

Management of Cultural Products:

E-Relationship Marketing and Accessibility Perspectives

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The Cultural Product: Integration and Relational Approach	1
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In this chapter, the authors approach the theme of the definition and classification of cultural products according to the major Italian and international authors dealing with the issue, knowing that culture, before being the core product of an enterprise, belongs to people. They argue for more theoretical discussion into the organizational and managerial dynamics of cultural product, drawing from the consideration that to date management research is neglecting cultural product as a serious object of investigation despite its economic, social, and political significance. Starting from the analysis of the main literature on “culture,” the authors show a new concept of cultural property: the integrated cultural product. Moreover, the analysis of cultural product, the distinctive characteristics and dynamics of cultural industries are made adopting a relational approach. As a result, the aim of this work is to define the unique dynamics of the integrated cultural product in a relational perspective.

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Gandolfo Dominici, University of Palermo, Italy

Gianpaolo Basile, University of Salerno, Italy

Lucia Aiello, Universitas Mercatorum, Italy

This chapter aims to represent the evolution of the cultural vocation of the territory with relation to the cultural product. The authors achieve this by adopting a holistic, viable-systemic approach. This approach proves useful to draw a better representation of the relationships existing among members of

the territory - which is a prerequisite for the creation of any cultural product - and among them and the stakeholders to whom the cultural product itself is targeted. The authors consider the notion of relationship as a form of interactive connection determining - in causal fashion - a series of input-output effects among system members.

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This chapter uses a case study to analyse the ways a cultural product, if managed efficiently and effectively, can activate processes of economic growth and stimulate the start-up of new businesses. The work is divided into two parts: the first presents the mapping of cultural enterprises in the province of Matera, and the second presents a quantitative analysis on the main economic enterprise activity in the area under investigation. The aim of this research is to demonstrate the main area of evolution in business development in Matera and its province since UNESCO declared the “Sassi of Matera” to be a World Heritage Site. In particular, the analysis of cultural activities and those of tourism and eating out allows readers to see that the economy of Matera, despite being an inland community, is linked to tourist accommodation and development thanks to the “Sassi of Matera.”

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Sergio Barile, Sapienza University of Rome

Marialuisa Saviano, University of Salerno, Italy

Cultural Heritage-Management (CHM) in Italy appears to chronically suffer from resources fragmentation. The aim of this chapter is to highlight the need for a value co-creation logic based on resource integration in CHM to improve awareness and involve citizens, organizations and other stakeholders in the cultural heritage preservation and enhancement activities. The methodological approach adopted is an integration among Service-Dominant-logic(S-DI) and Service-Science(SS), within the general framework of the Viable-Systems-Approach (VSA). By shifting focus from the objects of exchange to the relations among parties, S-DI and SS emphasize the importance of collaboration in market interaction. VSA integrates the two perspectives within the structure-system paradigm explaining how collaboration among viable systems takes place. On the basis of the proposed integrated perspective a Service-Based-Systems approach is defined that allows developing a model for CHM based on a value co-creation logic. The authors argue that, to implement an effective co-creation, actors should be linked as resource integrators within a network relationship and share a governance approach inspired cooperating principles as postulated by the VSA consonance model. The chapter provides a conceptual framework of reference for integrating the wide variety of resources needed for an effective management approach to cultural heritage preservation and enhancement. This approach requires a cultural change in CHM organizations in order to effectively exploit: opportunities of a co-creation logic oriented to integrate multi-disciplinary; multi-professional resources; capabilities and competences. By adopting the VSA consonance framework, the authors highlight the relational conditions for resource integration in a Cultural Heritage Territorial System model on the basis of a value co-creation logic.

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The g-local changing process requires new service-based business models which redesign a universe of value crucial to economic success. The chapter aims to verify how this process can be achieved through knowledge-based-cultural activities that enhance people and their capabilities, promoting participation together with knowledge. The Knowledge economy, S-D logic and Experiential Learning represent the theoretical framework for devising a model to assess the impact of cultural experience on learning through the measurement of cross-cutting skills. The model has been applied on a pilot study represented by the Giffoni Experience, a cultural and innovative experiential format known worldwide and tested in two editions (2011, 2012) to assess the impact of the cultural experience in terms of empowerment or self-enhancement through the performance levels achieved in the four cross-cutting skills.

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Fabio Severino, University of Rome La Sapienza, Italy

Company sponsorships are a way to fund cultural management, allowing cultural organizers to be independent, especially in those countries where this sector is supported mainly by public funds. This chapter discusses the results of a survey the author conducted in Rome, Italy. Theoretically, in this city with a great cultural heritage, there are many opportunities of sponsorships both for companies looking for good tools of communication (i.e. for tourism targets) and for cultural managers asking for money to carry out better work and to make long term plans. Using a questionnaire of 20 closed questions, in a face-to-face way, the author asked 345 firms how, when and where they have been working with sponsorship tools. The main result of the survey indicates that there is often a problem of communication between these two different worlds: the cultural sector and commercial firms.

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Mario Siglioccolo, University of Salerno, Italy

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This chapter investigates the possible relationships between cultural institutions (museums, theatres, libraries etc.) and companies, which have been increasingly occurring in the last years. While cultural institutions have been progressively needing to acquire financial resources and managerial skills to survive and valorise their activities, at the same time companies are trying new ways to differentiate their image, by means of associating it with the cultural sector. The adoption of a descriptive-normative approach enables the identification of many kinds of collaboration (patronage and corporate philanthropy, volunteer program and payroll giving, cause related marketing, cultural sponsorship, co-branding, licensing and merchandising, electronic relationships, and finally, partnership), distinguished according to the intensity and duration over time. For each relationship, mutual benefits and disadvantages are

described in detail, even with the support of real case studies. This joint consideration of the various possible relationships aims to provide an overall view of the issue considered, which differentiates this contribution from the literature so far produced.

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Mario Siglioccolo, University of Salerno, Italy

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The focus of museum communication has shifted from visitors to a variety of key stakeholders and new emphasis is being placed on museum-audience relationships. The literature on this topic has quite neglected to consider the evolution of museum communication activities up to date, and studies have not proceeded to identify stakeholder groups which may relate to museum in different ways. This chapter aims to fill this gap by providing a museum-specific framework for communication-management. The latter intends to be a practical tool to help in managing relations with stakeholder groups. Key concepts of corporate communication are contextualized to museums, starting with the depiction of museum personality, identity, image, and the process of development of museum reputation is explained. The latter may be considered as a multifaceted process; to understand the evolution of museum reputation and guide its correct development. Focus is given to information and communication technologies, which have changed the way people interact with museums.

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Society is experiencing unprecedented changes, largely attributable to the evolution of communication technologies, which are steadily reframing our way of life, and the methods we use to establish and maintain social relations. Museums are therefore facing numerous challenges, in general as a result of these developments: apps, open content, and the Internet-of-things. A complex relationship can be created between visitors and the museum, and this also opens new unexplored opportunities for user involvement in the museum's activities, even during the course of the visit itself. It is worth taking care to identify all the variables involved in the museum-visitor-relationship, which also encompasses the social dimension. Both the museum and the individual are active participants in a gradually expanding relationship, namely the growth of the so-called Web 2.0 and social media. The increasingly pervasive spread of e-mobile technology is a foretaste of the moment when museum goes will radically change both the way of establishing relations with these organisations and the actual ways of using museum services. This chapter focuses on digital resources and approaches adopted by user-centred museums, where there is an increasing impact from the internet and social media.

Chapter 10

Open, User, and Smart Innovation in Cultural Firms199

Valentina Della Corte, University Federico II of Naples, Italy

The cultural sector is made of a variety of firms (both public and private) whose primary economic value derives from their cultural value (Flin, Mearns, O'Connor, & Bryden, 2000). The focus in this chapter is on the organizations that manage cultural sites, with a specific attention to the interactions between their specific sector and tourism industry. Nowadays, the competitive environment is more and more complex, owing to the globalization as well as to the interactions of this sector with others, so the cultural actors have to enrich their cultural offer in order to meet customers' needs effectively and efficiently. For this reason, innovation is acquiring a crucial role in a marketing approach for cultural firms in order to promote and distribute value through their offers. Managers of cultural firms are generally oriented to the preservation rather than to the promotion and valorization of cultural resources. Innovation, in its different perspectives, can be the key component for the creation of a new approach in the offer of cultural products, aiming at catching external opportunities through a continuous, interactive and innovative relationship with all the actors of the destination in order to gain sustainable competitive advantage.

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The increased usage of mobile apps has a great potential for the tourism industry. Through the use of mobile apps, web portals and social media may allow a fast and wide diffusion of awareness for museum and attract a large number of visitors, thus increasing the value of their image, with moderate investments. The aim of this chapter is to identify the key factors as antecedents of customer satisfaction for the design of a mobile app for a museum. To this aim, the authors use the Kano model that allows categorizing service attributes according to how they are perceived by customers and estimating their impact on customer satisfaction. This model is adopted in order to identify express and latent needs of cultural tourists and to design a mobile app for museum according to their perceptions and expectations. To apply the Kano model, the authors used qualitative data collected through 300 questionnaires administered to tourists visiting the Sicilian cities of Palermo and Trapani over a period of 3 months (October- December 2012). The results of this analysis can be relevant for museum and public managers to plan strategic and operative activities, for researchers in the field of touristic marketing, for application developers, and for all those concerned with touristic and cultural heritage issues.

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Paolo Esposito, University of Piemonte Orientale, Italy

The enhancement of artistic and cultural heritage has been a recurring theme within the scientific and cultural debate by scholars from different disciplines and in the political agenda of most countries over the last decades (Senese, 2002; Meneguzzo & Grossi, 2002; Ferri & Zan, 2012). During the early 90s, researchers focused their attention on management practices, tools and models referring to arts and cultural organizations (Peacock, 1982; Frey, 1994; Towse, 1997; Christiansen & Skaerbaeck, 1997;

Zan, 2002), as well as on the development of new and different organizational forms under pressure from the New Public Management (Pollitt, 2001; Lapsley, 2008; Ferri & Zan, 2012; Lindqvist, 2012). These studies aimed at analyzing, developing and proposing different conceptual and management frameworks within a context characterized by increasing scarcity of financial resources in addition to regulatory complexity. The purpose of this chapter is to provide an analysis of the growing phenomenon represented by the “Virtual Musealization” of archaeological sites in Italy, focusing on the case of Pompeii and Herculaneum.

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Kerri Tan, University of Wales, UK

Modern developments in communication media are creating new networks of information diffusion which are profoundly altering the way in which people can construct shared ‘realities’. Internet along with its prototypical subsets, notably social media, is enabling the emergence of new mechanism of human association which are shaped by – yet also shape – the development of this new medium of communication. This chapter integrates social media theory and luxury fashion brand theory arguments to examine the knowledge benefits that this cultural transformation provides to the development of a marketing communications programme. The authors argue that the key to providing an effective marketing communication programme is understanding and responding to customer expectations through the integration of social media platforms and traditional marketing communications media.

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Maria Antonella Ferri, Universitas Mercatorum, Italy

The present contribution aims to propose some research on business models in tourism, with a particular focus on accessible cultural tourism. This chapter takes up part of a previous monograph on the reconfiguration of Abell’s model that, in the final part, is applied to accessible cultural tourism. The main objective is to bring some of the reflections and results obtained during these years in tourism to an international level, whilst taking into account the particular role that culture has in tourism activities of an area, and how it may provide a key point for the development of certain businesses as well as accessible tourism. The chapter also considers tourism that is able to satisfy special requirements, which would otherwise limit or exclude some groups of individuals, such as those with mobility, cognitive or perceptual impairments (related to age and / or temporary conditions) from the process of touristic consumption.

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Lucia Aiello, Universitas Mercatorum, Italy

The chapter proposes an organizational model that is based on web 2.0 and the role of new technologies. The author presents the organizational model of Peepul, whose mission is awareness of the “culture accessible to all.” It is necessary to consider models that address the choices of men and women in

their various roles, ambitions and aspirations. The chapter focuses on the revolution of the concept of physical and virtual space and its role in the organizational model of reality that offer products, cultural goods and services and/or related to them. The simulated environment and the physical one can both be explored so they are on an equal balance; in particular, they can be parallel or complementary, i.e. a market (e-Bay), a square (Facebook). Therefore, if each subject attributes to a virtual market the same meaning than the physical, we can argue that it is necessary to define the characteristics of the organizational model web: network-2.0.

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Guido Migliaccio, University of Sannio, Italy

Differences among people have to be considered as an opportunity, even in the field of economy. This would contribute to socially and professionally enhance the condition of people with disabilities. Due to an increase in life expectancy and medical advances, there are currently many people with disabilities. Disability creates significant burdens for public expenditure and for private enterprises including people with disabilities in their staff. Disability management facilitates the inclusion of people with disabilities in the production system, by considering diversity as an opportunity. There have been significant initiatives from museums and other cultural institutions, as well as publishing houses. Studies on this subject should therefore multiply in order to encourage the development of specific opportunity/cost measurement standards regarding the inclusion of disabled people in working processes and investments on products that, planned for all, favor disabled and non-disabled. In this new context, the education and culture of people with disabilities play a crucial role. In this chapter, the author focuses on the Italian experience which is assumed to be useful in broader contexts.

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A New Frontier in the Satisfaction of the Cultural Tourist: The QR Code345

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Angela Scilla, University of Turin, Italy

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The world of cultural heritage is experiencing a fervent phase of promotion and enhancement of its assets, thanks to the innovative use of knowledge and information communication tools. Tourists do not need new products and new services for their satisfaction but demand new experiences. Thanks to ICT in the cultural sites and the diffusion of social media, mobile life, and Internet devices, the tourist can visit the same area feeling a new emotion and new experience. Given the increasing importance of the technologic innovation in cultural sector for a timely communication with the tourist, this chapter aims at measuring the tourist satisfaction towards the quality of the QR Code, while also providing important development strategies. The analysis is carried out through the administration of the SERVPERF questionnaire to 191 users aged between 18 and 40 years, asking them to express their level of satisfaction towards this service on the basis of a 7 points Likert scale. The tourism satisfaction for QR Codes is good but not uniform among the five dimensions.

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Enrico Bonetti, Second University of Naples, Italy

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This chapter analyses how cultural heritage destinations should evolve to keep pace with changes in the demand for cultural tourism. The empirical evidence shows that the most important heritage destinations suffer from a misalignment of their value propositions with respect to the new needs of cultural tourists. These types of gaps can be filled only by understanding the features and evolution of these needs and by identifying sustainable strategic paths to enrich the typical offering of these heritage destinations. This chapter proposes a theoretical framework that combines the most relevant trends in cultural tourism from a demand and an offering perspective. The Pompeii case is subsequently analyzed through the lens of the proposed theoretical framework.

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Tourism has been featured as a rapidly growing industry with excellent opportunities for business development. There are several success factors which determine the growth of the tourism promotional endeavors of the hotels. This chapter evaluates four of the key success factors related to web based tourism promotion: trust, electronic service quality, usability and accessibility. The theoretical models available for measuring the aforementioned success factors are evaluated along with the survey on the development of research activities in these four fronts. The theoretical frameworks within each concept categories are compared and contrasted to infer the competitive advantage of each model in modeling web based tourism promotion activities. Finally, the conclusions are made on the basis of the analysis undertaken on the conceptual models in each of these categories.

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Chapter 11

The Culture on the Palm of Your Hand: How to Design a User Oriented Mobile App for Museums

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ABSTRACT

The increased usage of mobile apps has a great potential for the tourism industry. Through the use of mobile apps, web portals and social media may allow a fast and wide diffusion of awareness for museum and attract a large number of visitors, thus increasing the value of their image, with moderate investments. The aim of this chapter is to identify the key factors as antecedents of customer satisfaction for the design of a mobile app for a museum. To this aim, the authors use the Kano model that allows categorizing service attributes according to how they are perceived by customers and estimating their impact on customer satisfaction. This model is adopted in order to identify express and latent needs of cultural tourists and to design a mobile app for museum according to their perceptions and expectations. To apply the Kano model, the authors used qualitative data collected through 300 questionnaires administered to tourists visiting the Sicilian cities of Palermo and Trapani over a period of 3 months (October- December 2012). The results of this analysis can be relevant for museum and public managers to plan strategic and operative activities, for researchers in the field of touristic marketing, for application developers, and for all those concerned with touristic and cultural heritage issues.

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INTRODUCTION

In spite of the global economic crisis, the mobile internet devices sector (including smartphones, tablet and similar hybrids) is among the few sectors experiencing a continuous and fast growth.

At a global level we have today about 1.5 millions of mobile app, 500,000 tablets' apps and over 60 billions of mobile apps downloaded by smartphones and tablets (School of Management del Politecnico di Milano, 2012). In the United States about 119.3 million people (51% of mobile phone users) own a smartphone (ComScore, 2012). In Italy, according to estimates, about 32 million of smartphones, 2.5 million of Internet TVs users and 2.9 million of tablet have been sold by the end of 2012. Forecasts say that in 2015 the sales of smartphones will overcome those of Personal Computers (in Italy 49 million versus 47 million) (School of Management del Politecnico di Milano, 2012).

These devices are becoming a daily presence in the life of people who want to be *always connected*. This represents a great opportunity for the software industry that can exploit a fast growing market, as well as for any kind of firm that can take advantage of these new tools to get in touch and keep the relations with a growing number of customers. They give to the users, and to the companies supplying software application, the opportunity to keep continuous connections with customers/suppliers, sell/buy online to and from anywhere, get and supply geo-referenced information and different kinds of entertaining-relational uses.

The new "mobile economy" has relevant implications for Internet marketing strategies. The adoption of a mobile marketing strategy allows the organization to follow the client/user along the whole relationship cycle.

In the tourism sector this opens a wide range of opportunities to attract and gain the fidelity of visitors. "Mobile tourists" can go through a new way of travelling as "virtual tourists" for which

the travelling experience is empowered by the information and entertainment coming "also" (but of course not exclusively) from their new "travel buddy": the mobile technology device.

Tourist attractions like museums must not lose this chance and need to find new ways to get the attention of this new kind of tourists, becoming "Museum 2.0."

Mobile apps have the potential to personalize the users' museum experience whenever and wherever they like, integrating collections, exhibitions and other offerings into a much broader range of use-case scenarios than we have ever imagined.

Geo-referenced information can attract tourists inviting them to visit the closest museum and maintain the relation after the trip, thus getting more chances of repeated visits.

The challenge for these services is to be able to rapidly supply customer oriented content at low cost (or for free) following the growing expectations of customers/users. Hence, understanding the antecedents of the user experience becomes pivotal. Functional aspects are not enough to overcome the new challenges; a very good app in functional terms could result useless to reach the target. Therefore, it is necessary to design apps according to users' expectations and desires so that they can be able to establish and keep the virtual relation.

In this study we apply the Kano Model's to a cluster of Sicilian museum visitors in order to design a user oriented mobile app for museum.

The island of Sicily (Italy) for its geographic position, historical heritage and mild weather has a strong cultural touristic vocation that still has not been fully exploited. Sicilian museums are frequently undervalued and barely visible on the web. Mobile application technology, due to the low costs of diffusion, can enhance significantly the Sicilian museum offer, but unfortunately most of the Sicilian museums are badly managed by local government, which does not invest enough financial resources and is not able to innovate and understand the advantage of web based services.

The reason why of this study is to show the potential of Sicilian cultural tourism and how it could be exploited by a more enlightened governance of the sector.

In this study the objectives we aim to achieve are:

1. Discover explicit and latent needs of museum visitors.
2. Test visitors' potential interest in museum apps.
3. Give some practical suggestions about how to design a museum app considering visitors' satisfaction requirements.
4. More generally, to contribute to innovation and development of cultural tourism that is potentially one of the main resources of Sicily.

The article is structured as follows: we first represent the theoretical framework of the study, then we briefly describe the Kano model and after that we apply this model to our cluster. Findings, limitations of the study and further research conclude the paper.

THEORETICAL FRAMEWORK

The role of the museum has become increasingly complex in the last years. Nowadays, museum's competitive environment is not composed only by other museums, but it involves also other leisure and tourists attractions, as theatres, cinemas and amusement parks (Dirsehan & Yalçın, 2011). Furthermore, due to the increasing funding difficulties, museum managers are focusing on new ways to attract wider audiences and meet their satisfaction (Daw, 1997; Rowley, 1999; Goulding, 2000; Kaufman, 2004; Hume & Mills, 2011).

Kotler & Kotler underlined how museums' marketing should have "its focus on the museum experience from the point of view of visitors and consumers." (Kotler & Kotler, 1998, p. 15). This

implies that the managerial emphasis is gradually shifting towards marketing strategies focused on visitors' expectations, rather than on curators' dictation. This new managerial style becomes essential for museums to achieve a sustainable competitive advantage (Crimp, 1985; Vergo, 1989; McLean, 1994; Kawashima, 1998; Rowley, 1999; Goulding, 2000; Rentschler, 2002; Harrison & Shaw, 2004; Caldwell, 2005; Boorsma, 2006; Lehn, 2006; Dirsehan & Yalçın, 2011).

Several researches on museum visitor behavior pointed out that the modern visitor is more interested on the "experience" of the visit rather than on the cultural information enrichment, that they can get also reading a book or surfing the Web (Falk & Dierking, 1992; Prentice et al., 1997; Kawashima, 1998; Goulding, 1999; Rowley, 1999; Goulding, 2000; Thyne, 2001; Hume et al., 2006; Rojas & Camarero, 2006; Slater, 2007; Bifulco & Ilario, 2007; McCarthy & Ciolfi, 2008; Chan, 2009; Dirsehan & Yalçın, 2011; Kirlezli, 2011).

The experience, which is at the basis of post-modern turn in marketing theories (Firat et al., 1995) and one of the key concepts of Consumer Culture Theory (Arnould & Thompson, 2005), is also considered as an antecedent of customer satisfaction (Kotler & Kotler, 1998; Rowley, 1999; Burton et al., 2009; Chan & Yeoh, 2010; Lau & Badaruddin, 2010; Dirsehan & Yalçın, 2011).

Authors as Kotler (1991) and McLean (1996) stated that museum marketing should adopt a visitors-focus approach oriented to design an offer able to meet visitors' expectations. Adopting the perspective of the visitors is fundamental because there may be a discrepancy between museum managers' idea of quality and the value perceived by visitors (Edvardsson, 1996; Hume et al., 2007). Hence, first of all, it is crucial to know which are needs and expectations of visitors and their actual level of customer satisfaction/dissatisfaction. Furthermore, museum managers should conceive the visitor experience as a way to establish a symbiotic relationship between the visitor and the cultural resource (McArthur & Hall, 1996). The

visitor-oriented approach should, indeed, involve the visitors to participate to the design of the offer. This can be considered a form of co-creation of value (Pralhad & Ramaswamy, 2000) able to enhance the visitors' satisfaction level. In the last three decades, as forecasted by Toffler (1980), the role of the consumer has evolved from "consumer" to "prosumer"¹. Consumers have become more demanding, more informed and, at the same time, more willing to supply information in exchange for more personalized products which better satisfy their desires, needs and expectations (Dominici, 2008; Dominici & Palumbo, 2013c). If the museum gives "voice" to the visitors and realizes their desires, it will probably gain a strong competitive advantage. Several studies have focused on the identification and interpretation of the most empirical elements considered as relevant by visitors (Rowley, 1999; Goulding, 2000; Gilmore & Rentschler, 2002; Phaswana Mafuya & Haydam, 2005; Saleh, 2005; Hume et al., 2007; Burton et al., 2009; Chan & Yeoh, 2010; Lau & Badaruddin, 2010; Kuo et al. 2011).

Among these studies, Kuo et al. (2011) focused on tourists' interpretation experiences of a museum applying the Kano's model and the Importance-Performance Analysis (IPA). The authors conducted two empirical studies in Mainland China and Taiwan in order to identify service elements considered as most important by visitors. Their findings suggest that according to tourists, the most important service elements of a museum experience are: 'the visit route of narration facilities is smooth', 'interpreters can provide service when tourists need', 'interpreters can offer services in proper time' and 'the contents are interpreted by interpreters can arouse tourists'. Burton et al. (2009), identified the attributes of choice in repeat museum visitation conducting a research in the two major museums of Australia. Their findings suggest that there are a number of ways that museums can combine and re-combine their offerings in ways that are attractive to visitors and which involve little or no additional resources.

However, involving the visitors in the design of the offer is not sufficient to maintain a competitive advantage over time. In order to be competitive, museums should also *stimulate the desire to know* (Donald, 1991, p. 377), offering to the visitor an "info-cultural-tainment" experience, characterized by the interaction among leisure, entertainment, culture, education and socialization (Rojas & Camarero, 2006). Towards this goal technology can play an important role. Interactive technology is an important tool able to reinforce and to integrate both museum marketing and communication strategies. Today, in the digital era, several museums are investing resources on digitalizing their collections and increasing their presence on the Web. The digital business represents the more recent of the business contexts and the one with the greater need for a differentiation of the offer (Dominici, 2009). Through the power of technology, the museum can reach a great number of virtual visitors, that could potentially become real visitors (Bonacasa, 2011).

Interactive technologies can enhance the current and potential visitors' experience, allowing them to become more involved in their tour along the museum galleries (Vom et al., 2005; Hume & Mills, 2011). As Hume noted: "service design and technology integration will play an important role in the delivery of a value experience" (Hume, 2011, p. 89).

A considerable amount of research has been done with regard to the role of interactive technology in museum management (Marty, 1999; Lagrosen, 2003; Knell, 2003; Nickerson, 2004; Vom et al., 2005; Lachaud & Passebois, 2008; Bonacasa, 2011; Hume & Mills, 2011; Hogsden & Poulter, 2012). Nevertheless, there has been little research conducted specifically on the role of *mobile applications for museums*. This is probably due to the fact that the wide diffusion of this new technology is very recent.

As Hume and Mills (2011) pointed out, only few kinds of interactive technologies have currently been adopted in museums, such as inter-

net, handhelds and touch screens (Kotler, 2003; Hawkey, 2004; Yeh & Lin, 2005). However, they are optimistic about the future:

Many new and emergent technologies including social media, online storage and e-commerce are available and will advance interactive and online services in the future (Hume & Mills, 2011, p. 286).

According to the literature and to the expert forecasts, mobile application technology is one of the main successful emergent technology and its managerial implications could be considered a new fascinating field of study; nonetheless the marketing implications of the implementation of these technologies to museums has been scarcely covered in the literature.

With this research we aim to fill this literature gap and to stimulate some reflections about the potentiality of this new technology for museums. The literature review has underlined the importance of the experience and personalization of cultural products.

Our research hypothesis is based on the consideration that mobile app technology, thanks to its diffusion, flexibility and accessibility, is a powerful tool that allows museums to create innovative and successful offers. The literature on this topic underlines how involving users in the design phase is the best way for design an effective offer that may be able to meet visitors' expectations and achieve satisfaction. We adopt the Kano Model in order to discover explicit and latent needs and project a mobile app for museums according to the desires of its potential users.

RESEARCH METHODOLOGY

In this study we apply the model proposed in 1984 by Noriaki Kano. Kano provides a useful and practical approach for categorizing product or service attributes according to the customers' perception and the impact on customer satisfaction.

The main advantages of the Kano Model compared to other models of customer satisfaction widely used in the literature - such as SERVQUAL (Parasuraman et al., 1988), SERVPERF (Cronin & Taylor, 1992), Critical Incident Approach (Hayes, 2008; Dominici & Guzzo, 2010), Disconfirmation Model - are that (Dominici & Palumbo, 2013a; 2013b):

- It can be applied both before (to design the customer's ideal product or service) and after (to measure customer satisfaction) the consumer experience. The Kano Model is a useful tool for identifying customer needs and transforming these into design requirements, engineering specifications, and ultimately production details (Chaudha et al., 2011).
- It does not presuppose a linear relationship between product/service performance and customer satisfaction. Kano noticed that customer requirements are not equivalent: some requirements, are capable of generating more satisfaction than others. Moreover, customer satisfaction is not always proportional to the functionality of the product or service, implying that higher quality does not necessarily lead to higher satisfaction.
- Is useful and simple, being able to efficiently and effectively provide relevant strategic and operative information.

Kano classified product and service attributes into three primary categories, based on their impact on customer satisfaction:

- **Must-Be (dissatisfiers or basic factors):** These requirements are considered by the customer as basic factors, and their presence thus will not increase the satisfaction level significantly. Their absence, however, will cause extreme dissatisfaction.

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- **One-Dimensional (performance factors):** These factors cause satisfaction when their performance is high, and dissatisfaction when their performance is low. These attributes are linear and symmetric, because they are typically connected to customer's explicit needs and desires. The company should try to be competitive here.
- **Attractive (satisfiers or excitement factors):** These requirements cause customer satisfaction if delivered, while they do not cause dissatisfaction if they are not delivered. Their presence strengthens the competitive advantage of the firm because such factors increase the value of the product or service as perceived by the customer. The company can use these factors to distinguish itself from its competitors in a positive way.

In addition, Kano identified two other categories of requirements which refer to the characteristics of the product or service that customers perceive as indifferent, or even adverse, to their needs:

- **Indifferent:** The customer does not care about whether this feature is present or not.
- **Reverse:** The customer does not desire this kind of product requirement, and its presence causes a great level of dissatisfaction; its absence determines satisfaction.

Each category of requirement (must-be, one-dimensional, attractive, indifferent, and reverse) has a different impact on the level of customer satisfaction. The classification of requirements proposed by the Kano model, based on their impact on customer satisfaction, allows us to identify in a specific way how the quality of the product or service might be improved.

Implementing the Kano Model

The execution of measurement in the Kano Model follows four steps:

1. Identification of the customer's needs.
2. Development of the Kano questionnaire.
3. Administration of interviews.
4. Interpretation and evaluation of the results.

Step 1

The identification of customer's needs can be implemented via individual interviews or through focus-group interviews with members who already know the product or service. Typically, individual interviews are helpful in identifying one-dimensional quality attributes, while focus groups help identify attractive elements. Shiba et al. (1993) formulated five questions which are useful in this phase for investigating customers' needs:

- What associations does the customer make when using product or service X?
- Which problems, defects, or complaints does the customer associate with the use of product or service X?
- Which criteria does the customer take into consideration when buying product or service X?
- Which new features or services would better meet the expectations of the customer?
- What would the customer change in product or service X?

Step 2

Once the customers' needs and the ideal features of the product or service have been identified, it is possible to prepare the questionnaire. The Kano questionnaire is characterized by pairs of questions for each customer requirement:

- How would you feel if requirement X were present in the product or service? (Functional form of the question.)
- How would you feel if requirement X were not present in the product/service? (Dysfunctional form of the question.)

For each functional and dysfunctional question, the customer can select one of five alternative answers as expressions of different degrees of perception:

1. I like it that way.
2. It must be that way.
3. I'm neutral.
4. I can live with it that way.
5. I dislike it that way.

For each questionnaire, the answers to each functional-dysfunctional question pair are cross-referenced using a matrix formulated by Kano (Figure 1), and the perceptions are thus evaluated into quality dimensions (M: must-be requirement;

I: indifferent; R: reverse; O: one-dimensional; A: attractive; Q: questionable² requirements). To each pair of customer perceptions, the matrix associates one requirement category. Thus, if the customer replies “I’m neutral” to the functional question and “I dislike it this way” to the dysfunctional question, the requirement, according to the Kano matrix, is a “must-be” requirement.

Step 3

In order to administrate Kano questionnaires, it is necessary to identify the sample to interview and the mode of administration (online, paper, or orally).

Step 4

Finally, having administered the questionnaires and collected the data, it is possible to proceed to the interpretation and evaluation stage.

Figure 1. Kano evaluation matrix (adapted from Kano et al., 1984)

		Dysfunctional question: How do you feel if the requirement Y is not present?				
		<i>I like it that way</i>	<i>It must-be that way</i>	<i>I'm neutral</i>	<i>I can live with it that way</i>	<i>I dislike in that way</i>
Functional Question: How do you feel if the requirement Y is present?	<i>I like it that way</i>	Q	A	A	A	O
	<i>It must-be that way</i>	R	I	I	I	M
	<i>I'm neutral</i>	R	I	I	I	M
	<i>I can live with it that way</i>	R	I	I	I	M
	<i>I dislike in that way</i>	R	R	R	R	Q
RESULTS						
M = must-be requirement			I = indifferent requirement			
O = one dimensional requirement			R = reverse requirement			
A = attractive requirement			Q = questionable requirement			

Interpretation and Evaluation

The last phase in the development of the Kano Model is the interpretation and evaluation of the results. There are several methods for doing this (Matzler & Hinterhuner, 1998):

- **Evaluation by Frequency:** Starting from the results obtained through functional-dysfunctional matrix, each requirement can be definitively classified as belonging to one of the five categories on the basis of the highest frequency of responses.
- **Evaluation by the M>O>A>I Rule:** Where it is not possible to identify a requirement as belonging to a precise category, but it is only possible to determine its generic impact on customer satisfaction, a hierarchical rule of quality-category importance can be used to design a product or service. The most important requirements that cannot be lacking in a product or service are the must-be requirements, then the one-dimensional ones, then the attractive ones, and least importantly, the indifferent requirements.
- **Customer Satisfaction Index:** This method was developed by Berger et al. in 1993. The customer satisfaction coefficient indicates whether satisfaction can be improved by meeting a product requirement, or if fulfilling this product requirement simply prevents the customer from being dissatisfied (Berger et al., 1993). To estimate the average impact on customer satisfaction, it is necessary to add up the attractive and one-dimensional values and to divide them by the total number of attractive, one-dimensional, must-be, and indifferent responses. For the calculation of the average impact on dissatisfaction, add the must-be and one-dimensional columns and divide by the same normalizing factor. The customer satisfaction index has a value between 0

and 1, such that values close to 1 indicate great satisfaction, while values close to 0 mean low satisfaction. The customer dissatisfaction index takes values between -1 and 0: values close to -1 indicate great dissatisfaction, while values close to 0 indicate low dissatisfaction.

Customer Satisfaction Index (CS)

$$(CS) = \frac{A + O}{M + O + A + I}$$

Customer Dissatisfaction Index (CD)

$$(CD) = \frac{M + O}{M + O + A + I} \cdot (-1)$$

Having recognized the typology of expected requirements for the product or service, the company can obtain detailed information about the best way to model its offer in order to maximize customer satisfaction. In detail, the strategic implications of the Kano Model are: fulfil all must-be requirements, be competitive regarding one-dimensional requirements, stand out with regard to attractive requirements, don't spend time or money developing a requirement that is perceived as indifferent, and avoid reverse requirements.

THE APPLICATION OF THE KANO MODEL TO SICILIAN MUSEUMS

We apply the Kano Model to identify express and latent needs of cultural tourists and to design a mobile app for museum according to the ideal characteristics that better satisfy their expectations. Our research is related to the segment of visitors of Sicilian museums located in the provinces of Palermo and Trapani.

We followed the four steps proposed by Noriaki Kano's model.

Identification of the Needs and Expectations of Museums Visitors

Prior to distributing the questionnaires to the cultural tourists, we held three focus-group interviews (groups of seven people) with people who had experience with mobile apps for museums. The respondents started the focus group by answering the questions formulated by Shiba et al. (1993), according to their previous experiences.

Using their answers and the debate that followed, we have been able to identify twenty expected features that we have grouped into four main areas, as shown in Table 1.

Development of the Kano Questionnaire

Following the identification of the requirements, we prepared the questionnaire in order to discover the nature of these requirements. Our questionnaire consisted of two parts:

- Personal information (gender, age, qualification, profession, place of origin), mobile devices ownership and experience.
- 40 questions in functional and dysfunctional form investigating the nature of the 20 requirements identified in step 1. The questions were grouped in classes to facilitate the overall comprehension of the survey.

Administration of the Questionnaires and Sample Characteristics

We administered 300 questionnaires to cultural tourists of Sicilian museums. The questionnaires were administered in printed form and were available in the museums receptions over a period of 3 months between October and December 2012. After a screening of the questionnaires collected, 287 (out of 300) questionnaires were considered valid (96%), of which 198 (69%) in the province of Palermo and 89 (31%) questionnaires in the province of Trapani.

Table 1. The requirements of a mobile app for museums identified by users

Museum	<ul style="list-style-type: none"> • How to get to the museum: details about subway, bus, train, car, taxi • Description of the museum structure • Time of opening and closing • Tickets booking and/or purchasing • Additional services (café, restaurant, museum shop) information • Contacts • Timetable of planned exhibitions, events and tours. • Real-time news on new products and events
Artworks	<ul style="list-style-type: none"> • Museum artworks photo-gallery • Audio-guides with detailed information about each artwork • Explanatory files of the artworks • 3D virtual tour • Virtual tour bookmarks
Map	<ul style="list-style-type: none"> • Museum map • Suggestions for guided tours
Accessibility and Usability of the App	<ul style="list-style-type: none"> • Multilingual option • Available off-line • Friendly and efficient user interface • Free download • Accessible on any device (Mac, Android, and so on)

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The total sample consisted of people who were visitors of the selected Sicilian museums. The sample of respondents consisted of 205 (71%) Italian guests (52 Sicilians and 153 non-Sicilian Italians) and by 82 (29%) foreigners.

As for sex distribution, 41% of the respondents were male, and 59% female. The average age of respondents was 50 years old. About the level of education in our sample 40% of respondents declared they had a bachelor's degree, 36% had a high-school diploma, 17% had a master's degree, and 3% had a Ph.D., while 4% had a middle-school diploma. With regard to professions, 40% of the sample were employees, 17% were retirees, 28% were self-employed, 5% were students, and 10% were unemployed. 63% of the respondents owned mobile devices (smart phone and/or tablet/hybrid devices, etc.) and the 35% of them has downloaded and experienced at least one museum app.

RESULTS AND DISCUSSION

After the data collection, we proceeded to the classification of the nature of each requirement. The output of this classification is particularly relevant for museum managers, because it may allow them to establish a hierarchical order of requirements which can be used to design the mobile app ac-

ording to the visitors' desires, thus helping to achieve higher levels of customer satisfaction.

We calculated the total number of responses for each requirement, using the Kano evaluation matrix (Figure 1) to identify the categories according to the questionnaire responses.

Evaluation by Frequency

We used the *evaluation by frequency* method to evaluate the results. In this way, we determined the category of each requirement on the basis of the maximum frequency obtained, as shown in Table 2. Questionable results (Q) have very low frequencies, thus the questionnaire had a high level of reliability.

According to these results, we can provide some practical hints about how to design a mobile app for museum.

First of all there are 6 requirements which are considered *must-be* by respondents, hence their presence is mandatory. A museum smart app should always fulfill details about how to get to the museum (subway, bus, train, car, taxi), but also contacts of the museum (phone number, e-mail). Furthermore, a museum app should include a photo-gallery of the main important artworks of the museum (in this way the visitor can view in advance if the museum arouses his interest or

Table 2. Classification of requirements in accordance with evaluation by frequency

	O	M	A	I	R	Q	Category
Museum							
1. How to get to the museum	80	106	13	54	33	1	<i>Must-be</i>
2. Description of the museum structure	45	33	139	59	11	-	<i>Attractive</i>
3. Time of opening and closing	124	67	73	19	3	1	<i>One dimensional</i>
4. Tickets booking and/or purchasing	152	63	24	23	25	-	<i>One dimensional</i>
5. Additional services information	69	37	136	43	2	-	<i>Attractive</i>
6. Contacts	81	143	13	28	21	1	<i>Must-be</i>
7. Timetable of planned exhibitions, events and tours	136	23	103	14	11	-	<i>One dimensional</i>
8. Real-time news	23	12	18	178	54	2	<i>Indifferent</i>

continued on following page

Table 2. Continued

	O	M	A	I	R	Q	Category
Artworks							
9. Museum artworks photo-gallery	43	121	19	89	15	-	<i>Must-be</i>
10. Audio-guides with detailed information about each artwork	115	67	84	18	3	-	<i>One dimensional</i>
11. Explanatory files of the artworks	23	16	21	189	58	-	<i>Indifferent</i>
12. 3D virtual tour	23	12	83	52	116	1	<i>Reverse</i>
13. Virtual tour bookmarks	17	5	19	156	88	2	<i>Indifferent</i>
Map							
14. Museum map	46	148	26	43	24	-	<i>Must-be</i>
15. Suggestions for guided tours	37	20	164	43	23	-	<i>Attractive</i>
Accessibility and usability of the app							
16. Multilingual option	73	157	15	34	7	1	<i>Must-be</i>
17. Available off-line	143	48	43	39	14	-	<i>One dimensional</i>
18. Friendly and efficient user interface	48	156	19	62	2	-	<i>Must-be</i>
19. Free download	101	5	80	76	23	2	<i>Attractive</i>
20. Accessible on any device	57	27	178	22	3	-	<i>Attractive</i>

not) and a map of the museum, with different itineraries and the location of the main artworks. The last two must-be requirements are related to the accessibility and usability of the app: an app for museum should have the multilingual option in order to allow to different tourists to use it (usually museums have a high proportion of foreign visitors) and it also should have a friendly and efficient user interface, in order to spread the app also among less experienced users. All these requirements are mandatory, so their presence is strongly recommended, otherwise they will cause high dissatisfaction levels. However their presence does not increase the level of customer satisfaction because users take them for granted.

In the study we found 6 *one-dimensional* requirements. The presence of these requirements increases proportionally the level of customer satisfaction, hence the museum app should hold them. The first two of them are the time of opening and closing and the possibility to book and/or purchase tickets online. They are very important requirements for people who want to plan in detail

their visit to the museum. Another important requirement is the presence of an updated timetable of planned exhibitions, events and tours. This requirement allows visitors to carefully choose the day they prefer to visit the museum. One requirement that is able to increase the pleasure of the visit at the museum is the possibility to download audio-guides with detailed information about each artwork: visitors prefer to hear audio-guides in their own devices rather than renting devices used by many other people. The last two one-dimensional requirements are related to the features of accessibility and usability of the smart app. The first is the availability off-line of the app: this feature guarantee the possibility to utilize the app even if the museum does not offer a free Wi-Fi connection. This requirement is very important for foreign tourists, which usually do not have a subscription to the Italian telephone/internet companies. The last one-dimensional requirement is the free download: people are not willing to pay to buy a museum app. On the other hand, museum represents a special form

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of non-profit organizations in the service sector. Hence, the museum can recover the costs of the app increasing the price of tickets, but not through the selling of the app.

The results show that visitors have considered 4 requirements as *attractive*. Museums are free to decide whether to include these requirements in their apps, as their absence does not decrease the level of customer satisfaction, their presence would strongly increase it. This kind of requirements are useful to differentiate a museum app offer from that of competitors and to increase the perceived value of the app. The first attractive requirement is the description of the museum structure (on the building, on the architect who designed it, on the past history, and so on). Another attractive requirement is the list of the additional services offered in the museums - such as the presence of a café, restaurant, museum gift shop, a place for smokers, toilets – and their localization in the map.

One additional attractive requirement related to the visit is the suggestion for guided tours. The app should fulfill information about the guides, their remuneration, their specialization, their availability and the possibility to customize the visit to the museum according to the visitors' main interests. The last attractive requirement is the accessibility from any kind of devices (Mac, Android, and so on) in order to allow the use of the app by the majority of users.

Museum should not invest in fulfilling *indifferent* requirements because they have not any impact on customer satisfaction. We found 3 indifferent requirements. The first of them is the presence of real time news on new products, such as ongoing and planned exhibitions, announcements, events, and artworks temporarily not visible to the public. Visitors prefer to have only the complete timetable with scheduled events. The second indifferent requirement is the presence of explanatory files of the artworks which deepens the contents of audio-guides. Visitors believe that these additional contents may be excessive and may slow their visit too much. The last indifferent requirement

is the possibility to put a bookmark on interesting artworks during the virtual tour. Visitors are not attracted by this requirement, maybe because it seems to be too difficult to use, or because they do not need to use these bookmarks to remember interesting things to visit.

The only *reverse* requirement is the opportunity to take a virtual tour of the museum from the device. Even if this requirement could give the opportunity to everyone to visit the museum from their homes, the majority of respondents did not like this requisite for two main reasons:

1. The virtual tour could be too heavy and slow down the application.
2. Visitors think that the virtual tour might ruin the excitement of the real visit.

Respondents are adverse to the presence of this requirement, hence the museum should not include it (also because its cost is very high).

M>O>A>I Rule

The M>O>A>I rule can be conceived as a useful guideline for efficiently directing investments in order to design the features of a museum smart app.

By analyzing the results of the evaluation by frequency and applying the hierarchical rule of M>O>A>I, some practical indications emerge. If managers wish to design a museum app according to visitors' needs, they will first of all ensure the presence of the must-be requirements: details on how to get to the museum; contacts; museum artworks photo-gallery; museum map; multilingual option; friendly and efficient user interface.

Once that must-be requirements have been fulfilled, museum managers should then invest their financial resources to fulfill the one-dimensional requirements previously indicated: time of opening and closing; tickets booking and/or purchasing; timetable of planned exhibitions, events and tours; audio-guides with detailed information about each artwork; available off-line; free download.

The presence of these features, together with the must-be requirements, is a necessary condition to ensure the sufficient level of customer satisfaction.

If additional resources are available, the museum offer could be enriched by the several attractive requirements we identified: description of the museum structure; additional services information (café, restaurant, museum shop); suggestions for guided tours; accessibility with any device (Mac, Android, Windows, etc).

Museum managers should avoid investing resources in the indifferent requirements—namely real-time news on new products; explanatory files of the artworks; virtual tour bookmarks — and must definitely avoid to waste resources to implement the reverse requirement: the 3D virtual tour.

Customer Satisfaction and Dissatisfaction Indexes

To summarize and verify the findings of the application of the Kano Model, we calculated the customer satisfaction index and the customer dissatisfaction index for each requirement, in order to confirm whether or not they coincide with the results obtained through the Kano Model (Table 3).

In order to be coherent with the results of Kano Model, the CS and CD indexes should comply with the values synthesized by the data shown in Table 4.

The results of the *customer satisfaction index* indicate that:

- Attractive and one-dimensional requirements have the greatest impact on customer satisfaction, as their value in every cases is more than 0.50 and closer to 1: timetable with planned events (+0.87), accessibility on any device (+0.83), suggestions for guided tours (+0.76), additional services information (+0.72), and so on. These results are in line with the results of the Kano Model. According to that model, in fact, the presence of attractive and one-dimensional

Table 3. Customer satisfaction and dissatisfaction indexes for each requirement

	CS	CD
1. How to get to the museum	+0.37	-0.74
2. Description of the museum structure	+0.67	-0.28
3. Time of opening and closing	+0.70	-0.67
4. Tickets booking and/or purchasing	+0.67	-0.82
5. Additional services information	+0.72	-0.37
6. Contacts	+0.35	-0.85
7. Timetable of planned exhibitions, events and tours.	+0.87	-0.58
8. Real-time news on new products	+0.18	-0.15
9. Museum artworks photo-gallery	+0.22	-0.60
10. Audio-guides with detailed information about each artwork	+0.70	-0.64
11. Explanatory files of the artworks	+0.18	-0.16
12. 3D virtual tour *	-	-
13. Virtual tour bookmarks	+0.18	-0.11
14. Museum map	+0.27	-0.74
15. Suggestions for guided tours	+0.76	-0.22
16. Multilingual option	+0.32	-0.82
17. Available off-line	+0.68	-0.70
18. Friendly and efficient user interface	+0.24	-0.72
19. Free download	+0.69	-0.40
20. Accessible on any device	+0.83	-0.30

* We omitted the requirement “3D virtual tour” because reverse requirements are not included in the calculation of Customer Satisfaction and Customer Dissatisfaction indexes.

Table 4. Coherence between Kano Model and CS/CD indexes

	CS	CD
One-dimensional	High (> 10.50)	High (> 10.50)
Must-be	Low (< 10.50)	High (> 10.50)
Attractive	High (> 10.50)	Low (< 10.50)
Indifferent	Very low (< 10.20)	Very low (< 10.20)

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requirements have the highest impact on the level of customer satisfaction.

- Must-be and indifferent requirements have low levels of customer satisfaction index. More in detail, must-be requirements have level of CS index lower than 0.50 (i.e. museum artworks photo-gallery (+0.23), friendly and efficient user interface (+0.24), how to get to the museum (+0.37)), while indifferent requirements have level of CS index lower than 0.20 (Explanatory files of the artworks (+0.18), real-time news (+0.18), virtual tour bookmarks (+0.18)). These results comply with Kano Model's results: in fact, the presence of indifferent and must-be requirements do not increase satisfaction.

With regard to the *customer dissatisfaction index*, we can observe that:

- The requirements whose absence cause the greatest level of dissatisfaction are those rated as must-be, such as contacts (-0.85), multilingual option (-0.82)), museum map (-0.74) or one-dimensional (tickets booking and/or purchasing (-0.82)). Must-be requirements cause a high degree of dissatisfaction when they are not provided, because customers take their presence for granted. One-dimensional requirements are proportionally correlated with customer satisfaction, hence their absence causes dissatisfaction. These results confirm the Kano Model findings.
- The requirements that cause the lowest degrees of dissatisfaction (lower than -0.20) when not provided are indifferent (virtual tour bookmarks (-0.11), real-time news (-0.15), explanatory files of the artworks (-0.16)). However, also attractive requirements have low levels of CD index (suggestions for guided tours (-0.22), descrip-

tion of the museum (-0.28), accessible on any device (-0.30), and so on). In both cases (indifferent and attractive requirements), the absence of these requirements does not cause excessive dissatisfaction, according to the Kano model. Hence, also this time the results of CD indexes confirm Kano model's findings.

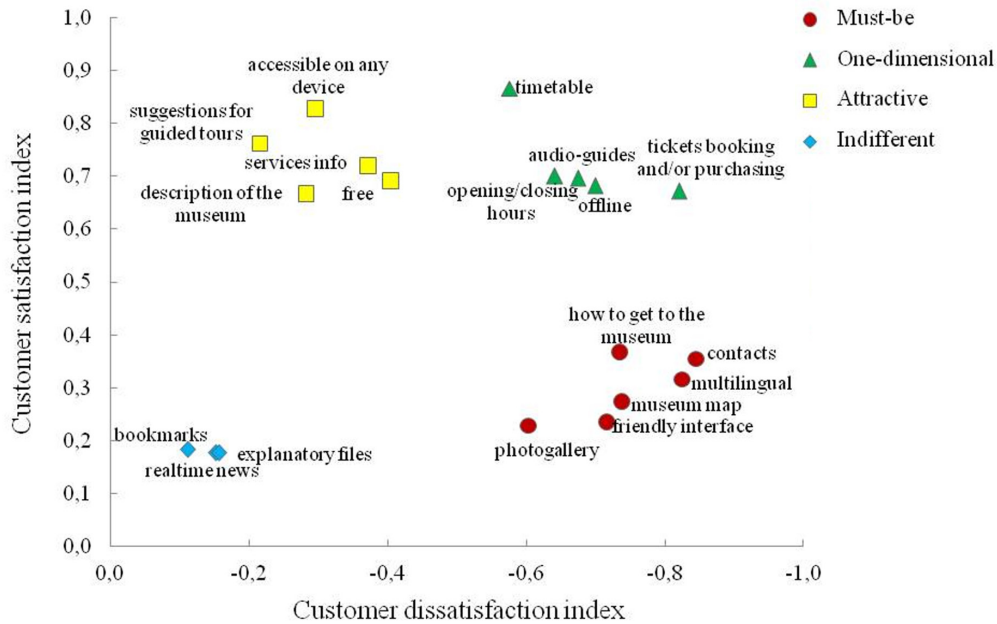
Figure 2 graphically represents the results of the customer satisfaction and customer dissatisfaction indexes for each requirement. In the comments and in Figure 2 we excluded the 3D virtual tour requirement, as it was not included in the calculation of the CS and CD indexes.

The obtained customer satisfaction and dissatisfaction indexes confirm the results of the Kano Model. These indexes also supply a numerical guideline for museum app developers who can get from these indexes a better understanding on how to design an application oriented to achieve the customer satisfaction and avoid the customer dissatisfaction.

CONCLUSION, LIMITATIONS OF THE STUDY, AND FURTHER RESEARCH

Our results show that museum visitors show great interest in the development of a mobile app for augmenting their visiting experience in the museum. In fact, more than half of the respondents owns a mobile device. The high diffusion of this devices is actually the reason why of this study since this technology represents a huge market potential and a lack of offer that museums could fill in order to be innovative and competitive. Through interviews and focus group we have been able to point out twenty explicit and latent needs of museum visitors. Moreover we explored the nature of these features by applying the Kano model. We concluded this study providing detailed practical suggestions about the design of a

Figure 2. Customer satisfaction/dissatisfaction matrix



mobile museum app. The M>O>A>I rule gives an useful criterion to design in a state of scarcity of financial resources.

Although this is an empirical study the results can be relevant also for researchers in touristic marketing field.

The implication for Sicilian managers and policymakers emerging from this study is that in spite of the fact that museums represent one of the main attractions of the Sicilian touristic offer, there is a strong mismatch between visitors' expectations and Sicilian cultural offer that affect customer satisfaction.

Even if we believe our findings contribute to discover how to fill this discrepancy, we are aware of the limitations of this research.

The main limit is that our analysis has been conducted in an underdeveloped region (Sicily is among the poorest and less developed regions in EU), where the museums offer is retarded and undervalued. This may imply that the visitors interviewed through the questionnaires in the museums had a low level of expectations, or were not used to this kind of software (in the case of

Sicilian visitors). However, since our aim was to find the prerequisites to design a mobile app for museums our results may be of some interest also for museums managers and software developers located in more advanced regions.

The second limitation of this study is that our sample was limited in space and time. If data could be obtained from a wider range of individuals and places, in a longer period of time, the results would have been more significant.

We aim to develop future research by analyzing museums that already implemented mobile apps, in order to point out how and if these apps create greater levels of visitors' satisfaction.

NOTE

To conform with Italian regulations on academic publishing, even though the article is the joint work of all authors, we attribute the contribution of each author as follows: sections 1 (Introduction) and 5 (Conclusions, limitations of the study and further research) can be credited to Gandolfo

Dominici, sections 3 (Research methodology) and 4 (The application of the Kano Model to Sicilian museums) to Federica Palumbo and section 2 (Theoretical framework) to Gianpaolo Basile.

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KEY TERMS AND DEFINITIONS

Cultural Tourism: Is the movement of persons to cultural attractions away from their normal place of residence, with the intention to gather new information and experiences to satisfy their cultural needs.

Customer Satisfaction: Is a measure of the degree to which a product or service meets the customer's expectations.

Kano Model: Is a useful and practical approach for identifying customer needs and transforming these into design requirements, engineering specifications, and ultimately production details.

Mobile App: Is a software application designed to run on smartphones, tablet computers and other mobile devices.

Mobile Guide for Museum: Mobile multimedia handheld guides applications that can be considered as an interpretation medium in the museum environment.

Museum Marketing: Is a visitors-focus approach oriented to attract wider audiences and meet their satisfaction.

Technologies for Museum: The advent of new technologies presents an opportunity to develop new ways of communication which allow the visitor to explore the richness and diversity of collections at their own pace and to their own requirements.

ENDNOTES

- ¹ “Professional consumer” or “producer consumer.”
- ² Questionable requirements (Q) are those for which it is unclear how customers consider them. This can happen because of ambivalent responses due to a misunderstanding of the question, or erroneously filling-out the questionnaire.