens said that culture was their main reason for travelling and 31% would return to the same place for holidays due to its cultural and historical attractions (Eurobarometer, 2016). A recent review by the UNWTO (2018) confirmed that 'cultural tourists' make up almost 40% of all international travellers, or 530 million cultural tourists in 2017. As a mild type of tourism activity, cultural tourism development can increase the attractiveness of destinations, enhance their competitiveness and develop a more sustainable tourism model (Vanhove, 2011).

Cultural tourism forms a popular target market especially for European countries with a long history and rich cultural resources, such as Paris in France, Rome in Italy, or Athens in Greece. While "sun, sand and sea" tourism is obviously concentrated during the summer months, cultural tourism is non-seasonal in nature, as it is not constrained by the climate and can be provided all year round (see among others Jansen-Verbeke, 1997; Butler, 2001; Liu, 2014). Thus, it is recognised as one of the main resources to counteract seasonality in tourist destinations.

Regarding the cultural tourists' profile, they have been widely depicted in the literature as ageing and with higher educational and socioeconomic status than non-cultural tourists (e.g. Ashworth, 2004; Figini & Vici, 2012; McKercher, 2002; Richards, 2001). While this tourist profile seems axiomatic, some empirical studies in recent years have pointed out the emergence of a 'new cultural tourism' that is no longer depicted as ageing (such as ETC & WTO, 2005; Del Corpo, Gasparino, Bellini, & Malizia, 2008; Vergori & Arima, 2020). More specifically, ETC & WTO (2005) showed that cultural tourists visiting Europe tend to have a high educational status and relatively high incomes while their age varies across all age group, with

a peak group between 20- and 30-year-olds. Similarly, Vergori & Arima (2020), showed that although the average age of tourists is increasing, cultural tourists are becoming younger.

Therefore, cultural tourism development may have significant benefits to a destination, at an economic, social and environmental level, considering the greater purchasing power of the visitors, their educational level, their young age and their interest in authentic experiences, as well as its contribution to diminishing seasonality. As a result, more and more countries invest in attracting cultural tourists, one of which is Athens, the capital of Greece, which has recently emerged as a popular city-break destination.

1.3. Tourism development in Athens

Greece is a country in the south-east of Europe, a key position with connections to Europe, Asia, Africa and the Middle East. Tourism is one of the most important factors of its economic development, thanks to the Polynesian structure of the country (16,000 km of coastline), the Mediterranean climate and the abundant historical and cultural heritage, among others (Tsartas, Papatheodorou & Vasileiou, 2014). Athens, the capital of Greece, is the dominating metropolitan area of the Greek urban system, with a population of 3,154,000 inhabitants in 2019 (MacroTrends, 2020), almost one third of Greece's total population. The city is considered as one of the most significant historical capitals of Europe, as it is a city endowed with rich ancient history and of great archaeological interest.

At the first stages of Greek tourism development, after the 1950s, most tourists were independent travellers and were mainly travelling to visit antiquities and historical sites. Athens, the capital of Greece, was usually the centre of their journey, on the basis of its cultural and archaeological tourist product and its urban landscape. Since mid-1960s, tourism has been spreading throughout the Aegean islands and Crete, with the rise of the mass tourism model, while cultural tourism was only a secondary priority, in the form of brief visits to museums and archaeological sites. Especially after 1985, the increasing tourism demand for the Greek islands led to the transformation of Athens into one- to two-day stopover destination or simple point of entry of tourists into the country (Tsartas, Papatheodorou & Vasileiou, 2014).

Athens has been losing its status steadily (Briassoulis, 1993) due to factors relayed to urban sprawling, such as limited natural landscapes, unpleasant environmental conditions, out-dated infrastructure and overall lower quality of life, compared to other European capitals (Boukas, Ziakas & Boustras, 2012). While in the 1950s the international arrivals at the Athens airport accounted for 90-95% of the country's total, in 1980 the figure was 58% and in 1999 only 25% (Asprogerakas, 2006; GNTO, 2011). In addition to the decrease in tourism demand, Athens also suffered from acute seasonality, despite the fact that large cities tend to have less seasonal patterns than sea resorts (Butler, 1995). In 2000, 51% of international tourists visited Athens between July and September while only 6% travelled to Athens between January and March.

The Olympic Games of 2004 are considered a landmark for Athens tourism development. The overall restructuring of the city (Tsartas, Koutoulas & Papatheodorou, 2008) aimed to achieve a higher level of operation and bring out Athens as an emerging Metropolis of south-eastern Europe (Beriatos, 2006). The quality increase of the destination (Tsartas et al., 2008) was reflected on the overnight stays in hotels in Athens, that rose from about 3,999,000 in 2004 to more than 5,146,000 in 2007, showing a 28,7% increase. However, post-Olympic Athens was still not as competitive as other Greek coastal destinations, with regards to tourism product (Weed, 2008), predominantly due to lack of strategic planning (Beriatos, 2006; Gospodini, 2009). Since 2008, the city hotels' capacity started to decline, as a result of the global economic crisis, the negative publicity about riots in the streets and the decreasing interest of Tour Operators for the city (Koutoulas, Tsartas, Papatheodorou and Prountzou, 2009).

However, since 2013, tourism in Athens seems to have recovered from the economic recession. According to Kampouris (2019), while in 2012 Athens hosted only 2.5 million tourists all year round, in 2019 the capital hosted more than 5.7 million tourists. In addition, the touristic identity of the city has been refreshed: Athens is gradually becoming a dynamic destination of cultural heritage and city-break tourism, characterised by short visits, often involving visits to museums, galleries and restaurants (Smith, 2016). New markets have also opened, such as youth tourism and congress tourism (AHA 2017). The city is moving away from the one-dimensional cultural image focused on its ancient heritage and it is systematically promoted as a destination with a multidimensional character which can offer a wide range of different cultural experiences to the visitors (Tsartas and Sarantakou, 2016; Skoultsos 2014; Sarantakou and Xenitellis, 2019). This evolution is attributed to different factors. Some of them are related to a tourism policy strategy aiming at differentiating Athens tourism product (Sarantakou and

Xenitellis, 2019), while others are related to the rise of the phenomenon of short-term renting, mainly expressed through Airbnb housing, which acted as a transforming force for many of the city's neighbourhoods. (Papatheodorou & Arvanitis, 2014). The sharing-economy tourists belong mainly to the group of millennial city breakers, while 71% of AirBnB users were visiting Athens for the first time and sought for authentic experiences. (Airbnb, 2015). Other factors concern the enrichment of the capital's cultural infrastructure with museums and cultural centers during the last decades, such as the Stavros Niarchos Foundation Cultural Center, the Onassis Cultural Center, the Goulandris Museum of Contmporary Art, the National Museum of Contemporary Art among others.

Museums are considered to reflect the heritage or culture of a place and to help define the overall cultural identity and tourism product of a destination (Graburn 1998, Misiura 2006). Besides the increasing discourse about the evolution of Athens' image, the contribution of museums and cultural centres on the upgrade of Athens cultural product has not received enough attention in the literature, to our knowledge. The present study will focus on this direction, by exploring how museums and cultural centres in Athens exploit digital technologies to stay relevant and engage tourists.

Chapter 2: Digital technologies and the museum experience

2.1. Evolution of museums

2.1.1. Museums' mission

The original idea of a museum is based on a collection-focused, building-based institution, aiming to safeguard cultural heritage and encourage appreciation and knowledge of the past (Brida, Meleddu, & Pulina, 2016). However, this model has been widely criticized, since the 1970s, as elitist, obsolete, and isolated from the modern world (Hudson, 1977). Since then, a gradual shift of focus is taking place from traditional values of custodianship, preservation and interpretation to the needs of the community as a core value, an approach known as 'new museology' (Brown and Mairesse, 2018). As defined in 2007 by the International Council of

Museums (ICOM), the Paris-based body that represents and promotes museums worldwide: *"A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment."* Indeed, over the years, museums are focusing more and more on social inclusion, education and recreation, encouraging new types of communication and styles of expression (Mairesse and Desvallées, 2010).

2.1.2. Strategic planning in museums

During the last decades, the disruptive force of globalisation and the development of tourism and leisure industry have increased interest in museums and cultural organisations worldwide. Nevertheless, this unprecedented growth has created an increasingly competitive environment in the cultural industry, as institutions are struggling to attract the attention of visitors (Shapiro and Varian, 1999**).** At the same time**,** the global economic crisis and the reduction in government support has highlighted the need of museums to generate their own income, which has led to an increasing dependency on the buying power of consumers (Zukin, 1995). In addition to that, visitors' needs are growing, as they are increasingly looking for holistic and engaging experiences (Di Pietro et al., 2015). All these factors have underlined the need for greater management efficiency and effectiveness and have led cultural institutions to adopt market-oriented approaches.

Thus, museums around the world are developing business-model management and development strategies as they are moving "from the curator to the entrepreneurial museum" paradigm (Vivant, 2011). In contrast to the business sector, the focus of museums and cultural institutions is not on the maximization of profit but rather on the dissemination of culture and on the service of a wider range of stakeholders or even society as a whole. To achieve that, they increasingly develop strategic plans, which include:

- long-term goals, in line with the vision of the organization
- short-term objectives and actions to achieve those goals
- strategic priorities

Strategic planning is becoming increasingly important for cultural organisations as it allows them to identify the challenges or opportunities arising, as well as potential threats that might

occur from the external or the internal environment of the organisation. It also facilitates co-ordination and collaboration among different departments, and it promotes a contemporary management atmosphere, based on responsibility and discipline. The strategic plan is essential for attracting and managing resources, such as funds and donations but also human resources, while it allows the assessment of their performance, in relation to the organisations' goals (Vila and Canales, 2008).

Strategic planning involves six main steps, with the first describing the organisation's mission, including its vision, target audience, products or services and competitive advantage. The next step involves the assessment of the external and the internal environment, known as SWOT analysis. The external environment is related to collaborators, vendors as well as to the economic and political situation, the evolution of technology or the legal framework, among others, which help organisations identify trends, threats and opportunities. The internal environment is related to the factors that affect the results of the organisations, such as the human and financial resources or professional know-how, among others, which allow the organisation to identify the strengths and weaknesses of the organisation. Thus, an effective strategy can be created, based on how these strengths and weaknesses can be used to address potential threats or opportunities. The next step involves setting specific goals and developing policies and methods for their achievement, as well as developing a business development plan, including fundraising and marketing plans. Finally, the last steps include inspecting and assessing the results of the strategic objectives.

An example of application of the strategic paradigm in cultural organisations is the 2018-2020 strategic goals of the Guggenheim Museum Bilbao, a superstar museum, which focuses on defining a more dynamic role, promoting knowledge-generating projects, ensuring sustainability and developing alliances for the promotion of innovation. The steps for achieving those include the consolidation of the museum's artistic identity and the development of a digital strategy to maximize its leadership in the museum and education communities.

Museums make efforts to gain competitive advantage over other cultural or leisure activities, that are increasingly attracting the tourist gaze. Cultural tourism is now based, not just on tangible heritage from the past, but also on contemporary culture and creativity, neighbourhoods and everyday life. Thus, museums are struggling to remain competitive by investing in productive factors, such as infrastructure, human capital, technology and

organization, and in innovative ways that these factors can be combined. **Museum branding** is considered as one of the major corporate management strategies and can be achieved through a combination of innovative exhibitions and sophisticated architecture and design. Well-known architects ("starchitects") are often employed to design cultural institutions as a branding strategy, as in the case of Renzo Piano, that has designed the NEMO Sciences Museum in Amsterdam, and Frank Gehry, that has designed the Louis Vuitton Foundation in Paris. The **location** can also become a competitive advantage, such as the proximity to the city centre, proximity to other attraction centres or a good public transport connection. Another important factor for enhancing museums' competitiveness is the **human capital**, a fundamental resource in the service industry. Sufficient training, specialization and expertise are key to the museums' constant development.

Furthermore, differentiation of the cultural offering can be achieved through **innovation**, by introducing compelling experiences (Pine and Gilmore, 1999) and digital technologies (Zukin, 1995; Prahalad & Ramaswamy, 2004). Cultural consumers are more and more interested in co-creating their experience, also by means of technology as modern visitors are largely digitally literate. Thus, cultural institutions are more and more concerned with offering unique experiences and exceeding visitors' expectations, as a means of enhancing their performance (Camarero, Garrido and Vicente, 2015).

2.2. Cultural consumers and the concept of experience

2.2.1. The experience economy

In the last decades, the focus of researchers and professionals has shifted from the reasons to visit a cultural institution, to exploring the components of the experience desired by cultural consumers. The literature has shown that cultural consumers seek for engaging experiences, that provide education, pleasure, entertainment and emotions (Holbrook & Hirshman, 1982; Nowacki, 2010; Hosany, 2011), as well as the opportunity for social interactions (Pine & Gilmore, 1999). The 'experience economy' concept was introduced by Pine and Gilmore (1999) and suggests that companies and organisations do not compete in terms of market price but rather in terms of distinctive value of their offerings. Economic value is, thus, moving from the provision of services, which are intangible, to the staging of experiences, which are

memorable (Figure 1). The need of consumers for high value and their willingness to pay a high price for obtaining it, points out the strategic production of experiences as a worthwhile concept for business and organisations (Darmer & Sundbo, 2008).

Pine and Gilmore (1999) have proposed the four dimensions of the experience, namely, aesthetic, learning, entertainment, and evasion. The authors have diagrammed the process of engaging a visitor (Figure 2), based on the level of customer participation (from passive to active) and the type of connection to the event (from absorption to immersion). According to this model, when visitors take part in an aesthetic experience, they immerse themselves in the activity with different senses but have no effect on it, as in the case of a gallery visit. In the realm of entertainment, visitors passively absorb experiences through the mind, as watching a movie or attending a concert. An educational experience might involve more active participation, like attending a workshop or an art lesson, but students are still more outside the event than immersed in it. During an escapist experience, visitors are both immersed and have an active role, such as acting in a play or using Virtual Reality technologies.
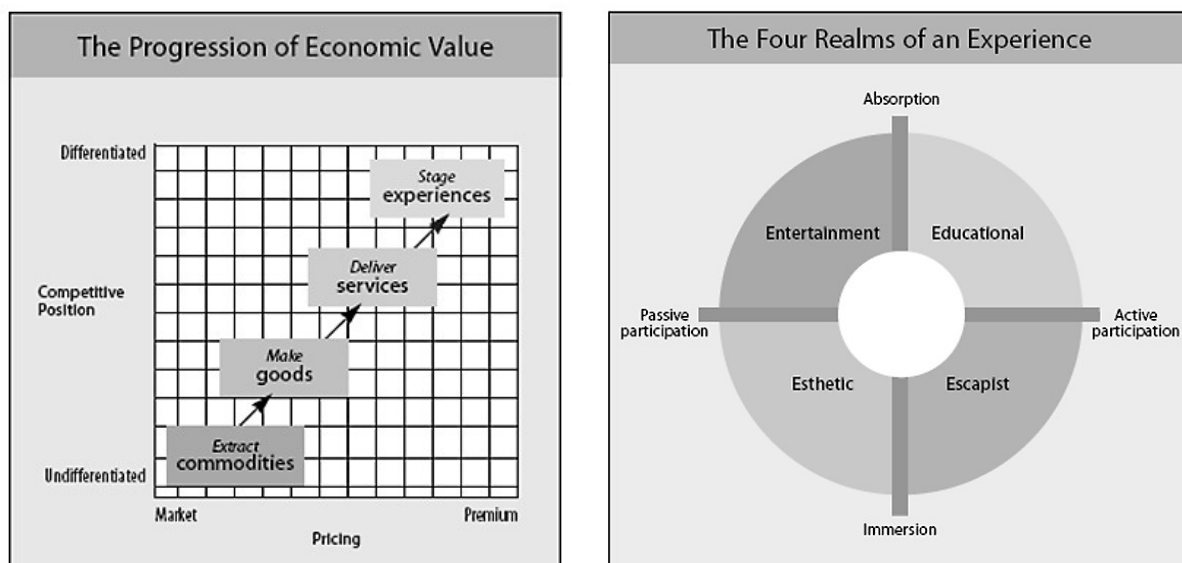
Figure 1: The progression of economic value. Source: Pine and Gilmore (1998)

Figure 2: The four realms of experience. Source: Pine and Gilmore (1998)

In addition to these four dimensions, a number of authors have suggested a fifth dimension, namely socialization (Rowley, 1999; Caldwell, 2002; Brida et al., 2017). This is understood as the ability or possibility of the visitors to interact with the staff members or with other visitors, to exchange views and information. This dimension can be considered as similar to the escapist

experience; the difference here is that evasion can be experienced individually, while the social dimension requires the interaction with other people.

2.2.2. Co-creation of experiences

Nevertheless, the concept of the experience economy has received considerable criticism with regards to the one-directed and business-oriented approach to the experience creation, as highlighted by Binkhorst and Den Dekker (2009). Experiences are traditionally created by the company for the consumers, guided by economic interest (Stamboulis & Skayannis, 2003; Darmer & Sundbo, 2008). With a radical shift in the company-consumer relationship taking place, the traditional way of staging experiences is now considered to be too commercial and superficial, and therefore it does not reflect the needs of contemporary consumers Contemporary consumers have become increasingly informed, active and powerful which has transformed the industrial system towards the centricity of individuals and their human experiences (Prahalad & Ramaswamy, 2004).

The widespread of the internet has given rise to the "prosumer society", reflecting the notion of consumers being actively involved in both the process of consumption and production. This concept has flourished through the social change brought by the Internet and Web 2.0 (Ritzer & Jurgenson, 2010), which have given consumers the power to dictate the way they want to receive information (King, 2002). Web2.0 has been portrayed as '*a set of economic, social, and technological trends that collectively form the basis for the next generation of the Internet—a more mature, distinctive medium characterised by user participation, openness, and network efforts*' (O'Reilly, 2006, p.4). Hence, the novel concept of co-creation of experience puts the focus back on consumer and the way they can shape the nature of their consumption through engaging in the production (Ramaswamy & Gouillart, 2008). This mindset has been brought forward by Prahalad and Ramaswamy (2004), who underline that contemporary consumers strive for authenticity and for balance between the experience stager and their freedom to co-create their own experiences through digital or non-digital means (Binkhorst, 2006; Ramaswamy & Gouillart, 2008).

2.3. The role of digital technologies in museums

2.3.1. Digital technologies and consumer behaviour

One of the most ground-breaking changes to society in the 21st century is the advancement and proliferation of Information and Communication Technologies (ICTs). The widespread of internet and the evolution of computing have led to the creation of 'smart technologies', the interconnection of various technologies that provide real-time connection and advanced analysis of the physical world, as depicted in Table 1. Smart technologies have enabled the widespread of social media, '*a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content*' (Kaplan & Haenlein, 2010, p.61). Thus, the internet has become more than an information source, as the emergence of social media has turned it into an immense space of social networking and collaboration of users (Sigala, 2009).

Form of Smart Technology	Short Description
Artificial Intelligence	Technology allowing use of computer software and hardware to simulate intelligent human behaviors to effectively process and analyze data and information, and to support decision-making and problem-solving. Examples: Driverless cars, virtual assistants.
Mobile communication technology	The technology used for wireless communication allowing wireless real-time connection between systems and remote devices. 5G is the fifth-generation mobile communication technology, much faster and reliable than the previous (4G).
Mobile devices and applications	Electronic equipment, such as mobile phones and tablets, and the technology connected with them. The mobile internet comprises various different devices and platforms; i.e., smartphones, tablets, in-car systems, and wireless home devices. It includes personal and business applications.
Ubiquitous connection between Wi-Fi and other networks	A technology that allows electronic devices to connect to a wireless local area network.
Virtual Reality	A form of information technology which enables users to navigate in computer-simulated environments. VR is a computer-generated environment in which people can experience places and situations as if they were actually present. Example: Virtual tour
Augmented Reality	An enhanced version of reality by which people see the real world with a digital display superimposed technology. AR enhances people's current perception of reality and enhances and leverages visitor experience through additional digital content.
Intelligent chat robot	A robot able to understand and talk using human language with users.
Wearable devices	A portable device that can be worn directly on the body or integrated into the user's clothes or accessories. For example, smart watch, smart bracelet, etc.

Table 1. Smart technologies: Form and short description. Source: Shen, Sotiriadis & Zhang (2020) edited by the author.

The widespread of internet and the possibilities it offers have had a great impact on consumer behaviour, as shown by several studies in the tourism industry (Neuhofer, Buhalis & Ladkin, 2012). The use of internet as a source of information, user-generated content and platforms for interaction have fostered the contemporary 'prosumer', who is more knowledgeable and empowered in the search of experiences and extraordinary value (Buhalis & Law, 2008). Through the use of mobile technologies, consumers do not just ''sit and search'' but they ''roam and receive'' (Pihlstrom, 2008), as they can have access to information anywhere and anytime. The use of smart devices and context and location-aware services has help them to integrate content and improve the quality of their decision making (Xiang, Magnini, Fesenmaier, 2015). The wide use of social media and community platforms allow tourists and generally consumers to share and assess their experience even in real time (Neuhofer, Buhalis & Ladkin, 2012). Therefore, ICTs have transformed consumers from passive recipients of information to connected prosumers who co-create their experiences in a technology enabled environment (Prahalad & Ramaswamy, 2004). As shown in Table 2, smart technologies are present throughout a tourist journey or a visit, from the preparatory to the recollection phase:

Phase of Journey/Visit Experience	Uses of Smart Technologies	Their Influence on Visitors' Experience
Prospective phase (Pre-visit)	• Collecting information, opinions, and feedback from various sources. • Getting information about tourist attractions • Searching related tourism products and services • Planning the trip/visit	• Searching and planning • Reducing decision risk • Increasing interest in • Building an understanding
Active phase (On-site, the visit itself)	• Reading online reviews and comments • Making short-term decisions • Making mobile communication and transactions • Collecting and recording moments/memories of the experience in form of video, image, audio, etc.	• Facilitating navigation and communication • Enhancing convenience and speed. • Enhancing experience, flexibility, engagement, and enjoyment • Making short-term decisions • Recording and storing/collecting memories
Reflective phase (Post-visit)	• Sharing videos, images, texts, etc., on SM/SNSs • Sharing data and knowledge • Posting reviews and giving advice	• Recollecting memories • Sharing experiences • Evaluating (making recommendations and suggestions)

Table 2. The impact of smart technologies on the customer journey. Source: Shen, Sotiriadis and Zhang (2020).

2.3.2. Digital technologies as marketing tools

Digital technologies of the online world are increasingly employed by cultural organisations as marketing tools, as they serve several purposes: They may be used to promote awareness, including basic information to increase their visibility; comprehension through multimedia content, including videos and pictures from events or behind the scenes; audience engagement, by encouraging interaction and generating discussion. They might also be used as customer service tools, by providing tools for communication with the museum or for planning a visit (Chung, Marcketti, & Fiore, 2014). Three basic categories of those technologies are presented below:

Website – "Virtual museum": The websites of museums aim to provide information, help potential visitors plan their visit and showcase part of its cultural offering. By attracting internet users to virtually visit the museum's collection, they attempt to inspire them to physically visit the museum. The digitisation of their collections facilitates their presentation to the public as well as curatorial work. Digital databases allow the creation of online collection, virtual exhibitions or even virtual tours that can be made available at the museum's website or even in portable devices. Such cases are the Collection Database of The British Museum, the virtual museums of the Louvre on the iPhone and the Metropolitan Museum of Art's Timeline of Art History. These practices have several benefits as they allow quicker and easier access to information, facilitate research in the museums' collections while they broaden the museum's audience by attracting remote internet users without geographic barriers. However, a common concern for museum professional is the risk that a digital collection might lead to fewer visitors in the physical museum. In fact, surveys have shown that online museum websites increase footfall in the physical museums, rather than decrease.

User-Generated Content (UGC): The term UGC refers to images, videos, audio or text created by uses and uploaded onto social media (Krumm et al., 2008). It also includes reviews or testimonials posted on third party sites such as Google or TripAdvisor, which are used to rank organisations based on feedback from past visitors or consumers (O' Connor, 2008). UCG is crucial for museums as a satisfied visitor is likely to use positive word of mouth, which is a an extremely powerful marketing tool for businesses. UGC can be used by museums to increase their marketing effectiveness and revenue, as it is an easy way to engage with visitors and allow them to do marketing on the museum's behalf.

Social media:

Social media and their widespread in the last years have revolutionized the way information is shared and communication is achieved. Museums are increasingly using social media to communicate with their audience (Cassar, 2020). While they have a huge amount of information that could be digitised and communicated to the public, they do not fully exploit social media, predominantly due to lack of specialised knowledge on digital marketing.

The most popular western social media platforms used today include Facebook, Instagram, Twitter, Snapchat and Pinterest. However, the social media world is constantly evolving, and the trends are changing depending on the users' needs. At first, social media were mainly used by cultural organisations for awareness purposes, to promote upcoming events or exhibitions. However, more and more organisations expand their social media use and employ interactive media and UGC to engage their audience, such as reposting visitors' content, launching challenges and promoting hashtags.

Social media engagement is becoming an integral part of museums' marketing strategy and, as such, it requires a robust internal and external communication strategy. Social media requires multidisciplinary work, which means that curators, educators, communications and technology specialists need to work together to effectively harness social media's power. To effectively communicate with their audience and engage users, museums need to have a well-planned social media strategy (Chen, 2018). Thus, it is essential to collect data and identify their target audience, both at the physical museum and online. By collecting metrics and demographic data (e.g., age, gender, ethnicity, educational level), museums can have a clear picture of their audience, identify its strengths and areas of improvement, and adjust its content so as to address different target groups.

Social media strategies need to have clear goals. These goals might be education, increase of brand awareness, promoting sales or other income-generating resources or even fundraising. According to these goals, the social media content should be customized and optimized in order to effectively reach the target audience. It's visual identity, posting consistency, quality of content and different 'voices' to address to different audiences are all important factors for a social media strategy. The digital content should be in line with the museum's brand identity and guidelines in order to promote a coherent image to the public. Social media posts need to

be planned in advanced and their reach need to be monitored and assessed, in order to identify what works for each target audience. Finally, social media offers the great advantage of direct communication with the public. Thus, monitoring and responding to audience engagement is important for maintaining and increasing its followers. Direct messages in social media are often preferred from e-mails as they are faster and more easily accessible.

Therefore, social media allow consumers to keep in touch with cultural institutions, follow their pages, subscribe on their newsletter or media channels and get informed about upcoming events or exhibitions. They also play an important role in encouraging consumers to interact and share their experiences online (Gretzel and Jamal,2009) as they allow sharing multimedia content, such as pictures or videos.

2.3.3. Digital technologies as interpretation tools

The advancements of technology, in the last two decades, have disrupted the way museums operate. Various studies exploring the effectiveness of exhibition design and visitors' behaviour have shown that, in order to increase the satisfaction of visitors, museums need to create more engaging cultural spaces (Pekarik, 2011). Digital technologies are considered to contribute significantly to the enhancement of the experience, as long as they are used in a way that does not detract from the museum experience.

Digital signage: Exhibitions are usually enriched with basic digital displays or projectors, as they have many advantages over traditional museum labels, and they come in an affordable price. They allow for content to be easily changed and it can include more visually appealing material such videos, pictures or animations. They can also provide visualizations of reconstructed objects (e.g., heritage objects in their original form/colour) or parts of the collection that are not physically displayed in the exhibition, providing more learning opportunities. Digital signage can also be used for internal marketing purposes, to remotely promote the museum's program to its audience.

Touch screens: Human computer interaction is the most direct reflection of smart technologies in museums. Interactive displays include touchscreens, touch tables, smartphones or PDAs, and is an affordable way of increasing the visitor time spent with the museum

exhibits. In addition, touchscreens can be used for information search and they may allow users to select the specific content they are interested in or choose the desired language. Depending on the way they are used, they might encourage social interaction and discussion (Fleck et al., 2002) and add fun to the museum experience, as in the case of interactive educational games.

Virtual and Augmented Reality: To date, cutting-edge revolutionary technologies include digital tools that create modified realities, be it fully virtual or augmented. Virtual Reality (VR) technologies allow humans to visualise a 'world' generated by a computer and interact with this world in real time. Augmented Reality (AR) differs from virtual reality in that it supplements, rather than recreate, a real world, using objects that appear to exist in the real world. An example of AR is the MoMAR iPhone app of the Museum of Modern Art (MoMA) in New York, that overlays art onto existing artwork and frames through the camera, offering a secret secondary exhibition. These tools might be used for entertainment, interpretation or background information, while they are increasingly adopted as a learning tool to engage visitors and help them achieve specific learning outcomes (Damala, 2009). The biggest disadvantage of these technologies is considered to be their price, as they are difficult to be obtained by smaller museums,

Mobile technologies and applications: While the on-site experience is characterised by the consumer being on the move, mobile technologies are rendered as key tools (Egger & Jooss, 2010), as they allow information retrieval, communication and self-entertainment. Since the majority of contemporary visitors have smart phones, mobile apps are now considered as a feasible alternative to traditional handheld audio guides, while they may offer additional features, such as QR code scanning. Hence, they maximize visitors' ability to move freely in the museum's premises while making their experience more flexible and personalized (Dorcic, Komsic, Markovic, 2019). Since mobile apps can be used in the time and environment that the visitors want, they extend the museum experience before and after the visit. Museums can exploit that as learning and marketing tools (Economou & Meintani, 2011). In addition, smart phone devices allow consumers to produce audio-visual material, such as photos or videos, which they can share in real time via social media (Green, 2002).

Overall, digital technologies seem to have a positive impact in attaining attractive and memorable visit experiences in museums (Shen, Sotiriadis and Zhang, 2020). Subsequently, memorable experiences of learning and captivation might have a positive impact on visitors'

intention 'to participate in other activities organized by the museum in the future, to seek information and, therefore, to follow the museum on social networks and even to rate the museum positively on opinion pages' (Anton, Camarero and Garrido, 2018, p. 1413). Therefore, the use of technologies can enhance the visitor's experience and subsequently contribute to the museum's competitiveness and sustainability. However, the integration of digital tools in museums is an on-going procedure that comes with several challenges at an economic, management and operations level.

2.3.4. Challenges related to digital technologies

Museums are currently faced with the challenge of expanding their scope of activities from long-term conservation and organization of exhibitions to online cultural content and service provision. Museums work hard to adapt to the new circumstances and strengthen their professional knowledge to become more competitive, while struggling with budget constraints, fragmented knowledge and unstable government support (Tsolis, 2014).

More specifically, while innovation plays an important role in gaining competitive advantage and achieving economic sustainability, it cannot be easily applied in all kinds of museums. In fact, it seems that the size and the legal status of cultural institutions play an important role in their probability to adopt innovative practices. While superstar museums (MoMA, Louvre, British Museum among others) may offer innovative cultural products (Camarero et al., 2015; Capriotti, 2010), the majority of museums and galleries are small or medium-sized organisations and, as a result, they do not have access to the same resources as large ones, to invest in innovation (Capprioti, 2010; McNichol, 2005). Similarly, studies have shown a negative relationship between public ownership of museums and innovativeness (Hughes and Luksetich, 2004; Kirchner et al., 2007).

In addition, while museums can benefit significantly from the application of digital technologies, the digitization of museums should not be at the expense of the physical museum. During the last decades, the number of virtual visitors to many museum websites has already exceeded the number of physical visitors on site (Hawkey, 2004). Thus, the over-digitization of museums runs the risk of decreasing the number of physical visits, as the traditional value of museum has been unintentionally eroded. However, technology is not supposed to replace

the original museum, it should only fil the gaps of the physical museum and complement the on-site experience (Scott, 2007).

Beyond all the aforementioned issues, museums are currently facing a major challenge that has had a huge impact on culture and travel industry worldwide: the recent breakout of COVID-19 pandemic, that has disrupted the balance between digital and physical museum experience.

Chapter 3: COVID-19 and the digital transformation of museums

3.1. The COVID-19 crisis in tourism and culture

In the last year, the COVID-19 pandemic has had an adverse effect on societies around the world, at a social, economic and political level. (UNESCO, 2020). COVID-19 is an infectious disease caused by a recently discovered coronavirus called SARS-CoV-2. In January 2020, the World Health Organization declared the COVID-19 outbreak a Public Health Emergency of International Concern following a cluster of cases of 'viral pneumonia' in Wuhan, China, in December 2019 (WHO, 2020). A couple of months later, in March 2020, the disease was declared a Pandemic, as it was rapidly spread around the world (WHO). To mitigate the spread of the virus, 96% of all destinations around the globe applied full or partial restrictions by April 2020, as reported by the UNWTO (UNESCO, 2020). The preventive measures imposed by governments included quarantines, lockdowns, physical distancing measures and travel restrictions, among others, bringing a large part of human activity on the planet to a standstill.

As reported by international organisations such as UNWTO, UNESCO and ICOM, the tourism and the cultural industry have been two sectors largely affected by the unprecedented crisis. According to UNWTO, global tourism suffered its worst year on record in 2020, with 1 billion fewer international arrivals, a 74% drop compared to the previous year, due to an unprecedented fall in demand and widespread travel restrictions. The crisis has put between 100 and 120 million direct tourism jobs at risk, many of them in small and medium-sized enterprises, bringing to the surface its extreme vulnerability as an economic activity (UNWTO, 2021).

In addition, the radical measures adopted by most states, especially from March 2020 onwards, resulted in the closure of the vast majority of the world's cultural institutions, including 90% of museums (UNESCO, 2020). While most museums re-opened during the summer 2020, **their** operation was under strict social distancing and hygiene measures, reduced visitor capacity and interrupted programming (NEMO, 2021). During autumn 2020, a second lockdown was imposed, which was still on-going in most countries up until March 2021, when this study was submitted. More specifically, over 70% of the museums participating in the NEMO (2021) report were closed during the October-November 2020 without definite re-opening date (NEMO, 2021).

3.2. The economic impact of COVID-19 on museums

The COVID-19 crisis seems to have important **economic repercussions** for museums. While many museums benefit by public subsidies, a considerable number of museums is largely dependent on visitor-generated income (paid visits, purchases, etc.) or on donors (UNESCO). Thus, while state funding for museums has not been directly affected, the private museum sector has been in fear of numerous bankruptcies, with more than 10% of museums running the risk of permanent closure during the first lockdown (ICOM, 2020a). More specifically, 49.6% of museums expected losses of at least 25% of their revenue in 2020, spiking up to half of the annual revenues for 31.9% of museums (ICOM, 2020b). According to the UNESCO report, the financial issues are related to three main reasons:

1) **The drastic decrease of cultural tourism**, due to travelling restrictions and closed borders. For a number of cultural organisations, 70-75% of their public is international visitors (UNESCO, 2020), while estimated losses in tourist regions reached 75-80% (NEMO, 2020).

2) **The low visitor numbers**, with 5 out of 10 museums reporting a drop between 25-75%, and 2 out of 10 museums, more than 75%. This drop was mainly attributed to the decrease in global tourism, the interruption of school and community programmes and the general public's fear of potentially crowded places (NEMO, 2021). **The low visitor numbers resulted in the loss of incomes** from museum admissions (60% of

museums), from the discontinuation of special programmes for visitors (10% of museums), and from other commercial operations (21%). More specifically, 75% of museums have reported losing between up to €1,000 to €30,000 per week, even in the time they were open to the public, predominantly during the summer months. Large institutions reported losing up to or even more than €100,000 per week (NEMO, 2021).

3) The economic aftermath of the crisis which suggests a significant decrease in the number of donors, sponsors and international tourists, in the following months or even years.

As a result, museums primarily funded by public funds seem to be slightly more stable, than museums with different funding structure (ICOM, 202b). When it comes to emergency funding, as reported by the NEMO (2021), 45% of the responding museums did not receive any kind of emergency government support. Big museums were more engaged in seeking alternative resources of funding (50%) than smaller museums (39%), which can be explained based on the lack of capacity (skills, human resources, budget) in initiating fundraising activities, often encountered in small museums. Finally, 7 out of 10 museums expect budget cuts in the following years, while most of them operate under an already tight budget, something that may put at risk their capacity to fulfil their mission.

3.3. Museums' response to the COVID-19 crisis

Resilience is one of the fundamental characteristics of museums and this has become even more evident since the beginning of the COVID-19 crisis. Cultural institutions around the globe reacted rapidly to the COVID-19 crisis and sought to maintain a link with their audience by developing their digital presence, using Information and Communication Technologies (ICTs). As reported by the NEMO (2021), 93% of the responding museums increased or started online services during the pandemic and more than a third added budget to increase their online presence or communication. An overview of the digital responses of museums around the world is provided by the UNESCO report, based on a sample of more than 800 references to online sites or activities applied during the March 2020 lockdown, from more than 86 states. Museums' responses were based on digital or non-digital projects, which were either

investments made before COVID-19 or specific activities carried out during the COVID-19 crisis. These activities were grouped in the UNESCO report into five categories:

(1) Use of previously digitized resources

A large number of cultural institutions have showcased pre-existing digital content to increase their visibility, including online collections, digital exhibitions, virtual tours, 360o tours or online publications. In addition, many museums have posted online digital productions, applications or games from previous exhibitions to renew their life cycle. In this context, the *Google Arts & Culture* website has been the subject of great interest (especially with traditional media) while many institutions have developed their own projects, often as part of digitisation policies developed by public authorities. This use of digital material, which was a result of previous investments, was found to be the most widely used practice around the world during the lockdown.

(2) Digitisation of planned activities during the months of lockdown

When lockdown was announced, museums and cultural institutions had already scheduled a large number of events, following their programming. After their closure, many museums sought to put these events online in the form of digital exhibitions – more or less interactive - while other events, such as concerts, performances, seminars or talks, were presented online instead of on-site. The events were presented usually via social media, either live-streaming or recorded, often available on demand on digital platforms such as YouTube or Soundcloud. The number of institutions possessing sufficient resources (infrastructure and staff) to present digital versions of their exhibitions or online events during the lockdown was much smaller, comparing to the previous category. Examples of such practices were presented by Bergamo, Italy's GAMeC (Gallery of Modern and Contemporary Art), that created an online radio show, while the MUO (Museum of Arts and Crafts) in Zagreb, Croatia launched numerous online initiatives.

(3) Increased activity on social media

Many cultural organisations took advantage of the lockdown to develop their social media activities (Facebook, Twitter, Instagram) or launch a YouTube or SoundCloud channel. In

particular, according to the NEMO (2021), activity on social media increased or started for more than 75% of museums while 53% of the museums increased or started creating video content. Museums and institutions that were already active on social media continued their online activity while involving more museum departments in the content creation process. Curators, management teams or mediation services became considerably more involved in order to adapt their content and activities to the digital format. These efforts "helped to partially transform some museums into diversified digital media" (UNESCO, 2020).

(4) Special activities created for lockdown

Some active cultural institutions have gone one step forward to develop original productions in the context of the lockdown period, to respond as closely as possible to the educational, creative, or resourcing needs of the audience. This kind of projects were grouped, in the UNESCO report, into three types of interventions.

The first type is related to "**exhibition projects and collections, for which specific mediation is envisaged**". (UNESCO, 2020). More specifically, many museums made the best out of the empty rooms of their establishments to present an unconventional view of their collections or even robot tours, as in the case of Hastings Contemporary, in the United Kingdom. In additions, new types of experience have emerged, such a participating in a "cocktail with the curators" (Frick Collection, New York), associating a work with a song (Valence Museum, France) or presenting the museum's collections using their reproductions in a video game (the Angermuseum, Germany with *Animal Crossing*), all aiming to engage the digital visitor.

The second type of practices is related to museum projects aiming at presenting "**the other side of the coin**", i.e., the reserves or various "invisible" museum jobs (like collection management).

The third type is related to **community engagement projects** through participatory actions developed during the lockdown. For instance, the "#GettyMuseum Challenge" (Getty Museum, Los Angeles), also developed by "Between Art and Quarantine" (Rijksmuseum, Amsterdam), encouraged web users to take pictures of themselves reproducing famous artworks. The challenge was widely shared in social media and received international attention and participation. When it comes to families, various activities, such as challenges, educational games, children's stories, colouring activities, quizzes and even video games (Centre

Pompidou, Paris) were made available online for parents seeking to occupy their children in a fun and creative way. For instance, the Museum of Relief Maps in Paris made a "memory" game for downloading while the Pre-Columbian and Indigenous Art Museum in Montevideo introduced avatars of the staff proposing activities for children.

(5) Professional and scientific activities organised in the context of lockdown

More scientific and strictly professional activities were initiated by several museums and mostly by museum associations or programmes (among others Ibermuseos, ICOM, Association of Children's Museums). Web conferences in the form of webinars, meetings and talks were organized via videoconferencing platforms, primarily focusing on COVID-10-related topics.

The 800 activities listed, which have been divided into different types of interventions, are presented by region in Figure 3 (category 5 is not included):
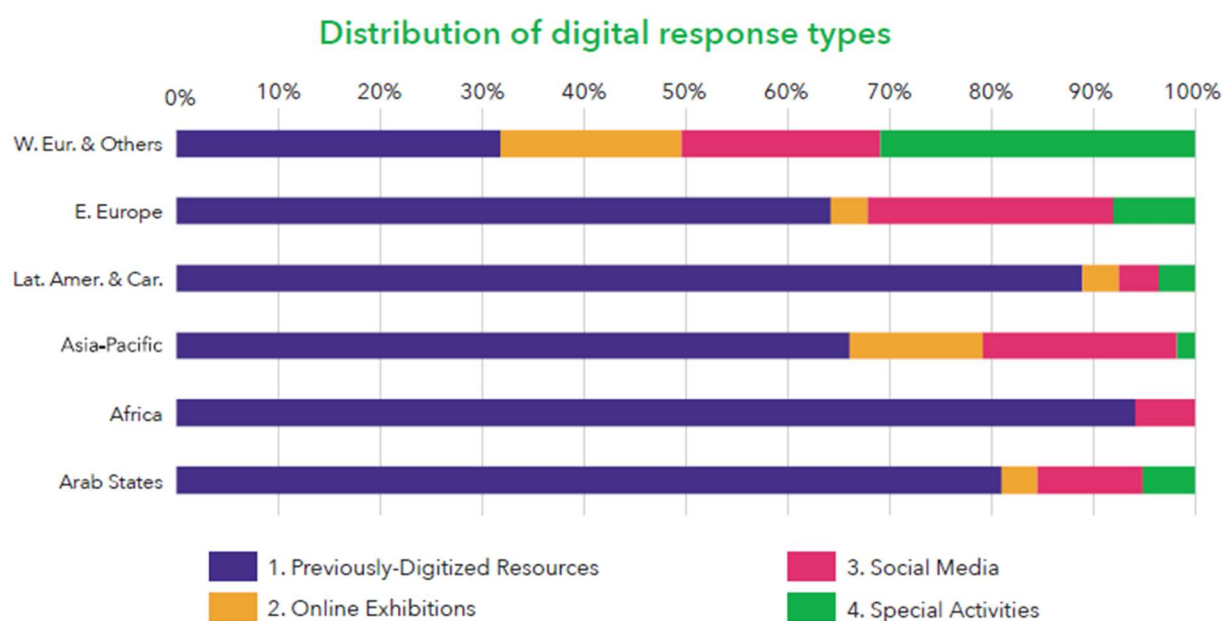

Figure 3. Breakdown of digital responses by region. Source: UNESCO (2020)

When it comes to the popularity of these responses, there was an increase in popularity for social media activities, as reported by 60% of responding museums, for video content (42%) and virtual tours (28%), while online visits remained the same or increased for half the museums of the sample (NEMO, 2021).

3.4. Digital transformation challenges

These findings show that "museums have always been able to re-invent themselves and adapt to changes in society" in a creative way (ICOM, 2020a). However, besides the adaptability to the crisis, these findings have also highlighted some long existed structural weaknesses, related to financial resources and human resources dedicated to digital activities (ICOM, 2020a).

More specifically, the digital presence of a museum relies heavily on the digitization of its collection, which, in turn, requires an up-to-date inventory of the collection, a minimum IT infrastructure, a stable internet connection, and dedicated staff with the expertise to carry out these operations. While some museums may have big teams dedicated to their digital strategy, other museums (many more in number) have not drawn up inventories of their collections yet. For instance, despite the digital turn, only 7% of the museums hired new staff to manage their increased online activity, while over 40% of museums relocated existing staff for this purpose. Similarly, despite the increase in online visits, almost 40% of the museums did not track the development of their online visitor numbers, which highlights a lack of digital frameworks, methods or knowhow (NEMO, 2021)

The ICOM follow-up report (2020b) shed light to **the relationship between funding structure and digital investment**. Museums mainly dependent on public funding generally make less economic and human resources available for digital and communication activities. A possible explanation given by ICOM is that this type of museums, especially public museums, are less flexible in terms of managing or re-distributing their annual budget. This fact is also reflected in the digital activity of these museums, that seems to be more limited comparing to other museum types. The museums that have been more active in terms of investment in digital communication are those that mostly rely on earned income and endowment funds (ICOM, 2020b).

In addition, there seems to **be a relationship between museum size and digital investment**. Digital transition initiatives are led largely by "big museums", 81% of which increased their digital capacities as a result of the COVID-19 pandemic, in contrast to only 47% of smaller museums (NEMO, 2021). This is related to their budget, as small and medium museums show 4 times higher need for support for their digital transition, comparing to large museums. This finding is related to the human resources of the organisations. Large museums have more than

100 employees, therefore it is more likely that they already have staff dedicated to digital offers and activities. In comparison, a small staff may struggle to manage standard museum tasks alongside a digital transformation (NEMO, 2021). As a result, big museums that have invested significantly on their digital strategy, have thus seen a rise in the number of visitors on the website during the COVID-19 crisis. For instance, the Louvre museum had a tenfold increase in website visits during the first few days of the lockdown, which consequently stabilized to a level three times higher than the average.

Although some museums may not have the resources to implement various digital activities, it is certain that are actively rethinking their operation and their relationship with their audience in order to survive post-COVID-19. This unprecedented crisis has accelerated changes that were already in progress, while more and more museums are becoming aware of the fundamental importance of digitization for their sustainability.

Chapter 4: Empirical Research

4.1. Research aims and questions

Over the last decade, Athens is gradually becoming a dynamic cultural/heritage and city break tourism destination. The renovation and construction of new museums and cultural centres has contributed to the upgrade of the cultural product of the city and to the attraction of foreign visitors. However, while contemporary cultural tourism practices focus on the enhancement of visitors' experience, which is born through a co-creation process and is enhanced by innovative technologies, it is not clear whether museums and cultural centres of Athens have shifted their focus towards this direction. The recent breakout of the COVID-19 pandemic has played a crucial role in the digitization of cultural material and digitalization of cultural spaces around the world in a short period of time. Hence, **the aim of the present study** is to explore whether and how museums and cultural centres of Athens exploit digital technologies:

1) To attract tourists, as a strategic objective
2) To allow co-creation of the experience during the customer journey, before the COVID-19 breakout
3) To ensure business continuity and customer engagement during the COVID-19 period

In this vein, the present study examines the use of technologies as marketing and as interpretation tools in museums and cultural centres of Athens from an operators' perspective and strategic management mindset. To that end, the research adopts a strategic long-term approach and identifies and compares the philosophy and technology practices of museums and cultural centres before, and during the COVID-19 pandemic. The study targets museum managers and staff in order to explore the following **research questions** (Table 3):

Aims	Research questions
Whether and how museums and cultural centres in Athens exploit digital technologies to attract tourists, as a strategic objective.	1. Have they developed specific strategic plan regarding their visitation and target audiences?
	2. Are tourists and international audience part of their strategic planning?
	3. What are the digital tools and the challenges that they face with regards to attracting tourists?
Whether and how museums and cultural centres in Athens encourage co-creation of the experience during the customer journey, before the COVID-19 breakout	4. Are digital technologies part of the museums' experience design?
	5. Which digital technologies are adopted by museums and cultural centres for supporting the co-creation of experiences at a pre-, during and post-visit level?
Whether and how museums and cultural centres in Athens have adopted digital technologies to ensure business continuity and customer engagement during the COVID-19 period.	7. How did COVID-19 affect their operation and programming?
	8. Did they adopt digital technologies or practices, as a response to the COVID-19 crisis? If yes, of what type? If no, why not?
	9. What are the challenges that they face with regards to the adoption and use of digital technologies?
	10. Will digital technologies and practices be continued and/or fostered in the post COVID-19 era?

Table 3. *Aims and research questions of the study*

The findings will help museum operators and destination managers alike by better understanding the type and the level of digitisation of museum tourism experiences at the city of Athens and by identifying gaps and challenges that need to be addressed.

4.2. Methodology

4.2.1. Research approach and method of data collection

The present study adopted a mixed methods approach, combining qualitative methods (interviews), quantitative methods (questionnaire survey) and secondary data analysis (website content analysis). The mixed methods approach was selected as it would enable us to enrich the study's insights by triangulating findings obtained from three sources and analysed by different methods. Information coming from different angles corroborate and elaborate our research findings: it *"limits personal and methodological biases and enhances a study's generalizability"* (Decrop, 1999, p. 158) while it enhances the credibility of the study and strengthen its conclusions (Schoonenboom & Johnson, 2017). The study followed a concurrent design (QUAL + QUANT), as all components of the study were executed (almost) simultaneously, and their implementation was independent, in the sense that no data analysis of one component was necessary for the implementation of the other.

A qualitative approach was included in the study as it addresses *'research questions that require explanation or understanding of social phenomena and their context'* (Ritchie and Lewis, 2003:5). In our case, in order to understand the impact of COVID-19 and technology trends on the management philosophy, strategy and practices of the museums and cultural centres in Athens, the study needed to explore the motivations, the perceptions and the challenges they faced related to their potential digital transformation. Therefore, the qualitative method was able to provide the deepening and the subjectivity needed, by revealing *'experience, processes, and causal mechanisms through its unconventional methods'* (Bluhm et al., 2011, p. 1870). More specifically, for the purpose of this study, a sample of 7 Athens' museums and cultural centres was formed, and semi-structured in-depth interviews were conducted with 10 key-professionals in different roles, as will be further explained in the next sections. Semi-structure interviews were selected as they are characterized by flexibility (Broom, 2005) and they allowed us to reveal different aspects of each topic through an insider's

perspective. The topics were grouped in three categories, the philosophy and strategic management of the organisation, the use of new technologies for enhancing visitors' experience and the impact of COVID-19, corresponding to the three-fold aim of the study. While all interviews were based on the same basic questions, their semi-structured nature allowed the researcher to enrich their questions or ask for clarifications, when needed. All selected participants were contacted via phone calls and personal e-mails. Due to the COVID-19 pandemic, all interviews were conducted via online platforms, such as Zoom, or telephone and their mean duration was 60-80 minutes per participant.

The quantitative approach was adopted to address the research questions 5 and 8, regarding digital tools and practices adopted by organisations, before and during the COVID-19 period. A questionnaire was distributed to the interviewees, to collect demographics and information about the digital tools used by the organisations to enhance the visitors' journey. The questionnaire included close-ended questions in the form of a list and interviewees were asked to check the items that were applicable in their case (e.g., website, mobile app, audio guide etc). It was organised in 5 main categories: demographics of the organisation, marketing and communication digital tools, digital visitor services (web-based and on-site tools), digital education and digital tours. The questionnaire allowed us to form a detailed image of all kinds of technologies used in different aspects of the experience, in order to avoid listing digital tools during the interview. In some cases, the questionnaire was filled by the author with information found on the participants' website and was then sent to the interviewees for corrections and confirmation, for their own convenience.

Furthermore, web-based content of the participating organisations was analysed: the organisations' official website, their social media channels (Facebook, Instagram, Tweeter and YouTube) and their presence in review platforms (TripAdvisor and Google reviews). Web-based data were important in this case as they allowed us to draw less biased conclusions, compared to the other two techniques (interviews and questionnaires). This technique was also economical, compared to the aforementioned ones, as the content examined could be reached without having to engage with users (Kim & Kuljis, 2010). Thus, data collected from interviews or questionnaires were triangulated with web-based content and vice versa to maximize the credibility and validity of the study.

4.2.2. Sampling

For the purpose of this study, a list of 44 museums, galleries and cultural centres of Athens was created. They were selected from sites of the Greek Ministry of Culture and Sports, from review platforms, such as TripAdvisor, and from travel sites, such as Lonely Planet, Culture Trip or Travel Portal. We believe that the inclusion of galleries or cultural centres in the sample would not distort the results, as they all offer cultural products and include exhibitions spaces in their premises. This list was then narrowed down based on specific criteria: the organisations that were not directly or indirectly related to Greek culture were excluded from the study, as museums that reflected the Greek identity were considered to be more popular attraction to cultural tourists. In addition, very small museums or galleries, museums without website or museums that did not appear in any review or tourism platform were also excluded from the study. This way, all participants would have a basic level of digital presence in order to be comparable.

As a result, 23 cultural organisations (20 museums and 3 cultural centres) were contacted by the author. Of them, 2 responded negatively, for reasons of work overload or change of legal status, 3 responded positively but never confirmed the interview date, 10 did not respond at all and 1 could not be reached due to email delivery failure. Finally, 7 organisations responded positively, i.e., 6 museums and 1 cultural centre, and were finally interviewed. The organisations are the following:

- the National Archaeological Museum (henceforth NAM)
- the National Museum of Contemporary Art (henceforth EMST)
- the Museum of Cycladic Art (henceforth MCA)
- the Jewish Museum of Greece (henceforth Jewish museum)
- the Museum of Ancient Greek Technology "Kostas Kotsanas" (henceforth Kotsanas museum)
- the Ilias Lalaounis Jewelry Museum (henceforth Lalaounis museum)
- the Stavros Niarchos Foundation Cultural Center (henceforth SNFCC)

The representatives interviewed were the museum Directors, in the case of smaller museums, or the Head of Communication, Museologists, Museum Educators or Directors of Visitors' Experience, in the case of bigger organisations. The interviewees and the demographics of each

museum and cultural centre are presented in Table 4 while a map of their location is presented in Figure 4.

4.2.3. Material and measures

To explore the use of digital technologies and the impact of COVID-19 in museums and cultural centres of Athens, the interview questions were divided into three main categories, based on the threefold research aim:

1. Tourism and strategic planning of museums and cultural centres
2. The role of digital technologies in the museum experience (before, during and after the visit)
3. The impact of COVID-19 on the use of digital technologies

The first group of questions addressed the research questions 1-3 by exploring the mission and the philosophy of the organisation, the strategic planning when it comes to visitation and target groups, the current audience and visitor's profile and the difficulties in attracting international audience. The second group of questions addressed the research questions 4-6 by exploring the role of new technologies in each organisation, the digital tools and practices adopted before, during and after the visit for the co-creation of experience, the mode of the digital experiences, the customization of experience for different types of local and international visitors and the challenges in adopting new technologies. Finally, the third group of questions addresses the research questions 7-10 by exploring the way COVID-19 has affected the visitation and experience in the organisations, the digital tools and practices adopted as a result of the pandemic and the audience's response, the factors that facilitated or complicated the development of digital tools and the use of new technologies in the post-COVID era. The interview questions are attached in Appendix A.

In addition, the questionnaire consisted of different lists of digital tools or practices and the interviewees needed to cross where applicable. It included an introductory section with demographic information, such as legal status, size, year of establishment and other. The first section was about the marketing and communication of the organisation and it included a list of social media options and their purpose of use in a matrix table, as well as a list of contact options. The second section was a list of online services available on the website (e.g. online ticket service, live-streaming workshops, digital exhibitions etc.), as well as *on-site* (e.g. mobile

applications, QR codes, interactive installations and others). Finally, the third section was about educational programs, lectures, performances and tours, including both on-site and online material. These options allowed us to collect data about the digital presence of the participating organisations during all stages of the customer journey. In addition, the participants could also indicate whether their programs were in more languages, other than Greek, or whether they were free of charge or paid, which provided useful information regarding its tourism-related services. The questionnaire is attached in Appendix B.
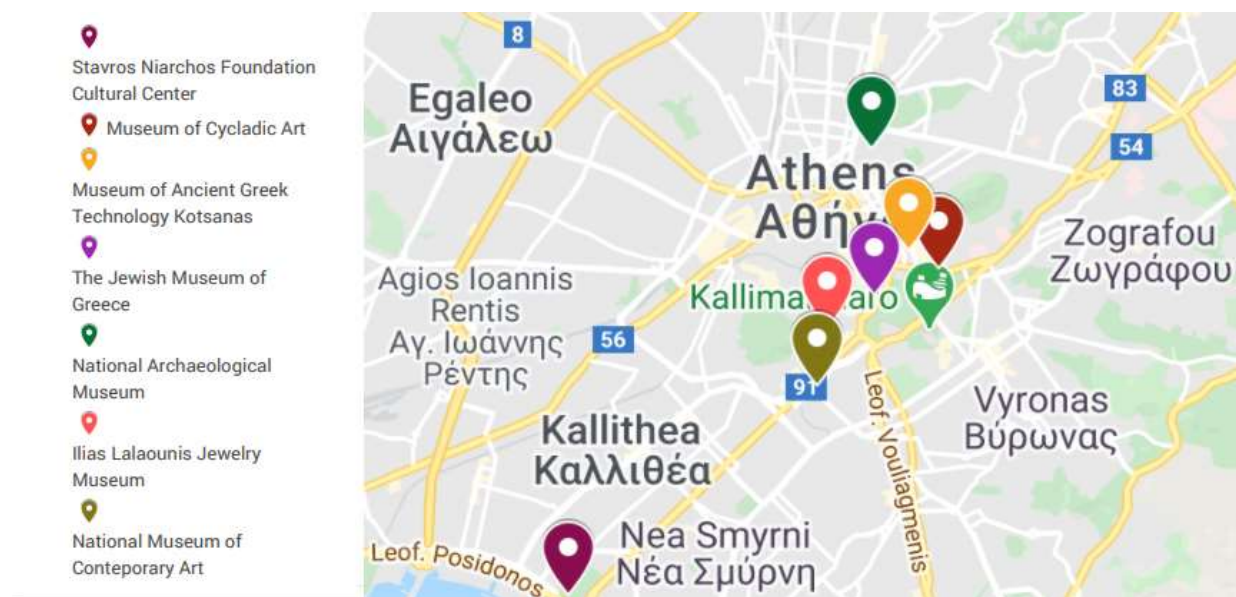
Figure 4. *Location of participating organisations*

Demographics						
	National Arcaeological Museum (NAM)	**National Museum of Contmporary Art (EMST)**	**Stavros Niarchos Foundation Cultural Centre**	**Museum of Cycladic Art**	**Kotsanas Museum of Ancient Greek Technology**	**Jewish Museum of Greece**	**Ilias Lalaounis Jewelry Museum**
Name	Despina Kalesopoulou	Marina Tsekou, Elisavet Ioannidi Kassiani Benou	Christina Vasilikou, Athena Balopoulou	Stella Tsagkaraki	Mina Mitsomponou	Zanet Battinou	Ioanna Lalaounis
Role	Archaeologist - Museuologist	Coordinator of educational programs (Tsekou, Ioannidi), Head of Communications (Benou)	Visitors Experience Director, Digital Media Manager	Head of Communications	Museum Director	Museum Director	Museum Director & Curator in Chief
Legal Entity	Public Museum, supervised by the Ministry of Culture and Sports	Legal Entity of Private Law, non-profit character, supervised by the Ministry of Culture and Sports	Special Purpose Entity, supervised by the Ministry of Finance	Legal Entity of Private Law, non-profit character, supervised by the Ministry of Culture and Sports and the Ministry of Finance	Legal Entity of Private Law, non-profit character, supervised by the Ministry of Culture and Sports	Legal Entity of Private Law, non-profit character, accreditation-recognition by the Ministry of Culture and Sports	Legal Entity of Private Law, non-profit character
Funding	State funding (Ministry of Culture and Sports)	State funding (Ministry of Culture and Sports)	Stavros Niarchos Foundation exclusive grant (first 5 years of operation)	Privately funded	Privately funded	Privately funded	Privately funded
Museum/Organisation category	Archaeological museum	Contmporary Art Museum	Cultural centre	Art Museum	Scientific museum (special interest)	Historic & Ethnographic museum (special interest)	Historical and folklore museum (special interest)
Number of employees	>150 – the numbers varies due to the seasonal employees	57	>150	45	14	9	N/A
Year of establishment	1866	2000	2016	1986	2018	1977	1994
Year of renovation	2004-2009	2016-2020	N/A	New annex building in 1991 / New wing in 2005	N/A	1998	2004 / 2017
Average visitation per year	600.000	N/A	4,9 million	25.000	>40.000	12.000	N/A
City/municipality	Municipality of Athens	Municipality of Athens	Municipality of Kallithea, Athens	Municipality of Athens	Municipality of Athens	Municipality of Athens	Municipality of Athens
Permanent exhibitions or temporary or both	Both	Both	Temporary exhibitions (few pieces in the permanent collection)	Both	Both	Both	Both

Table 4. *Participants' demographics*

4.2.4. Data analysis

The interview records were transcribed, coded and analysed based on the Grounded Theory initially developed by Glaser and Strauss (1967). The analysis included three coding steps, namely open coding, axial coding and selective coding.

At the *open coding* part, all transcriptions were systematically read several times and emerging patterns were identified by grouping together similar incidences, claims, and discursive practices. Several codes were created for each participant based on the focus of their answers, such as "limited budget", "staff willingness" and "outward focus" among others. At the **axial coding** part, themes that emerged across interviews were identified and grouped into wider or narrower categories. The data were organised in a spreadsheet to facilitate comparison. The purpose of this step was to answer questions about the phenomena, such as '*when, where, why, who, how and with what consequences, thus giving the concept greater explanatory power*' (Strauss and Corbin, as quoted in Boychuk Duchscher and Morgan, 2004, p.608). At this part, themes directly or indirectly related to the research questions were formed, such as "clear strategic objectives", "immediate response to COVID-19" or "challenges in adopting digital tools". At, the **selective coding** part, the data were further refined by bringing together patterns, consistencies and categories and by identifying the core codes that emerged from the axial coding. In our case this step revealed a relation between the digital presence and the legal status of the organization or the availability of specialised staff. The final step of the analysis was revisiting the literature and identifying previous findings that were in line or deviant from our findings. In addition, conceptual tools were sought for, in order to help us make sense of the patterns emerged from the data.

Regarding the data collected through the questionnaires, they were analysed from a quantitative perspective, by identifying the tools and services that were less or more frequent across participants as well as the characteristics of the participants that showed the weakest or strongest digital presence. More specifically, the data were organised in a spreadsheet and all answers were verified by comparing with the web-based content of each organisation. Positive answers that were not verified from digital channels were not taken into consideration. The data were then grouped in categories: Social media, digital tools and services before/after the

visit, digital tools and services during the visit, digital services in the COVID-19 period. As participants were very few in number (7), no reliable quantitative conclusions could be drawn, therefore no statistical analysis was conducted. However, data tables were created, as data visualization allowed us to identify patterns regarding the use of digital tools and services before and after COVID-19 in relation to the demographics of the organisations, or other qualities revealed from the interviews.

Finally, content analysis of web-based content focused on three channel categories: the organisations' official website, their social media channels (Facebook, Instagram, Tweeter and YouTube) and their presence in review platforms (TripAdvisor and Google reviews). Regarding the website analysis, the variables sought were the digital tools and services listed in the questionnaire (e.g., virtual tours, digital exhibitions, promotional videos, e-ticket service etc.). In addition, the social media presence of each organisation was examined based on four main variables: the number of followers, the frequency of posting, the type of posts (promotional material, challenges, competitions etc.) and the visual identity of the brand. Finally, the presence on review platforms was examined based on three main variables: the number of reviews available for each organisation (in relation to its age), the review score and the level of completeness for each listing (e.g., information about the organisation, pictures, location etc.). The findings of the web-based content analysis were visualized in data tables and were compared to the findings of the interviews and questionnaires. They were analysed based on the demographic of each organisation and on the qualities revealed from the interviews.

4.2.5. Research ethics

For the purpose of this study, prior to data collection, a consent form and the interview guide were sent to participants by email. The consent form included information about the research topic, the interview procedure, including the recording, and the use of the participants' data, such as their name and role in the organisation. This way, we allowed the participants to be fully aware of the content of the interview before they accept or reject our invitation and to choose between different options of anonymity. The study did not include any kind of deception and all participants were informed about the semi-structured nature of the interview and the possibility of asking additional questions. This was in line with the research ethics code

for the protection of the autonomy of the participant and its right to be fully informed about the use of the data (Orb, Eisenhauer and Wynaden, 2001).

However, due to the nature of the study, there was a risk that the interview could be interpreted by the participants as a form of "inspection". Indeed, some participants showed a sceptic attitude when they were approached and a rather defensive attitude during the interview, especially in view of the recording. To avoid the misunderstanding, in these cases, the author explained in detail the purpose of the study and assured them that their recordings will only be used for the purpose of the study and will not be accessible by third parties. In addition, we avoided questions that directly appointed specific individuals or internal management issues. Instead, all questions were asked in a way that allowed the interviewee to go into details or reply more generally.

It is important to underline that the researchers are not interested in inspecting or pointing out any organisation for their practices but rather to present the situation as it has developed, through the eyes of key-individuals and as objectively as possible.

Chapter 5: Research findings

5.1. Tourism and strategic management in Athens' museums and cultural centres

5.1.2. Strategic goals and target audience

When participants were asked about the strategic goals of their organisation with regards to visitation and target audience, their responses revealed two general approaches: *a 'strategic' approach*, that includes the identification of specific strategic goals, certain timeline, marketing efforts, target audience and systematic data collection for statistical purposes; and *a 'non-strategic' approach*, that is related to less specific goals and less clear actions for achieving those goals.

Considering the 'non-strategic' approach, some interviewees did not give a straightforward answer or found it hard to specify their strategic goals, or even identified it with the museum's mission: "*This question cannot be answered in a paragraph or two sentences, [...] it is a big chapter, that in order to be answered correctly it should be an interview in itself. Therefore, it is indirectly answered through the mission statement*" (Lalaounis' museum Director). In contrast, the Head of the Education Department of the EMST acknowledged the lack of central management strategy, due to management issues and the current lack of Director and differentiated it from the internal strategies of the museum's departments: "*But this is our own perspective from the Educational Programs Department. The Communications Department in cooperation with the new Director, that will come, will create a management strategy*". When it comes to target audience, while several participants share the goal of increasing their number of visitors and attracting a wider audience, certain small museums do not seem to follow a clear plan for targeting specific audiences. Moreover, the 'non-strategic approach' is related to a less systematic approach to numbers and statistics. The Jewish and Lalaounis museum, for instance, do not collect any visitor's data. The Lalaounis museum Director explained: "*It is now forbidden to collect statistical data, due to GDPR restrictions. [...] We do not have metrics anymore about the demographics of those who visit our site or social media*".

On the other hand, interviewees that showed a 'strategic approach' referred to more specific, transparent and measurable goals. In the case of the MCA, its strategic objectives are clear and transparent, as they '*can be found at the museum's website*'. A museologist of the NAM explained that the strategic plan of the museum is set by the Ministry of Culture and Sports, however, it does not focus on specific target groups. The representatives of the SNFCC and Kotsanas museum, two recently established organisations, claimed to have reached or surpassed the footfall goals set since their opening and they seem to have specific management strategies for the future. The SNFCC, while it had not had specific strategic goals regarding tourism until 2020, it has been included in the strategic priorities for the period 2020-2023: they aim to enrich the visitors' experience with digital tools, by focusing on accessibility and tourist services. The interviewee referred to specific indicators for measuring their performance in relations to their goals, such as visitor numbers and visitor's satisfaction. Thus, the 'strategic approach' was directly associated with metrics and data collection. For instance, the Kotsanas museum collects statistical data throughout the year (e.g., gender, age, education, field of studies, motivation to visit etc) to identify their visitors' profile and assess their performance. "*Statistics play a major role for us. [...] We address to everyone which means that we have the*

very difficult job of audience segmentation". Similarly, the SNFCC launces big yearly surveys including questions about different aspects of the experience.

5.1.3. Target audience and visitors' profile

All participating organisations address to all ages, ethnicities and social groups. As explained by Lalaounis museum Director, "*a museum [...] should be able to address to a wide audience [...] and, upon that, it should be able to provide specific tools for specific target groups*". Indeed, a priority for most museums seems to be the younger generations of visitors, in line with their educative role, while an older, more conservative audience is also mentioned by many participants: "*The younger generations of visitors are a priority for us, and I believe they should be for all museums. [...] Of course, the elderly is another priority, along with younger generations, as they have the time to do things that during their work years they couldn't*" (Jewish museum Director). Through educational or community programs, museums aim to attract different social groups. For instance, the EMST welcomes refugees or former drug addicts, while the SNFCC and the MCA attract a stable number of people with disabilities. Moreover, all organisations address to an international audience and they attract both Greek and international visitors throughout the year, with the latter showing an increase during the summer months: "*In the last few years, the museum addresses to an international audience and aims to attract tourists during the summer months*" (Head of Communications, MCA). However, "*the educational programs primarily address to a Greek audience*", as pointed out by a museologist of the NAM, something that has been observed in many participating organisations, as very few of them offer English-speaking programs.

When it comes to the motivations of visit, various motives were mentioned, depending on the nature of the museum or organisation. The perceptions of professionals about the reasons to visit a museum underline the sources of attraction that may act as a competitive advantage for their cultural organization. In our study, all museums referred to reasons such as interest to the museum's topic, desire to learn or academic research. Besides thematic visits, in 4 out of 7 participants, recreation related to the museum's image is considered to play a crucial role: the attractiveness of the building, the architecture or the view from the top attracts many visitors to the SNFCC, which is considered a landmark, designed by the world-famous architect Renzo Piano. This perception was expressed by smaller museums as well: "*We believe that many of*

our visitors come also because our premises are sunlit, airy and generally visitor-friendly"
(Lalaounis museum Director). A third reason for visit is related to the reputation of a museum.
As expressed by the representative of the NAM "*for foreign visitors, it was very important that*
(the museum) is a must-see attraction of Greece and Athens". In addition, the MCA attracts
many visitors on the basis of its temporary exhibitions; in the last ten years, the rebranding of
the museum has shifted the focus from its permanent archaeological collection, mostly popular
to tourists, to the all-year-round temporary exhibitions of contemporary art, that attract a
younger audience. In addition, the museum's café and the gift shop are an important source of
attraction, as they have developed their own brand and dedicated audience. Furthermore, the
need of visitors for a hands-on, interactive experience is underlined by two participants
(Lalaounis and Kotsanas museums) and is considered as one of the main purposes of visit.

5.1.4. Marketing efforts for attracting tourists

When it comes to international visitors, while all museums welcome a large number of tourists
every year, 5 out of 7 participating organisations have not taken systematic actions towards
attracting tourists and international visitors so far. Big museums and cultural centres, like the
NAM and the SNFCC, welcome a large number of tourists, as they are considered must-see
and landmark attractions, respectively. As a result, up to 2020 they had not designed a targeted
long-term plan to increase their international audience. However, the SNFCC has placed
tourism among its strategic goals for the next years "*The SNFCC attracts many tourists but,*
for sure, it can attract even more through targeted communication efforts, which is among our
future goals".

On the other hand, small and medium-sized museums have invested in various communication
efforts to increase tourist visits and develop an international profile, including direct marketing
and traditional advertising methods. For instance, the MCA and the Kotsanas museum offer
subway advertising, posters, flyers and, generally, printed material available at hotels,
municipality kiosks or the airport. In addition, they have invested in public relations, a cost-
effective strategy, with press releases and contacts with tourism entities, such as the Greek
Tourism Confederation (SETE) and the Municipality of Athens, among others.
Moreover, a popular communication strategy seems to be digital marketing and promotion
through social media, website, newsletters and digital presence: As explained by the Head of

Communications (henceforth HoC) of the MCA: "*The museum has invested a lot in social media and all sorts of digital communication, to come in direct contact with its audience, without the interference of mediators, such as the press or paid entries. Thus, it found a way to reach directly its target audience, free of charge, with content in two languages*". Emphasis is also put on review platforms and UGC. The Kotsanas and the MCA have exploited the 'word of mouth' by establishing a strong presence in TripAdvisor and Google. The Kotsanas museum, despite its newly established nature, is ranked in TripAdvisor as number 5 of top activities in Athens, with 290 reviews in 3 years of opPublieration. As explained by the Director: "*The museum's advantage in this case is that it's a hidden jewel of the city, so once visitors discover it and their museum experience live up to their expectations, they are willing to share it with the world*".

Finally, several museums make efforts to create an international profile, through travelling exhibitions, participation in international conferences, research programs or international networks (e.g., ICOM), collaboration with international institutions (e.g., between the SNFCC and the Lincoln Center, between the Kotsanas museum and the University of Indianapolis), participation in European programs, (such as Creative Europe and Erasmus, in the case of the EMST), residence programs (Jewelry Artist in Residence program by the Lalaounis museum), among others.

5.1.5. Difficulties in attracting tourists

The difficulties that museums face when it comes to attracting international audiences are related to different factors. One of them might be their location, as is the case of the NAM: "*For visitors that have travelled to Athens only for a few days, the Museums of Acropolis is the top priority*"; as a result, museums that are away from the Acropolis area, might not be convenient to visit and can easily be skipped due to time restrictions.

A closely related factor is the access to the location, as is the lack of a metro station close to the NAM or SNFCC, which is thus accessible by vehicle, bus or on foot. More specifically, the SNFCC is even further away from the city centre and subsequently requires extra time and planning from the visitor's side. However, the cultural centre compensates for this disadvantage by providing daily free shuttle bus transport to and from the city centre.

Other difficulties are related to infrastructure. For instance, the MCA is a small museum that "*does not have the capacity to host large tourist groups*", which is particularly popular in mass

tourism packages. As a result, they focus on diversifying their programming and intensifying their marketing and communication efforts, to attract individual visitors from different channels.

Nevertheless, the cost of targeted communication and advertising is a major challenge for some museums. The lack of state funding and the limited sources of income have been repeatedly stressed as an obstacle for developing digital tools or communication campaigns, especially by smaller museums "*Tourist numbers could increase through better advertising and communication, which would be possible if we had funding for that, which we don't*" (Jewish museum Director). Finally, an inherent difficulty for new small-size museums is that it takes time to become well-known and attract tourists. As a response, the Kotsanas, museum makes extra communication and partnership efforts to introduce the museum to an international audience and strengthen its brand identity.

5.2. Digital technologies in Athens' museum and cultural centres before the COVID-19 breakout

5.2.1. The role of digital technologies in the museum experience

All participating organisations underline the important role of digital technologies in museums. As expressed by the EMST's Head of Communications: "*New technologies are a necessary element, there is no question whether they contribute to the enhancement of the experience or not. Without them, you do not exist*". However, they all pointed out that the role of new technologies is not to replace the live exhibition experience but rather to complement it. The on-site (exhibition) experience is placed in the centre of their planning, while new technologies are primarily used as interpretation tools that enrich the experience. The HoC of the MCA explains: "*The role of new technologies is to maximize the interpretation tools available to the visitors. It's one thing to have museum labels and brochures in the exhibition and it's a different thing to offer digital applications or mobile interpretation systems*". The co-creation of experience, with the active involvement of the visitors, seems to be integral part of the visit, as they all stress the importance of experiential learning, through digital or non-digital means.

The Director of the Kotsanas museum highlight the contribution of technologies on different aspects of the visit: "*Technology can be applied in many different ways, inside and outside the museum, in workshops, in educational programs or in a customized visit experience*". Another

view focuses on their quantity, to not distract the visitor from the exhibits: "*There is no point to offer too many digital applications because the museum has rich collections and tons of things to see. For sure, they can improve the experience in some cases, but they shouldn't become the centre of the experience*" (NAM). The issue of balance between the digital technologies and the exhibits was recurrent in the discussion and flexibility was perceived as a key factor: "*I'm one of those that believe that new technologies do not subtract from the live experience. You give visitors as many options as possible and you let them choose how they will customize their experience*" (EMST, Head of Communications).

The HoC of the MCA claimed that new technologies can enhance the competitiveness of the museum, as "*by attempting to render the museum more contemporary, it becomes more attractive*". The increase in attractiveness is related to the younger generations of visitors, which are more familiar in co-creating their experience through digital tools. As highlighted by the Jewish museum Director: "*It is very important to attract young people through the ways that are familiar to them, so as to allow them to take part in the exploration, discovery and, subsequently, learning*".

A different perspective is expressed by the Lalaounis museum director, who considers state-of-the-art digital tools, such as virtual tours, to have a negative impact on the on-site museum experience: "*I don't think that a virtual tour before the visit will actually help the visitor, I believe that, if you do that, the visitor will simply not come to the museum because there are tons of other things to see*". Other participants did not perceive virtual tools as a threat "*as long as they are set in a way that showcases the hands-on experience*" (Kotsanas museums Director). However, in view of the new circumstances created by the COVID-19 pandemic, the SNFCC Visitors Experience Director highlighted that digital applications "*do not only enrich the live experience but also replace it, whenever it is necessary*".

5.2.2. Digital technologies in the pre-COVID-19 period

5.2.2.1. Digital technologies as marketing tools (Before and after the visit)

To better understand the impact of COVID-19 in the use of new technologies in museums, we examined the use of digital tools before the COVID-19 breakout, throughout the visitor's

journey. At this part, we present the digital technologies used as marketing tools before and after the visit, to help tourists and generally visitors learn about the museum or cultural centre, plan their visit and engage with the organisation after their visit.

All participating organisations have their own **website**, which is available in two languages, Greek and English, and offer a wide range of information to help visitors prepare their visit: general information about the museum/organisation (e.g. history, vision, departments), visit information (e.g. opening hours, ticket prices, location) as well as audiovisual content and news page, while the Kotsanas museum also includes visitor reviews. Navigation on the website is made easier with search bars in almost all websexhibiites, while organisations with many events and activities on a standard basis, such as the SNFCC, offers an event calendar. All participating organisations offer multiple contact options for visitors interested in visiting the museum/organisation, including telephone and e-mail, while most of them can be reached via a website contact form or personal message on Messenger or Instagram, as shown in Table 5.

	Contact options						
	NAM	**SNFCC**	**EMST**	**MCA**	**Kotsanas**	**Jewish**	**Lalaounis**
Telephone calls	X	X	X	X	X	X	X
E-mail communication	X	X	X	X	X	X	X
Website communication form		X			X	X	
Facebook Messenger		X	X	X	X	X	X
Instagram DM		X	X	X	X	X	X

Table 5: *Contact options in the pre-COVID-19 period*

When it comes to **digital services** available before the COVID-19 breakout, online ticket service or online booking option were available at the cultural centre (SNFCC), for tours and educational seminars, while no museum offered such option. However, it should be taken into account that the cultural center offers various events and activities on a daily basis, much more in number than museums. School programs could be booked via email or telephone in all cases. Finally, the Kotsanas museum and the MCA are the only participants that offered an online gift shop even before the COVID-19 breakout and promoted sales online. An overview of the digital services available before and after the visit is presented in Table 6.

	Digital services						
	NAM	EMST	SNFCC	MCA	Kotsanas	Jewish	Lalaounis
Online ticket service (e-ticket)		X					
Online registration form (for tours, workshops)		X					
Online registration form (for school programs)							
Visitation/Current waiting time widget							
Online Gift Shop				X	X		

Table 6: *Digital services in the pre-COVID-19 period*

As for the 'digital museum', most organisations offered a **digital database of their collection** in Greek and English, including artworks, artifacts and other objects related to their theme. The Jewish museum offered 2 digital exhibitions, consisting of pictures and descriptions, in the form of a narrative for information or research purposes. The EMST also offered rich **education material** as well as **microsites** for their collection, events archive and library database. Similarly, the SNFCC for the 2021 themed events programming. In addition, all participants offer audiovisual material such as promo videos, lectures, or events available on demand, for the promotion of upcoming or past exhibitions/events. More specifically, the SNFCC makes a wide range of its events available online on-demand, on a regular basis, while some events or lectures are broadcasted live-streaming. An overview of digital museums' options is presented in Table 7.

	Digital museum						
	NAM	EMST	SNFCC	MCA	Kotsanas	Jewish	Lalaounis
Promotional videos	X	X	X	X	X	X	X
Digital collections		X	X	X		X	
Digital exhibition						X	
Virtual Tour							
Educational Material		X				X	
Digital School programs							
On-demand educational activities / seminars							
On-demand lectures / performances	X		X	X		X	
Live streaming educational activities / seminars							
Live streaming lectures / performances			X				
Podcasts			X (on ad-hoc basis)				
Microsite		X	X				
Museum guide			X (ASD-friendly)				

Table 7: *Digital museums in the pre-COVID-19 period*

In addition to the website, all participating organisations are present in **review platforms**, such as Google Maps and TripAdvisor, with a solid number of reviews, and visitors are encouraged, by some of them, to leave a review after their visit. As expressed by the MCA Head of Communications: "*In all the museum spaces, there are discreet signage that encourages them to share their experience, including our hashtag, mentions and channels*". The friends of the museum, especially the younger members, are also encouraged to share their experiences with the museum while it has been empirically observed that "*visitors themselves have the need and the desire to do so*".

All participants have active accounts on Facebook, Instagram and YouTube. Their **social media** platforms can be reached via links in their websites, however, it was observed that, in some cases, the hyperlinks were inactive. When it comes to **social media use**, all participating organisations follow an "awareness" and a "comprehension" strategy with the aim to strengthen museum–visitor relationship. They post basic information about events and exhibitions across channels in order to increase their visibility as well as rich media, including videos and pictures from events or behind the scenes, to enhance visitor understanding and

knowledge of their purpose, collections, and facilities. However, fewer participants (4 out of 7) follow an "engagement" social media strategy, primarily via Facebook and secondarily via Instagram. For instance, the EMST and MCA encouraged interaction with their audience by reposting visitors' posts, posting questions to generate conversation, or creating image contests. Through this strategy, a sense of community was developed where visitors were motivated to maintain interest in the organisations activities and share content within their personal network. The NAM, the sole public museum, seems to have a weak presence in relation to its size, compared to other big or medium-sized museums. From our own observations and internet search, there seems to be no targeted digital communication strategy, including search engine and content optimization, as its channels were hard to find, and the content was less consistent compared to other museums. In contrast, while all participants are active on social media, some museums have significantly invested on building a strong **visual identity**, with specific graphic design, photos, hashtags and content, which is reflected on the number of their followers (as is the case of the SNFCC, EMST, MCA and Kotsanas). An overview of the participants' social media presence is available in Table 8.

	NAM	SNFCC	EMST	MCA	Kotsanas	Jewish	Lalaounis
Official Website	X	X	X	X	X	X	X
Facebook	11,848	239,570	49,130	92,410	11,223	2,629	12,333
Instagram	3,151	23,1k	16,2k	40,3k	1,307	216 (inactive)	7,547
Tweeter			6,522	11.965 (inactive)		677 (inactive)	235 (inactive)
YouTube	481 (75 videos)	18,8k (517 videos)	205 (33 videos)	2,030 (245 videos)	853 (70 videos)	183 (41 videos)	28 (5 videos)
Trip Advisor (reviews)	8,500	887	72	1,189	290	176	99
Google Maps (reviews)	17,500	29,500	1,405	2,128	825	300	247
Other	Blog			tmblr			

Table 8. *Participants' digital presence in social media*

Besides social media and new technologies, museums offer non-mediated engagement options. For instance, the NAM has asked from school visiting the museum to send them some of the drawing that were created by the children while the SNFCC has launched the "Design your own stamp" program and they invited children to send their drawings that were printed to stamps and sent back to them.

5.2.2.2. Digital technologies as interpretations tools (during the visit)

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The technologies available during the visit vary across participants, ranging from basic digital tools to state-of-the-art technologies. All participating organisations offer free Wi-Fi for visitors and they all use basic **digital signage** technologies, such as display monitors or projectors. These are used either for the provision of information in at least two languages, instead of conventional information signs, or for the projection of videos related to the exhibition. Moreover, the EMST offers tour guide system that includes headset, for large groups in a noisy environment.

When it comes to **touchscreens and interactive technologies**, these are not available in all participating organisations. In fact, 4 out of 7 offer interactive technologies for information search or for promotional purposes. More specifically, the Jewish museum offers touchscreens and computers that allow visitors to search for information at the museum's archive or watch documentaries related to the exhibits, while the Lalaounis museum offer digital lexicon, for information search about the history of jewellery and relative events/exhibitions around the world. Furthermore, the SNFCC offers temporary **interactive installations** to engage the audience with its events, such as the poster printer installed in 2020, for the promotion of the Summer Nostos Festival. Similarly, the MCA offered an installation for printing the visitors' photograph on a coin, as part of a numismatic archaeological exhibition. The interactive installations are mainly for entertainment purposes and enhance the personalization of the experience, depending on the level of interest of the visitors.

Regarding **mobile technologies**, 3 out of 7 participants offer a mobile application on a regular basis for further customization of the on-site experience. More specifically, the application includes audio guide, available online or via QR code scanner with additional information and audiovisual material. The SNFCC and the Lalaounis museum also offer QR codes, for faster access to online information. It is worth mentioning that, while some museums have their own customized app (EMST, Jewish), others (MCA) rent virtual space in a shared app, that includes many museums.

Furthermore, the SNFCC and MCA occasionally offer cutting-edge technology applications, such as **Virtual Reality or Augmented Reality installations**, predominantly for school and community programs or exhibitions. The SNFCC introduced an interactive virtual book in the 2020 Picasso audio-visual exhibition, while the MCA has hosted interactive tables and

augmented reality screening rooms, as part of temporary exhibitions. An overview of the digital services available on-site during the visit is presented in Table 9.

Digital technologies as interpretations tools							
	NAM	**EMST**	**SNFCC**	**MCA**	**Kotsanas**	**Jewish**	**Lalaounis**
Specialised Mobile Application	selected exhibitions	X		X		X	
QR codes		X	X	X		X	X
Virtual/interactive map installation				X			
Virtual reality (VR) installation			X	X			
Augmented reality app/installation			X				
Interactive installations			X	X			
Virtual games							
PCs, touchscreens			X	X	X	X	X
TV/Projector for videos/pictures	X	X	X	X	X	X	X
Free WiFi	X	X	X	X	X	X	X
Other		X (headset for big-group tours)		X (screens with sign language)	X (Interactive exhibits)		

Table 9: *Digital services available on-site during the visit, in the pre-COVID-19 period*

5.3. Digital technologies in Athens' museum and cultural centres in the era of COVID-19

5.3.1. Digital technologies during the March-June lockdown

During the first lockdown period (March-May 2020), two types of reactions of the participating entities were observed: an "immediate response" approach and a rather "hesitant" approach.

Organisations that responded immediately to the new circumstances, re-organised their mode and content of work and began launching digital content within a few days since the announcement of the lockdown in March 2020. Most participants began by creating an **archive of their previously digitised events and exhibitions** and by releasing many of these resources online, organised by topic (e.g., lectures, interviews, performances, etc). Some participants responded within a couple of days, such as the MCA and the SNFCC, that was preparing for

the lockdown even before its announcement, while some others used some extra time to get organised. Thus, the SNFCC released videos of recorded concerts, lectures and educational material from its archive, the MCA released content from past temporary exhibitions, while the Jewish Museum increased the frequency of the newsletter and sent out their existing educational programs' material to the friends of the museum.

Within a few weeks since the announcement of the lockdown, the participants started **digitising their planned activities** or **producing original content**, especially for the lockdown period, such as live streaming events, educational workshops, or virtual tours, that were made available mostly free of charge. For instance, the SNFCC launched the #snfccAtHome, a series of online events and virtual activities, which included, not only access to online material from past events, but also new virtual productions. The audience had the chance to virtually attend concerts, performances, sports classes and other events in real time and interact with the instructors or performers through digital means.

In addition, many museums focused on offering **different forms of virtual tours and exhibitions** available to everyone. The Jewish museum released 6 digital exhibitions between March and November 2020, one of which was the permanent collection of the museum, consisted of pictures and descriptions of selected exhibits or photos of from the museum archive. This practice had already been adopted before the COVID-19 breakout, with the launch of 2 digital temporary exhibitions, and was fast-tracked during the remote work period. Similarly, the Museums of Cycladic Art "*In June, with Tate's help, we managed to upload the whole TAKI (exhibition) catalogue online to a platform that attracted big numbers of visitors*". Furthermore, the Kotsanas museum launched a video with a 40-minute digital tour on its temporary exhibition, Nicola Tesla, performed by a staff member, which was available until the re-opening of the museum. In addition, it was the only museum that launched a walk-through virtual tour on its permanent collection, that gave visitors the flexibility to explore and interact with the museum exhibits at their own pace.

When it comes to **educational material**, the school programs were replaced by short videos with Do-It-Yourself games for children and families and by live streaming or recorded educational workshops from 5 out of 7 participants. The videos included crafts, drawings, music and experiments with materials easily found at home, aiming at keeping children creative during the lockdown. In addition, virtual challenges and competitions were implemented;

SNFCC invited children to create crafts, music or drawings and send them back to the Schools department via e-mail, while the EMST posted pictures of the museum's exhibits and encouraged the audience to send them their thoughts. This way an interaction was retained between the audience and the museums or the cultural centre.

Moreover, in the case of the MCA, all events addressed to the friends of the museum were launched in a virtual form, live streaming via Zoom meetings (e.g., artists' studio visits for young members). In addition, while the MCA and Kotsanas museums had already had an online gift shop before the COVID-19 breakout, the SNFCC also launched an e-shop during the lockdown period.

In contrast to the aforementioned approach, some museums, such the NAM and the Lalaounis museum, showed a rather hesitant attitude and did not invest in producing new digital content or adopting digital tools, as a result of the COVID-19 pandemic. More specifically, the NAM focused in following and managing its ongoing programming, part of which would be digital, as planned even before the COVID-19 breakout. The museum could not change its programming nor produced new digital products as a result of the situation, due to its public legal status that does not allow for flexibility. Similarly, the Lalaounis museum, a museum largely based on its hands-on educational programs and workshops, showed a reluctant attitude towards adjusting its offerings to the digital world, mainly due to financial reasons, as it is a self-financed museum. In this case, the lack of virtual presence and digital products was a conscious choice related to the sustainability of the museum. As expressed by the museum Director: "*It's too soon to start producing all these webinars if we don't know [...] if the audience is willing to pay a participation fee, when the last 6 months there are tons of free cultural products and material available online*", "*I believe that it is a mistake to offer a great virtual tour of a museum free of charge or with a very small fee [...] because, this way, the visitors will never come to the museum*".

5.3.2. Digital technologies after the re-opening

Following the governmental guidelines, all participants re-opened their doors to visitors in June 2020, under special circumstances. While the COVID-19 pandemic has had an adverse effect on their visitation, with significantly less visitors compared to previous years, the health and

safety measures introduced by the government have had an impact on the visitors' experience as well. The new guidelines included limited visit duration, limited number of visitors, use of protective face masks and hand sanitizer in all indoors spaces. Furthermore, tours and education workshops were either cancelled or offered for a limited number of participants. In many cases, the access to new technologies on-site, such as touch screens, public PCs or interactive tables, was restricted, which, in combination with all the above, reduced the active participation of the visitors in the co-creation of experience. As a result, all organisations continued developing online content and digital tools, in order to engage with all kinds of visitors, from tourists to locals who might not feel comfortable with visiting small indoors spaces.

When it comes to digital services, 4 out of 7 participants introduced an **online ticket service** in view of their re-opening, while the SNFCC had already had this service available before COVID-19. In addition, the SNFCC introduced an **online booking platform** for school programs, which had been arranged via e-mail up to that point, as well as a visitor attendance widget at the website, that displays whether visitation is low, normal or high. Finally, a digital school programs platform was launched in February 2021.

It has been observed that after the re-opening, most of the digital services were offered at a **blended mode**, both on-site and virtually. A representative example is the #snfccAtHome series, as most of the performances presented on-site at the SNFCC, with the physical presence of audience, were also broadcasted live-streaming and uploaded on-demand at the website. In addition, while tours at the Stavros Niarchos Park were offered to visitors on-site, video park tours were launched at the YouTube channel during the summer, in order to appeal to an audience as wide as possible. A similar strategy was observed in some museums, with educational workshops offered both on-site and online.

It is worth mentioning that, while the period of the 1st lockdown was dominated by over-supply of cultural products, the second lockdown that began in November 2020 was characterized by more moderate, balanced production. For instance, the Kotsanas museum did not upload free video tours, as during the 1st lockdown, but rather offered live streaming tours performed by staff members available on-demand with a registration fee. Similarly, the MCA, instead of uploading educational videos, launched live streaming educational workshops, including a registration fee. However, a more detailed presentation of the digital products of the second lockdown is beyond the scope of the present study.

An overview of the digital services available up to December 2020 is presented in Table 10. The digital services adopted after the COVID-19 breakout are marked with red colour.

	NAM	EMST	SNFCC	MCA	Kotsanas	Jewish	Lalaounis
Digital services							
Online ticket service (e-ticket)			X	X	X	X	X
Online registration form (for tours, workshops etc.)			X	X	X		
Online registration form (for school programs)		X	X				
Virtual collections/ digital archive		X	X	X	X	X	
On-demand lectures / performances	X		X	X		X	
Live streaming lectures / performances		X	X				
Podcasts			X (on ad-hoc basis)				
Online Gift Shop			X	X	X		
Visitation/Current waiting time widget			X				
Digital education							
On-demand educational activities / seminars		X	X		X	X	
Live streaming educational activities / seminars			X	X	X	X	
Digital School programs			soon				
Digital Tours							
Digital exhibition (tour)		X		X		X	
Video tour			X	X	X		
Interactive virtual tour					X		
Live streaming tour					X (2nd lockdown)		

Table 10: *Digital services offered after the COVID-19 breakout*

5.3.3. Factors that facilitated or complicated the use of digital technologies

In view of the sudden and unexpected situation created due to COVID-19 pandemic, the adoption of new technologies was a challenging procedure that has been facilitated or complicated by several factors.

The factors that **facilitated** the response of museums and organisations during the first lockdown were attributed, at a great extent, to the **flexibility and willingness of the staff**. The Kotsanas museum, for instance, as part of the Kotsanas museums network, was already familiar with remote work, through its remote collaboration with other museums or the Board of Directors or for travelling exhibitions. As a result, there was no big impact on the way they worked, as they had already been well-trained. Similarly, the Jewish museum apply a mentality of flexibility in different aspects of its management, and it has a **proactive philosophy**. The museum was already moving towards digital transformation of its collections, and the COVID-19 situation came to reenforce it.

Nevertheless, the **difficulties** that the participating organisations have faced are ascribed to various causes, while some of them were pre-existing even before the COVID-19 breakout. An issue that all the museums had to face at the beginning of the lockdown was the practical difficulty of **remote work and communication**: the great number of e-mails, group meetings and back and forth of documents, the difficulty of remote collaboration with graphic designers or IT executives, transportation and social distancing while filming online content were only some of them. In addition, the Kotsanas museum stresses out the consequences of the sudden closure of the museums to the **on-going programming**: "*We had planned numerous tours, conferences, tailor-made visits, custom-made gifts, presentations – I hereby mention only 1/10 of them. Thus, we had to first deal with this "storm" and then see how technology can keep the museum alive and educative*".

One of the main difficulties expressed by many museums is **the cost of adopting new technologies,** an issue that pre-existed in most cases. Both Kotsanas and Lalaounis are small-size private museums that do not receive any state funding or European funds. As a result, they need to cover the cost of new technologies from their own sources of income, which have significantly decreased during the last year due to the COVID-19 pandemic. As expressed by

J. Lalaouni "*the museum is now struggling to remain open so any cost in new technologies is not our priority whatsoever*".

While the financial barrier has always been a challenge for museums, especially smaller ones, the greatest challenge in this case was the decrease in revenue in combination with the acute **increase of international competition**, as during the first lockdown there was an over-supply of free cultural products by museums and cultural institutions around the world. This situation had an adverse effect on the **sustainability of self-financed museums**, as explained by J.Lalaouni :"*If I don't know whether I will cover the production costs of a webinar, I cannot start preparing it. [...] It's too soon to start producing all these webinars if we don't know who will attend it, when is the best period to launch it and, most importantly, if the audience is willing to pay a participation fee, when the last 6 months there are tons of free cultural products and material available online*". Other museums are trying to overcome the cost barrier by including new technologies in funding proposals and programmes, and by doing consistent fundraising efforts. As explained by the Jewish museums Director "*There is no other way to obtain or maintain digital tools but to incorporate them in programmes and funding proposals at every chance, so as to keep them at a level that they do not lose their value or utility because their technology has become obsolete*". Thus, during the lockdown, the museum submitted two funding proposals that included digital tools and programs. However, the sheer digital competition was a challenge even for big, sufficiently financed organisations. As pointed out by the SNFCC representatives, the new competitors in combination with the **shift of focus of the audience to the current affairs** created the challenge to keep the audience engaged, to stay relevant and to reflect the pulse of the society.

Another difficulty seems to be the **lack of specialised staff** to support the maintenance and optimization of new technologies, which causes a feeling of insecurity in adopting digital tools. As stated by the representative of the NAM, "*We avoid having complicated devices as it is worse for a visitor to find an out-of-order device rather than to not find it at all. We try to avoid new technologies that are fragile or easy to break down because we do not have the staff to support it anytime.*" Even though the museum has many archaeologists to produce digital educational content, it does not have an Information Technologies specialist to support the set up and maintenance of the digital tools. When it comes to outsourcing the development and maintenance of these technologies, the museum faces financial burdens. In addition, as NAM is a public entity, hiring a new staff member is a non-flexible, complicated procedure. Smaller

private museums facing the same difficulties have found moderate solutions, such as hiring external hourly-paid staff. As explained by the Jewish Museum Director "*Two hours per week, that's what out museum can offer, not a permanent staff position*".

Another difficulty, relative to the aforementioned ones, is the **optimization** of digital tools in order for museums to take full advantage of digital technologies. As pointed out by J. Lalaounis, "*even if we had the budget, our problem is the optimization of new technologies, as no company in Greece, from those that we can collaborate in person, can guarantee us full digital optimization*". Apart from internal processes, another issue that was raised is user experience optimization, in order for online platforms and digital tools to be user-friendly for all kinds of visitors. The SNFCC representatives stress that it is importance to "*ensure easy and effective access for visitors that are less familiar with new technologies [...]. We need to design and adjust our services and content so as every possible point of digital interaction to be characterized by easy, fast and effective processes*". Similarly, the EMST Head of Educational Programs pointed out: "*We shouldn't take for granted that, just because digital technologies are adopted more and more, we attract everyone. No, new kinds of exclusions are created*".

In addition to that, the Jewish museum Director explains the critical role of **choosing the right digital tools** for museums "*it's extremely important to adopt new technologies that are 'evolvable' because the present digital tools in two years - the latest - will become obsolete, so they should be easily updated or refurbished without having to be replaced*". The need to be up to date does not apply only to the technical aspect of new technologies but also to their content. As stated by the SNFCC representatives "*our presence in various online platforms and the use of digital tools cannot be a static process; on the contrary, it should a flexible and constantly evolving process in order to follow the evolution of technology*".

5.3.4. Opportunities and threats of digitalization

For some organisations, the situation formed due to the COVID-19 pandemic can be regarded as an opportunity for cultural institutions for digital upgrade or even transformation. As expressed by the SNFCC, the urgency created from the lockdown led to investments and co-ordinated efforts towards the evolution, enrichment and promotion of digital tools. A digital

transformation, that would otherwise happen at a much slower pace, was now speed up. In addition, an important benefit of consistent digital presence of cultural institutions is the opportunity to attract audiences without geographic barriers and to expand its sphere of activities and impact. As expressed by the Kotsanas' Director, new technologies work complementary, not competitively to live experience: "*if technologies are set up the way they should, they can promote the live experience*".

Nevertheless, the importance of balanced use of digital tools has been pointed out by most participants. The oversupply of digital content might play a competitive role to the live experience and subsequently to the sustainability of museums, especially the smaller ones. As expressed by the Museum of Cycladic Art representative: "*We were discussing whether we should launch a virtual tour for an upcoming temporary exhibition. Should we launch it before the physical exhibition? Everyone says no, it's a pity. But if we launch it simultaneously with the physical exhibition, it might reduce the number of physical visitors, and that is a sustainability issues for the museum*".

5.3.5. New technologies in the post-COVID-19 era

All participating organisations agree that new technologies are "here to stay", as they have disrupted our everyday lives by redefining the way we communicate and share experiences. In the field of culture and museums, digital transformation has been a recurrent topic the last years which has been reinforced and accelerated by the COVID-19 pandemic and the situation it has created. Some organisations underline that the post-COVID-19 era is still far away and that the recovery from its consequences will be slow. As expressed by the Jewish museum director "*The world will recover at a slow pace or it might never fully recover to the level of travelling, the way and the frequency, as it was before. I believe that some things will change so we should prepare by making the choices that will open up more paths, not fewer.*"

However, an issue that has been emphatically stressed by all participants is the importance of balanced use of digital means in a way that they only complement but not replace the live experience. The Lalaounis museum director refers to the competitive role of digital means against the live experience: "*We will try to adjust to the new circumstances, but we should do it right. We should not drive people away from the museums by offering everything online […].*

I believe that it will have a negative impact, not only on the income but also on the experience". Other perspectives reveal other alternatives, as in the case of the MCA: "*If you want to be fair to all social groups [...] you can't exclude those who might feel in danger if the come. So, we should forget the cost for a while and find a fair solution: physical and virtual exhibition at the same time. We are towards this direction; however, the fundraising team is under great pressure to find alternative sources of funding in order to remain sustainable*".

The most important lesson that the museums have been taught by the pandemic is the importance of flexibility and strong reflexes in order to adjust to every situation, as expressed by the majority of them. The pandemic required crisis management in two levels, an internal level, when it comes to the staff, and an external level, when it comes to the audience. The Kotsanas museum director underlines that "*we have developed the reflexes that will help us survive so as to be, not those that follow the circumstances, but those that create them*". The same view is shared by other participants as well, such as the Jewish museum that believes that "*museums should not only follow and reflect the social pulse, but they should also create it, with dynamic interventions and communications. We should not step back [...] but we should find new ways to face the new circumstances with strength and creativity*". In this context, attention should be focused on maintaining audience engagement, as expressed by the SNFCC: "*Enriching our digital content but also the 'dual' content that is available both physically and online are in the centre of our efforts [...]. At the same time, we explore ways to make different aspects of the on-site experience available online*". However, some museums, such as the Lalaounis, believe that it is too early to discuss for a long-term strategy against similar situations; they believe that this is something that should be discussed in a year from now that more data will be available.

5.4. Implications of the findings

The present study examined museums and cultural centres in Athens from a management perspective in order to explore whether they have made targeted efforts to attract tourists and enhance their museum experience through digital technologies, before and during the COVID-19 period. Our findings showed that while tourism is a target audience for all museums and cultural centres, only those with a clear strategic plan have done co-ordinated actions to increase their tourist visits. In addition, while all organisations use digital technologies to

enhance the visitors' journey throughout its stages (before, during, after the visit), there are different views with regards to the digital tools that should be available before and after the visit, in order to maintain a balance between enhancing the visitor's experience and ensuring the museum's financial sustainability. Finally, COVID-19 acted as an accelerator for organisations that were already towards a digital transformation process, while it highlighted important challenges that the museums have to face, in order to ensure business continuity and keep their audience engaged. The implications of our findings our discussed based on the three main aims of the study.

5.4.1. Strategic management & marketing efforts for attracting tourists

When it comes to the first and second research question, regarding strategic planning and marketing tools for attracting tourists, the findings are discussed together as they are interrelated. The interviewees' perceptions regarding **strategic management** in their organisations revealed two general approaches: those who acknowledge the existence or the lack of a strategic plan and those who perceive it as a less clearly defined set of goals, related to the organisation's mission. The existence of a strategic plan does not seem to relate to the organisation's size, funding structure or age; Considering big organisations, with stable funding, medium or small-sized organizations, relying on earned income and donations, as well as long- and newly established organizations, the study revealed examples in all categories that have developed specific management strategies, based on clear goals, statistical data, target audiences and marketing plan.

However, when it comes to **including tourism in their strategic plan**, there seems to be a different pattern. **Big organisations** have not focused on targeting tourists to increase their footfall, while examples of small and medium-sized organisations identify increasing visitors stemming from tourism as one of their strategic goals. This could be explained based on the leadership position of big organisations; the NAM, for instance, is one of the top heritage attractions for tourists, thus it has not invested on digital marketing to stay relevant and engage an international audience, and especially younger generations of tourists. The SNFCC, a newly established big organization, has managed to build a strong identity and attract many tourists during the first years of its operation, without having developed targeted tourism engagement actions. However, it has not settled there; tourism has been set as a strategic priority for the

next years while digital marketing is considered a major communication tool to outreach to a wide audience.

In contrast, **a small-sized** newly established museum, Kotsanas, has invested in strategically targeting an international audience from the beginning of its operation; Great emphasis is put on word of mouth through review platforms (e.g., TripAdvisor) and on digital marketing through social media, while they have also developed public relations with local tourism-related entities for communication purposes. The importance of tourism in the strategic planning of smaller museums can be explained based on their funding structure. As they rely on earned income, donations and sponsorships, tourism is an important source of income, especially during the summer months. In this context, the MCA goes one step further to expand its fundraising and crowdfunding efforts to philhellenes and tourists with a strong interest in the museum, as they have already developed a dynamic brand identity. On the other hand, tourism has an important role also in **small-sized museums with a less clear approach to strategic management**. In this case, we observe notable dissemination efforts, through bilingual digital content, international collaborations and digital marketing, despite the lack of measurable indicators for the assessment of their effectiveness.

Therefore, considering the sensitive nature of tourism to social and economic changes, public and non-public museums should include tourism in their strategic priorities, and develop communications and busines development plans, in order to stay competitive in relation to other contemporary type of tourism experiences.

5.4.2. Challenges in attracting tourists

Regarding our third research question, about the challenges faced by organisations in attracting tourists, these are mainly related to internal factors. More specifically, small-sized museums with a 'non-strategic approach' associated their weak marketing efforts with the lack of funding for better advertising. However, considering that digital marketing is a cost-effective strategy that offers free metrics, allows content optimization, and enables reach to targeted audiences, it is not clear whether the difficulty lies on the budget or on the level of exploitation of digital tools. In fact, digital marketing requires human resources with hard-skills and expertise, which might be difficult for small-size museums to sustain.

Therefore, smaller museums should invest on including a digital marketing specialist in their team and develop a communications plan and social media strategy, in order to maximize their advertising efforts in a cost-effective way. In case they cannot afford a full-time position, they could outsource it to a digital marketing agency.

Other internal factors are related to management issues. In the case of the EMST, a public-funded medium-sized museum, the lack of a clearly designed strategy regarding the attraction of tourists is related to the lack of a Director in the last two years. Similarly, the lack of permanent premises between 2000-2016 was linked to the lack of data collection through visitor surveys. However, while the museum's current priority is to ensure its full operation in its new building, it has shown remarkable communication and educational efforts, in terms of developing an international identity for the dissemination of Greek contemporary art. The limited capacity of one small-medium museum constitutes another difficulty, as in the case of MCA, that cannot host big tourist groups within its premises. Big tourist groups in a lot of cases utilize mass tourism packages, a fact that highlights the need for targeting non-organised cultural tourists through customized communication.

Other difficulties are related to the location and transport connection of museums. As the NAM, for instance is located at a long walking distance from the Acropolis area, with no metro station nearby, it is often skipped by short-visit tourists. However, considering that city-break tourism, which is increasingly popular in Athens, is a short trip, this challenge should not be overlooked by organisations. In view of the 'alternative' cultural tourism experiences, that have become increasingly popular in Athens, traditional cultural attractions such as archaeological museum should shift its focus towards the new generations of tourists, in order to stay relevant and competitive, and find ways to overcome location barriers. **As a solution,** policy makers could introduce a shuttle bus service, as in the case of the SNFCC, which is farther away from the city centre. More specifically, in cooperation with Athens municipality, a bus line could be introduced, that will connect all major museums and archaeological sites of the municipality in order to facilitate tourism mobility to different cultural sites.

5.4.3. Digital technologies throughout the customer journey, before COVID-19

5.4.3.1. The role of digital technologies as interpretation tools

The fourth research question focused on the role of digital technologies in the museum experience. Different perceptions were revealed, that varied from a negative, a rather conservative, a positive to an enthusiastic approach.

Overall, there was a consensus on the positive role of digital technologies as interpretation tools for the enrichment of the museum experience. It was observed that organisations with clearer goals and strategic management were more enthusiastic with digital tools than those with a less clear strategy. For instance, the MCA and the Kotsanas museum highlighted the possibilities offered by digital tools, not only for the provision of information, but also for the provision of additional experiences that complement the museum's collection, such as workshops or educational programs. When it comes to the way technologies are set within the exhibition, this is related to the type of the exhibits and to the opportunities for interactions they allow. Museums with more interactive exhibits, made use of technologies as interpretation tools, to facilitate the understanding and the interaction with the exhibit, through images or videos. For instance, the Kotsanas' exhibits are interactive models of ancient machines. Thus, the use of basic multimedia tools is considered enough to showcase the exhibit and facilitate learning. One the other hand, museums with less interactive exhibits seem to employ more digital tools to increase the level of interaction during the experience. For instance, the Jewish museum Director showed a positive attitude towards digital tools and highlighted their importance for young visitors, especially for a museum with static exhibits. As the collections' objects are displayed in showcases and are presented in a more traditional way, the director has focused on increasing flexibility, through mobile technologies and audio tours, as well as interaction, through touchscreens and pc stations for information search.

The museologist of the NAM, despite recognising the importance of technologies in museums, showed a less enthusiastic approach to digital technologies. However, while the archaeological museum, similarly to the Jewish museum, displays static objects with less opportunities for co-creation, no interactive technologies seem to be integrated into the exhibitions, beyond screen monitors. The limited use of technologies was associated to the richness of the collections and to the lack of ICT staff for the maintenance of these technologies, an issue related to the inflexible structure of public museums.

Therefore, policy makers should incorporate ICT professionals in public museums with the aim to install and secure the maintenance of digital technologies. Considering that archaeological museums can benefit significantly from digital interpretations tools and the possibilities they offer, the Ministry should include the digital technologies among the strategic priorities of the NAM, in order to upgrade its cultural offering and increase its competitiveness.

5.4.3.2. The role of digital technologies as marketing tools

As to the fifth research question, regarding the digital technologies available throughout the customer journey and their use to enhance the visitors' experience, several patterns can be observed.

During the preliminary stage, when visitors collect information and plan their visit, all organizations offer various information in their website, to enhance prior visit knowledge, which has been shown, by previous studies, to be the main driver for active participation during the visit (Anton, Camarero, Garrido, 2018). However, not all participants had fully developed their digital presence, as some of them did not have a digital inventory of their collections, especially small-sized ones. While in small museums this might be related to budget restrictions, in the case of public museums, such as the NAM, the lack of digital archive could also be explained by its inflexible public legal status. When it comes to digital services for planning the visit, all participants offered multiple contact options of mediated communication. However, no museum offered automated booking services such as e-ticket or online registration to tours or workshops. In fact, Anton, Camarero and Garrido (2018) has shown that planning a museum visit reduces the value of the experience as it detracts from the fun and the spontaneity of the on-site interaction.

After the visit, organisations encourage visitors to rate them on review platforms and to connect with them in social media. Social media and their website are used to upload content in order to maintain and strengthen the museum-visitor relationship. While social media are primarily used to inform and promote upcoming events or new exhibitions, organizations with a strong brand identity (SNFCC, MCA, EMST) use it to engage their audience, through interaction (e.g., reposts, contests etc.). Through this strategy, they aim to develop a community where visitors are motivated to maintain interest in the organisations activities and share content within their personal network. Smaller museums should follow this paradigm and try to

develop communities through social media, to increase audience engagement and strengthen their digital presence.

Among social media, Facebook, Instagram and Youtube are the most popular channels. The social media presence of participants is directly related to their management strategy and to their legal status, with non-public big and medium-sized organisations dominating the picture. This can be explained considering the non-flexible nature of a public museum, regarding communication efforts and human resources. While the SNFCC has a dedicated Communications and Marketing Department, the NAM has the Department of Exhibitions, Communication and Education. Even so, the communication strategy of the museum does not seem to be clear to its staff as the Director is in charge of the social media marketing. In contrast, state-funded private museums, such as the ESMT, have developed a strong brand identity with a dedicated Communications Department and intensive digital marketing efforts. When it comes to smaller museums, while some of them do not show a consistent social media strategy, others, such as the Kotsanas, have managed to maximize their reach within a few years of operation. Therefore, it seems that the difficulty in developing digital marketing strategies is primarily related to human resources and expertise and, subsequently, to budget restrictions for hiring and sustaining a Communications professional. Thus, when it comes to smaller museums that cannot afford a digital media specialist position, the existing staff of smaller museums should focus on increasing their digital skills through specialised seminars or training programs.

5.4.4. Digital technologies and COVID-19

The breakout of COVID-19 had a disruptive impact on cultural spaces as they were forced to close for almost 3 months, postpone or modify their programming and explore ways to keep their audience engaged and ensure business continuity. However, the impact of COVID-19 varied across organisations and was found to be relevant to several factors, such as the legal status of the organisation (public vs private), the funding structure and the availability of staff with an expertise in digital media and technologies.

More specifically, the programming or budget of the **public museum (NAM)** did not change, due to its inflexible organization structure. The strategy of the museum is designed and

supervised by the Ministry of Culture and Sports, thus the programming or allocation of funds could not be modified. In addition, the lack of specialised staff in the field of ICT or digital marketing did not allow for a strong digital presence during the lockdown. On the other hand, private entities with specialised staff (EMST, Kotsanas, Jewish), especially those funded by grants or sponsorships (SNFCC, MCA), showed greater flexibility with regards to the allocation of their resources, and where thus able to digitise their programming or produce digital content especially for the lockdown period. Private self-financed museums, mainly dependent on their tickets or educational programs, without specialised staff (Lalaounis) showed the greatest difficulties, as their sustainability was directly threatened by the lockdown and COVID-19 restrictions, which did not allow on focusing on the digitalisation of the museum. Finally, private museums with specialised staff developed digital content of various forms. Overall, the factor that was found to be crucial for the development of digital content during the lockdown was the availability of specialised **Marketing and Communications professionals** or staff with an expertise in digital media within the organisation's staff. Organisations should invest towards this direction, while policy makers should increase state funding for museums to be able to afford new positions among their staff.

Regarding the development of digital content during the lockdown, it was observed that organisations with an established brand identity (SNFCC, EMST, MCA) showed an immediate response, by organising their archive and releasing **previously digitised** content. Their content included videos from past events on-demand and educational e-books from already existing education programs, that were made available to the public for free through various digital channels (website, social media, press). Smaller museums, such as the Jewish, focused primarily on the museum's Friends and collaborators, by increasing the frequency of their newsletters and sharing educational programs or previously digitised digital collections.

Within a few weeks, cultural organisations with specialised staff (SNFCC, EMST, MCA, Kotsanas, Jewish) began **digitising their planned activities** in different forms or producing new digital events and activities. At first, the digital content was rather static: temporary exhibitions curated and optimized for digital consumption (e.g., MCA, Jewish); videos with educational games or videos of virtual tours (e.g., SNFCC, Kotsanas). Soon, digital content became **more interactive**, allowing the consumer to be involved in the action: Live streaming performances (SNFCC, EMST) with enabled comment section, live streaming sports classes (SNFCC), live streaming studio visits (MCA, for museum's Friends), interactive virtual tours

(Kotsanas). Interactive content was mainly introduced by organisations with an already strong social media presence (SNFCC, EMST, MCA, Kotsanas). The same organisations showed **increased activity on social media,** not only for the promotion of free cultural activities and audience engagement, but also for the promotion of income generating services, such as gift shops. Finally**,** bigger organisations, with big social media audience, **introduced community engagement projects**, such as virtual challenges (SNFCC, EMST), where consumers were encouraged to write or create something, and send it to the organisation's staff. This practice was not only cost-effective but also allowed co-creation of the experience.

After the reopening, in June 2020, the impact of COVID-19 was found on the **footfall**, as the number of visitors significantly decreased, and secondarily, in terms of **visit experience**, which was restricted by health and safety measures. As a response, private cultural organisations developed digital services to facilitate the preparation of the visit (e.g., e-ticket, online registration options). The cultural centre with the availability of resources (SNFCC) introduced **additional services**, such as a digital version of the e-shop or visitation widget at the website, while many events and activities were offered at a dual mode, both on-site and online (e.g, #snfccAtHome concerts, performances etc.), in order to satisfy consumers that might have been hesitant to visit indoors or crowded spaces. This practice was adopted by smaller museums as well, especially in educational workshops.

5.4.5. Digital transformation challenges

The COVID-19 created unprecedented challenges for cultural organisations. It also brought to the surface some long-existing issues, which appointed to the great importance of human resources and budget for the sustainability of organisation. At an operational level, all private organisations faced the challenge of postponing or cancelling their programming, which required intensive efforts and long hours of work by staff members. For museums which were less familiar with remote work (Jewish), home-office during the lockdown was an additional difficulty at first. However, the flexibility and the willingness of the stuff and the proactive philosophy were highlighted as important factors for the adaptation to the new circumstances and the production of digital content.

At a management and business continuity level, an important external challenge was the increase of international competition, due to the oversupply of free cultural content by organisations around the world. This fact highlighted the need for a strong digital presence, which was related to internal factors, such as the availability of financial resources and human resources with a digital expertise. The availability of financial resources was found to be relevant to the legal status of the organization, as all private museums referred to budget issues (EMST, MCA, Kotsanas, Jewish, Lalounis). However, the financial difficulties varied, depending on the sources of funding available; museums doing intensive fundraising efforts (e.g. MCA) were more sustainable than those solely dependent on their own income-generating sources (e.g. Lalaounis). In addition, museums that included staff members with specialised know-how on digital media (SNFCC, EMST, MCA, Kotsanas, Jewish) were those that developed rich digital content during the lockdown period. Moreover, organisations with a strong brand identity and social media presence (SNFCC, EMST, MCA) were those that identified the opportunity to expand their audience beyond the Greek borders and develop an international audience that could be potential future tourists. Thus, the content of those organisations addressed Greek and international audience and was written in both Greek and English.

All the above highlight the importance of budget and of specialised staff for the digital transformation of museums. It is thus crucial that museums will identify new ways to raise funding, either by expanding their scope of activities through business development (e.g., rent their spaces for galas) or hire fundraising professionals to identify and exploit funding opportunities. To achieve that, it is important to design a clear strategic plan and set specific goals for the future, In the same vein, museums should employ Marketing and Communications professional and create a social media strategy, in order to increase their reach, engage more users and develop a strong brand identity that will attract more tourists and cultural consumers.

5.5. Conclusions, limitations and ideas for future research

The present study explored the role of digital technologies in museums and cultural centres of Athens for the attraction and engagement of tourists. The use of digital technologies was examined as a factor that enabled the co-creation of experience and, thus, increased the competitiveness of museums, in relation to alternative tourism products that have gained

popularity in the last years. In view of the recent breakout of COVID-19 pandemic, the study also explored the impact of COVID-19 on the use of digital technologies by the participating organisations, to keep audience engaged and ensure business continuity during the crisis. For this purpose, 7 cultural organisations – 6 museums and 1 cultural centre – were examined through in-depth interviews with key professionals, such as Directors, Museologists, Heads of Communications and Heads of Visitors' Experience, questionnaires and website content analysis.

The findings showed that, until 2020, big organisations with a leadership positioning had not made targeted efforts for attracting tourists, despite their disadvantages in terms of location and transport connection. In contrast, small- and medium-sized private organisations had placed tourism among their goals or strategic priorities, as an important source of income. Digital marketing via social media and UGC were considered to be important tools for attracting tourists, as a cost-effective strategy. However, they have not been equally exploited by all participating organizations, primarily due to lack of staff with specialised knowledge on digital media. When it comes to engaging tourists throughout the customer journey, participating organisations use non-interactive and interactive technologies as interpretations tools, which may enhance the co-creation of experience, and are employed primarily by private organisations/museums. However, during the COVID-19 crisis, interactive technologies on-site were not available while emphasis was put on the digital content of the organisations. The creation of digital content was found to be related mostly to private organisations with digital media expertise. Therefore, it seems that many museums had already been in the process of digital transformation, when COVID-19 broke out. While cultural organisations with adequate financial and human resources managed to accelerate this procedure and exploit digital media to expand their audience beyond geographical borders, museums that lacked those faced important sustainability issues.

While the present study explored the use of digital technologies from the perspective of museums' and cultural centre's key stakeholders, site observation by the researcher was not possible due to COVID-19 restrictions. In addition, due to the holistic approach of the study, both digital media and computing technologies were included in the study. As a result, the depth of the analysis was restricted due to time and space limitations.

Future studies could focus on a specific type of digital tools, such as social media, and examine their role as a marketing tool for attracting and engaging international audience during the COVID-19 period. In addition, future studies could compare the digital production during the first lockdown with that of the 2nd lockdown. Furthermore, our studies revealed different factors that seem to have an impact on the production of digital content, such as the legal status of an organisation, the funding structure and the existence of specialised staff. Future studies could adopt a quantitative approach and examine these factors in relation to the digital media strategy of the organisation.

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Appendix A.

Interview Questions

Tourism and strategic planning

1) What is your museum/organisation's mission?

2) What type of visitors do you usually find at your museum/organisation? (demographics and motivation of visit)

3) What are your strategic goals regarding visitation and target audience?

4) Do you do targeted efforts to attract tourists and international audience? If yes, of what kind?

5) Do you face challenges in attracting tourists? If yes, of what kind?

Digital technologies in museums and cultural organisations

6) Do you use digital technologies to encourage co-creation of experience? If yes, why? What is their role in the museum experience?

7) What kind of digital technologies do you use to enhance the visitors' experience throughout the customer journey and how are they used? (Before, during and after the visit)

8) How do you customize your services to address the needs of different target groups, including Greeks/tourists, young/old visitors, individuals/groups)?

9) What kind of challenges do you face in adopting digital technologies?

COVId-19 and digital technologies in museums and cultural organisations

10) How did COVID-19 affect your organisation's operation and programming?

11) Did your organisation adopt digital technologies or practices, as a response to the COVID-19 crisis? If yes, of what type? If no, why not?

12) In what mode are museum services/activities offered? i.e., blended (museum and online) and/or totally virtual.

13) What are the challenges that your organisation face with regards to the adoption and use of digital technologies?

14) Will digital technologies and practices be continued and/or fostered in the post COVID-19 era?

Appendix B.

QUESTIONNAIRE

Museum/Organisation DEMOGRAPHICS

Name	
Legal Entity	
Museum/Organisation category	
Number of employees	
Year of establishment	
Year of renovation	
Visitation per year	
City/municipality	
Permanent exhibitions or temporary or both	

Please, indicate (X) where applicable:

1. MARKETING & COMMUNICATION

Online presence and social media				
	Main purpose of use			
	Awareness/ Communication (basic info about museum/ events/ exhibitions)	*Comprehension (photos of events /exhibitions, behind the scenes etc)*	*Audience-engagement (ask questions, generate conversation, interactive contests/ challenges, repost)*	*Customer service (reply to messages /comments, give information, receive feedback)*
Official Website				
Facebook				
Instagram				
Tweeter				
YouTube				
Pinterest				
Flickr				
Trip Advisor				
Google Maps				
Other				

Contact options	
Telephone calls	
E-mail communication	
Website communication form	

Live chat	
Facebook Messenger	
Other	

2. Digital VISITORS SERVICES

Online services (website)	
Website language (e.g. GR, ENG, FR, DE etc.)	
Information about the museum/organisation	
Visit information (opening hours, ticket prices, location)	
Online ticket service (e-ticket)	
Online registration (for tours, education programs etc.)	
Multimedia content (e.g. videos, pictures)	
Virtual collections/digital archive	
Visitation/Current waiting time widget	
Visitor reviews	
Forum/articles/interviews	
Online Gift Shop	
Live streaming performances/lectures	
Recorded performances/lectures	
Live streaming (educational) workshops/activities	
Recorded (educational) workshops/activities	
Podcasts	
Events Calendar	
Search field/filters	
Other	

Tech/Virtual Services (in-situ)	
Specialised Mobile Application	
QR codes (scan for information, pictures, videos, audios)	
Virtual/interactive map installation	
Virtual reality (VR) installation	
Augmented reality app/installation	
Interactive (educational) installations	
Virtual games	
TV/Projector for videos/pictures	
Free WiFi	
Other	

3. EDUCATION

Educational programs & workshops	In-situ		Online	
If the programs can be delivered in any language other than Greek, please indicate in which language (e.g. ENG, FR)				
	Free	*Paid*	*Free*	*Paid*
School programs				
Seminars/workshops				
Lectures				
Activities (e.g. games)				
Events (e.g. music, movies)				
Visitor type				
For schools				
For children				
For families				
For adults				
For elderly				
For people with disabilities				
Other				

Tours	In-situ (Tour-guide)		Virtual tours	
If the tours can be delivered in any language other than Greek, please indicate in which language (e.g. ENG, FR)				
Tours	*Free*	*Paid*	*Free*	*Paid*
Regular Tours				
Thematic Tours				
Audio-guide				
Other				
Visitor type				
For schools				
For university students				
For families				
For children				
For adults				
For people with disabilities				
Other				