

Smart Museums. Definition and presentation of a smart management model for museums

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ABSTRACT

The appearance of smart models for tourism management has contributed towards a more efficient administration of tourism products. However, museums are institutions that have not been explored from this angle and possess great potential for their application. This research aims to put forward a proposal of a Smart Model for museum management and define the main characteristics of a Smart Museum. Although plenty of museums are adapting their facilities and experiences through a digital transformation, there are scarcely any that adopt the Smart designation for their description, nor base their operation on existing literature on smart management. A focus group with experts in museology, smart management and heritage innovation allowed to identify the main components for smart management to take place in a museum setting. Furthermore, the data were coded, organised and analysed thematically focusing on the principal elements discussed in the group meeting. The absence of a clear definition for a smart museum was detected. Nonetheless, the contributions from the focus group, together with the findings from the literature review on existing smart models provided the necessary concepts to establish a definition and build an application model adapted to museums.

1. INTRODUCTION

1.1. Smart management models

The appearance of the smart term and the rapid expansion of Information and Communication Technologies (ICTs) have been instigators of significant change in all areas of modern society (Gretzel et al., 2016). The popularisation of new concepts in tourism research such as Smart City and Smart Destination, as well as Smart Tourism, have opened new lines of development to improve the tourist experience (López de Ávila & García Sánchez, 2013). On the other hand, culture is an essential resource for the evolution of tourist activity in a destination, and museums are a key organ for the development of cultural tourism (UNESCO, 1992; Esteller, 2005). Museums are very relevant spaces in attracting tourists, as well as in the conservation and protection of the tourism heritage

(Lopez-Barbosa, 2001; Esteller, 2005; Sagüés, 2008). For these reasons they become potential scenarios for the integration of smart management, in order to optimise their operation and maximise their tourist use.

Smart management models are introduced through the appearance of Smart Cities. In this case, smart is defined as an evolutionary process from a traditional model to an advanced version of itself (Gretzel et al., 2015). As Nam and Pardo (2011) point out, Smart Cities originate as a strategy to satisfy the needs derived from the great changes in demographic concentration and population growth in urban areas. There is a great variety of definitions of smart city, since it is a constantly evolving term. Of the multiple contributions to define the Smart City, one of the most considered is undoubtedly that of Giffinger et al. (2007). As Table 1 shows, their definition of a Smart City emphasises not only in a well-performed competitiveness in the main axes of the smart application, namely economy, people, governance, mobility, environment and living, but also the inclusiveness and participation of its citizens.

SMART ECONOMY (Competitiveness)	SMART GOVERNANCE (Participation)	SMART ENVIRONMENT (Natural Resources)
<ul style="list-style-type: none"> - Innovation and entrepreneurship - Economic image and trademarks - Productivity - Labour market flexibility - Globalisation - Ability to transform 	<ul style="list-style-type: none"> - Participation in decision-making - Public and social services - Transparency in governance - Political strategies and perspectives 	<ul style="list-style-type: none"> - Attractiveness of the natural environment - Pollution - Environmental protection - Sustainable resource management
SMART PEOPLE (Social and human capital)	SMART MOBILITY (Transport and ICT)	SMART LIVING (Quality of life)
<ul style="list-style-type: none"> - Qualification level - Continuous learning - Social and ethnic plurality - Flexibility - Creativity - Cosmopolitanism and open-mindedness - Participation in public life 	<ul style="list-style-type: none"> - Local, national and international accessibility - ICTs infrastructures: ability to use - Sustainable, innovative and safe transport system 	<ul style="list-style-type: none"> - Cultural facilities - Health conditions - Individual security - Housing quality - Educational facilities - Tourist attractivity - Social cohesion

Table 1. Dimensions of the smart city. Source: Own elaboration from Giffinger et al. (2007).

The concept of the smart city can be extrapolated to tourism through smart tourist experiences and the smart destination. In this sense, smart tourism is a social phenomenon resulting from the fusion of ICTs and tourist experiences, based on the participation and interaction of tourists with the destination, their communication and connectivity through ICTs (Gretzel et al., 2015). Thus, the product of smart tourism is the smart destination, which makes use of innovation and technology to implement strategies that allow the destination to increase its competitiveness and reposition itself as a tourist destination (López de Ávila & García Sánchez, 2013), promoting open innovation (Buhalis, 2015) and

prioritising above all the interaction of the tourist with the urban environment. SEGITTUR (2015) put forward a tourism development model setting the concepts of governance, innovation, technology, sustainability and accessibility as the main dimensions and strategic axes of Smart Tourism Destinations.

1.2. Museum functions and application of smart tools

Through the years, museums have undergone a gradual but deliberate transformation from their appearance as collections of artefacts (Simmons, 2016) to becoming important institutions that house culture and entertainment, and representatives of contemporary civilization (van Aalst & Boogaarts, 2002). Socio-cultural characteristics that influence society fluctuate and change over time, so the museum and museology are no longer considered static and uniform organisms and a certain adaptability and versatility is required in the museum to adapt to the new needs of users (Hernández Hernández, 2015) Thanks to the evolution of museology, we can access new ways of knowing the society in which we live and in which we are invited to actively participate (Hernández Hernández, 2015).

Authors such as Reca (2004) establish that in traditional museology, or former museology, the exhibited object is the starting point, repository of messages, since "The object speaks for itself". The evolution of this traditional concept has taken various terms, either as new museology, didactic museology, or modern museology. What these terms have in common is that in the transformation of the museum, a relationship between the subject and the object is established, which reinforces the active construction of ideas and messages, based on the participation and interaction of the visitor with the context and accrediting the object as a mediator accompanied by a didactic (Reca, 2004; Llonch & Santacana, 2011).

According to Llonch and Santacana (2011), a didactic approach to museum exhibitions can be defined as the discipline whose main objective is the conception, design and execution of exhibitions, attending primarily to didactic principles. This concept emphasises communicating, displaying and making certain objects of study intelligible while adapting it to the visitors that are going to experience it. Hence, this resource allows the possibility of establishing a dialogue between the exhibition and the visitor, facilitating the inclusion of people unfamiliar with the museum's theme (Llonch & Santacana, 2011).

In this way, it is specified that the functions of the modern museum are not only restricted to the exhibition of objects, but that the expectation and need to create links, connections, and interactions with the public have been included.

In the same way that smart management systems applied to cities and tourist destinations have evolved and gained relevance, the application of this efficient management in museums as cultural attractions is contemplated. According to the International Council of Museums (ICOM, 2007), a museum can be defined as:

“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” (pp. 2-3).

This definition identifies five main functions of the museum, which are acquisition, conservation, research, communication and exhibition. However, museum management covers many more areas, other functions that can be divided into two blocks: a first one focused on the internal management of the museum and its artefacts (Noble, 1970; Caballero Zoreda, 1988; Lopez-Barbosa, 2001; Sagüés, 2008), and a second one more linked to the interaction of the museum with society (UNESCO, 1992; Llonch & Santacana, 2011), as they are summarised in Table 2.

Conservation		Diffusion	
Function	Description	Function	Description
Acquisition	Registration of collections, legal control of inventories, the reception of objects	Exhibition	Presentation of the museum's content to the public, through the description and interpretation of the objects
Research	Cataloguing and archiving of the collections, preparation of academic publication, production of scientific scripts, advance on conservation and communication techniques	Communication	Transmitting information and making knowledge accessible
Conservation	Guarantee the collections' permanence through the correct guarding and the restoration of items	Education	Communicate, display and adapt the contents of the museum for everyone to understand and retain the knowledge

Table 2. Summary of museum functions. Source: Own elaboration (2022).

In the current context, the application of smart tools in museums is heavily focused on the visitor experience, which would encompass the functions most closely related to content dissemination and visitor interaction with the exhibition. These instruments include audio guides, touchscreen devices, apps, QR codes, Beacons, 3D scans and print, Virtual Reality, and Augmented Reality. Other tools such as Big Data, and Social Networks are also used in areas related to the communication and marketing (Della Corte et al., 2016; Vargas-Sánchez & Saltos, 2019; Kusumastuti & Rouli, 2021), and the current use of IoT is closely linked to conservation and restoration of museum items (Viani et al., 2017; Tse et al., 2020b; Gaiani et al., 2020). In the field of research, the same prioritised approach is taken towards the visitor experience, and the proposals that are presented are based on concrete solutions applied to specific areas of the museum, without making a holistic proposal of a smart system that connects several functional areas of the museum. In the same way, there is no museum that uses the smart designation to describe itself.

1.3. Objectives

The aforementioned factors prompt the main objective of this study, which is to propose a smart management model capable of being integrated into museum functions by collecting qualitative information from existing smart management definitions and models, and analysing the compatibility of the smart principles in museum spaces.

This project is based on the general objective of creating a smart management model for museums. The aim of the model is to be a theoretical guide or basis for the implementation of smart practices in museums, defining the areas of application and the smart principles to be developed. The purpose of this model is to optimise management and promote sustainability in the museum, presented from a holistic and standardised view of smart bases. In order to achieve this purpose, the specific objective of defining a Smart Museum and identifying its principal components is derived.

This definition will be obtained through contextualising the museum space as a scenario for the implementation of the Smart Management framework as seen in Smart Tourism models. For this, it will also be necessary to previously define the museum and its functions, to identify the main management factors in the museum, as well as to investigate technological advances and the use of new ICTs in museum management.

As to identify the components of the Smart Museum, it will be necessary to designate the meaning of the Smart Museum, both in its purpose and in its functional areas, in addition to establishing how Smart Management can be integrated into museum management and defining the limitations and challenges of applying the smart model in museums.

2. METHODOLOGY

Due to the lack of research in this line, this research is categorised as exploratory for its purpose of developing a new management model. Additionally, the methodology of this work is that of a qualitative nature, since the collected information is based on the expert knowledge of research participants and that aims to obtain a holistic knowledge on the proposed study topic, not quantitatively measurable. By using this type of methodology, the aim is to study the subject in a direct and in-depth way, employing unstructured information collection techniques.

For this investigation, the main technique used has been a Focus Group. A Focus Group is a method of qualitative research in the form of open and non-judgmental discussions, on previously agreed upon issues, by a small group selected from a target population to allow free expression of perceptions, opinions, attitudes and behaviour patterns (Morgan, 1996). The dynamic of focus groups engages groups of people to participate in a discussion meeting guided by a moderator in which points of interest are addressed that are located through the debate, leaving full freedom of expression. The process usually makes it easy for participants to provide their opinions and offer new ideas, thus this technique has been ideal for this investigation as it allows to generate new concepts, obtain answers about specific questions and cultivate opinions about the proposed topic (Barbour, 2010).

To obtain the expected results, this technique was applied to a non-probabilistic sample of a population of experts in the field of museums and smart development in tourism, selected through an intentional and subjective sampling according to their relationship with the object of study. The final group size was made up of four expert individuals.

In order to analyse and interpret the data extracted from the focus group, a mixed coding technique has been carried out, of both inductive and deductive types. It has been deductive because, on the one hand, the smart axes presented by SEGITTUR (2019) have been taken as reference, as well as the areas related to museum functions and management presented in Table 2 to identify how the different smart components can be integrated into the management process. From this deductive part also derives the main variable of the study, which was "To find the elements that make up a Smart Museum." On the other hand it has been inductive because an additional analysis has been carried out consisting of identifying emerging topics in the conversation.

The coding technique consisted of transcribing the discussion, identifying the contributions of each participant, as well as the main variable, and then classifying the data into different categories. Six different variables were found in the data analysis to guarantee the classification and synthesis of the information obtained from the results. Half of these were assigned by their relationship to the references previously used in the research and preparation of the focus group, while the other half were the result of emerging topics during the conversation.

The script of the meeting dynamics acted as the required instrument to conduct the research. It was composed of three main blocks that divided the scope of the topic to explore, as well as opening and closing parts.

The first block focused on establishing the basis of Smart Tourism, based on the previous literature review. This topic makes it possible to analyse existing and current Smart Tourism Management Models, as well as to visualise the interaction between each of the axes that compose them. The opinion of different experts on the relationship and relevance between smart axes will be important for the research in order to later adapt them to the museum framework.

The second block focused on the functions of the museum. Based on the previous literary review, the functions of the museum and its role in society are presented. It is relevant to show to the participants in order to analyse the museum's functions and identify its compatibility with the smart axes and strategies to perform its inclusion according to the current management models.

The third and last block, raised the new technologies and innovations currently being used in museums and that contribute to the smart transformation process in museums. It will be essential to define which instruments and strategies are most effective to apply the smart bases and axes in the museum setting.

Subsequently, the questions of the main discussion between participants were asked before concluding the interaction. The number of questions was limited to four and were of an unstructured nature, so that the interviewees could freely deliver their answers and

opinions from a wide variety of dimensions and points of view. The duration of the meeting had a total of 90 minutes.

Finally, the coding and classification of the data was carried out with the HyperRESEARCH program, which is a tool for qualitative analysis.

3. RESULTS

After carrying out the focus group and coding its content, six categories of interest were detected for the results of the study, these being the ones listed in Table 3.

Category	Code
Differences between digital transformation and smartness	DT
Relevant museum functions and management	FM
The congruence of smart axes in museums	SA
The lack of a definition for smart museums	SM
The use of smart tools in museums	ST
Relationship between main stakeholders in museums	SR

Table 3. Category coding. Source: Own elaboration (2022).

The first category linked to the use of smart tools in museums has encompassed the detection of tools applicable to museum activities such as variable pricing depending on visitor demand; heat maps, Google Maps and sensors for visitor localization and flow regulation; apps and tools for personalised experiences; social networks and Google Analytics for communication and visitor behaviour analysis; eye tracking for improved interpretation services; IoT integrated in security; and enhanced digital experiences for additional services.

A second relevant topic allowed to identify the most relevant aspects in the management of a museum with the incorporation of smart tools. When talking about relevant museum functions and management, the emphasised roles were management of visitors flows; analysis and communication with visitors; interactive and personalised experiences; dissemination of content and knowledge.

Moreover, a line of debate was opened on the assimilation of the smart axes in the operation and management of museums, thus being able to identify the congruence of these two concepts, as well as which axes would be more alienated in the current scenario. Participants agreed that technology and innovation are axes in which museums are making more efforts to include in their facilities. Sustainability was mentioned as a transversal aspect applicable to the rest of the axes and management areas of the museum. Accessibility was discussed as a factor of great importance for the development of museums, as an

enabler for opening the doors of the museum, both physically and digitally, and enhancing the availability and visibility of its services and functions.

Despite having established an adequacy between the smart axes and the museum context, the fact of the lack of a definition for smart museums emerged deductively. The word smart is not strictly defined in order to be applied in museums, so the interpretation of its implementation is different in each case and is currently not uniform. Participants stated that, when defining the smart museum, the alignment of all the dimensions of the museum and the efficient and sustainable management should stand out above all, using technology as a means to improve and achieve a greater objective.

Due to the lack of a definition for the smart term applied to museums, participants asserted that they believe the term “digital transformation” is nowadays used more in museums, and not so much the term “smart”, since they are perceived in different ways. The differences in the interpretation of both terms makes smartness be deemed as something unattainable and unrelated to heritage conservation. The division between the world of culture and digital transformation is diminishing more and more, but that it has not been fully accepted yet due to the lack of knowledge of the true objective of the smart concept.

In the same way as the previously mentioned matter, the significance of the museum's relations with stakeholders such as visitors, patrons, administrative entities, and even the relationship between the museum's staff was recognized in a deductive manner. The influence of open access to information and museum processes can be a resource to strengthen the relationship with visitors, along with other cultural institutions, potential patrons and administrative entities. Finally, the profile of the smart museum visitor was also conceptualised, which concluded that the smart museum should be a space open to all audiences, and where accessibility and universality are of key significance.

4. DISCUSSION

After presenting the results obtained from the focus group, analysing them and comparing them together with the data collected in the theoretical framework and the state of the art, it has been possible to deliver an interpretation of all the previous information of interest in the form of conclusions.

The first topic that has been extracted in order to complete the objective of the study is the functional areas of the museum. Although the definition for traditional museums recognizes the acquisition, conservation, research, communication and exhibition as indispensable characteristics to accept a museum as such (ICOM, 2007), after carrying out the investigation, other functions of relevancy for the smart management of museums have been detected. All functions relevant to museum management are presented in the following three areas.

Visitor experience, which encompasses the exhibition, presentation and education of the contents and knowledge offered by the museum. This function is the one that comprises the point of greatest interaction between the museum and the visitor. This function differs from the communicative function since it does not simply entail transmitting information or

messages, but also includes the reception and journey of the visitors throughout their visit to the museum.

Conservation and management, which includes more internal and secluded functions of the museum, those that are not based on user interaction, and that are related to the management operations of both items, as well as visitors and staff. These are research; reception, conservation, and restoration of objects; management, monitoring and analysis of the visitor; and organisational training and coordination of the institution.

And lastly, Marketing and communication, which comprises the functions of promoting, transmitting and communicating to the public the services it offers as well as the relevance and meaning of the collections it houses. On the marketing side, learning about customer needs, social media innovation, innovation in services, and customer involvement are key actions (Della Corte et al., 2016). In communication aspects, not only should it focus on the relationship with the visitors, but also on public, administrative and private entities that will allow the museum to advance in initiatives of strategic collaboration, fundraising, and R&D development (Della Corte et al., 2016).

The second topic identified was the description of the axes to be applied in the structure of the museum. The model presented by SEGITTUR has been taken as a reference, since it is the most recent proposal and the one that best adapts to the administration of museums in Spain. The axes of SEGITTUR, which include Governance, Technology, Sustainability, Accessibility and Innovation, can be coordinated with the functions of the museums in a transversal way in order to optimise the operations and management of the institution. However, considering the contributions exchanged in the focus group, it has been detected that modifications or transformations must be made to some of the axes in order to ensure their efficiency in the museum. These axes are Governance and Accessibility. Governance in the museum can be attained through the monitoring of indicators, the inclusion of the local community in the participation process, and the application of quality management systems. It will be the task of the museum to foster collaboration with other institutions and transparency in communication and relationship with the visitor (tourist or local) to achieve this. Accessibility must foster museums to continue to be inclusive of strategies for accessibility in exhibition visits, especially for those with physical impairments (visual, hearing or reduced mobility), as well as incorporating open data, which is closely related to the digitization and open access of the collections. This opening would not only contribute to the intellectual accessibility of the museum's content, but also to transparency in the processes of management and participation of the visitor and the local community.

The third topic proposes a definition of smart museum, which emerged after identifying the lack of a clear definition for the term, and after comparing the existing literature and analysing the contributions of the results, the following definition is proposed:

A museum that makes a transversal incorporation of inclusive strategies and Information and Communication Technologies in all functional levels to obtain an efficient and sustainable management.

This definition arises after having established in the existing literature the functions of museums and all that they encompass, as well as after having identified the main elements that would make the museum smart in the focus group discussion. This, together with the

pointing out by the expert opinion of the elements that today remain in museums and based on the definitions of the current models of intelligent tourism management, is what has completed this term. Thus, this new terminology is what would implement the proposed smart management model, which is explained below.

With the fourth and last topic, a new model adapted to the functional areas of the museum and that integrates the smart axes in a transversal way is proposed. This model aims to serve as a guideline for the smart management of the museum, regardless of its size, ownership or resources.

The final model, see Figure 1, is a theoretical model based on the set of management functions present in all areas of the museum, segmented into three main blocks. The first, as previously presented, is the visitor experience, which includes the management of museographic elements, the creation of experiences, and the delivery of services and products, both physical and digital. The second area includes functions related to conservation and management, which includes research, acquisition, preservation, and restoration of objects, visitor management, monitoring, and analysis, and coordination and training of the organisation's personnel. And finally, the third area that includes marketing and communication strategies, focused on the promotion and relationship of the museum with both potential users and the rest of the actors in the cultural sector.

To obtain the smart management of these functions, a transversal incorporation of the five smart axes is proposed, which is currently applied to the management of smart destinations, adapted to the morphology and operation of the museum.

The first axis would be Technology, as a means and inhibitor to achieve efficiency, competitiveness, and sustainability in the museum. The incorporation of ICTs to obtain an improved experience, greater dissemination of content, optimization of the coordination of internal processes, and promotion of user participation, both local and visitor.

The second axis would be Sustainability, present in all functions and based on three-dimensional environmental, socio-cultural and economic principles.

The third axis would be Governance, as the administrative instrument to encourage user participation and responsibility with the community and environment, ensure easy accessibility and communication, promote innovation and digital transformation trends in the cultural sector, and encourage inclusivity, respect and tolerance both in the contents exhibited in the museum as well as in the institution's relations with users and other cultural entities.

The fourth axis would be Accessibility, as an essential pillar for the universalization of content, resources, media and education for all audiences, seeking the inclusion and tolerance of all museum users through all available channels.

Finally, the fifth axis would be Innovation, as another means and inhibitor of good practices, promoting research, integration and visibility of advances for the sector, based above all on experimentation, entrepreneurship and cooperation.

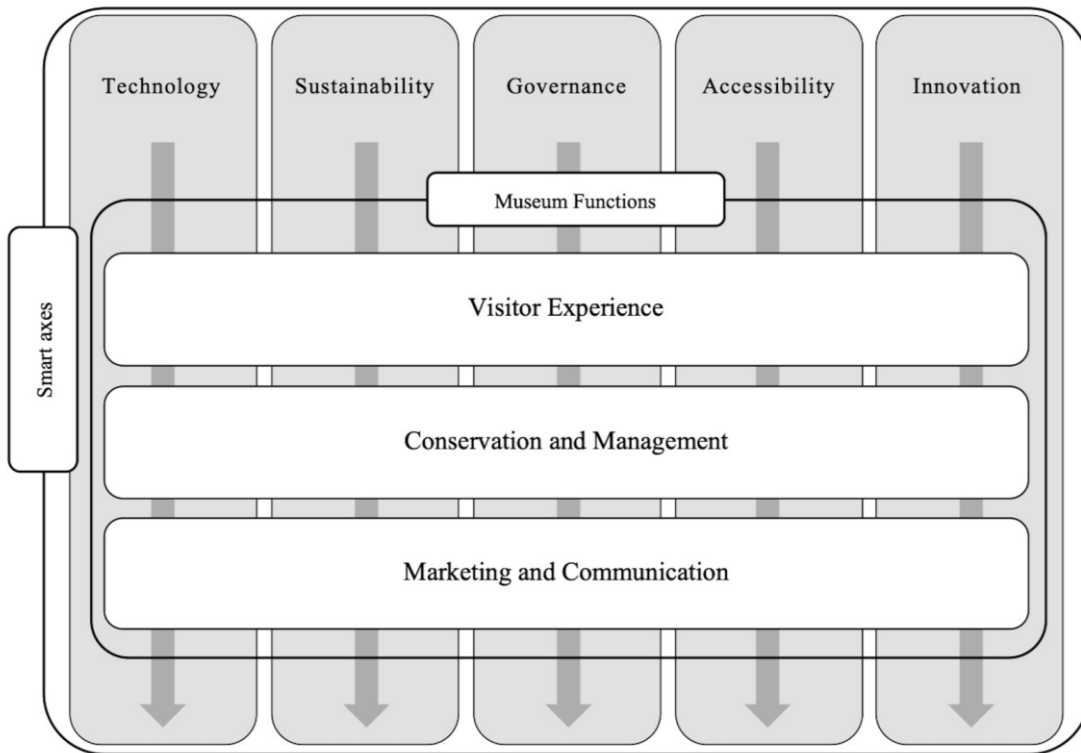


Figure 1. Proposed Smart Management Model for Museums. Source: Own elaboration (2022).

Aiming to explain and describe how this scheme shown in Figure 1 may guide the smart transformation of museums, Table 4 includes an example of actions that can be implemented in museums departing from the areas defined in the previous model. These examples are not exhaustive or definitive, but rather illustrative to show the practical use of the model and its execution.

	<i>Technology</i>	<i>Sustainability</i>	<i>Governance</i>	<i>Accessibility</i>	<i>Innovation</i>
<i>Visitor experience</i>	Implementation of ICTs as museography elements	Inclusion of workshops for both locals and tourists	Visitor participation in the choice of activities or exhibitions held in the museum	Inclusion of information tools for all audiences, such as language inclusivity, adaptation for people with hearing or visual problems, etc.	Cooperation with other entities and museums for the development of joint exhibitions and activities
<i>Conservation and management</i>	Digitization of the museum's items catalogue	Control and influence on visitor flows	Implementation and monitoring of measurable and attainable goals for museum staff	Free access and use of images from the catalogue of museum items	Promotion of R+D within the educational and research departments of the museum

Marketing and communication	Inclusion of digital marketing as a pillar of the museum's marketing strategy	Dissemination and communication of relevant and contemporary socio-cultural events	Visibility to the conservation processes and actions of the museum	Good visibility of communication channels, such as the museum's website or social networks	Communication of administrative decisions or partnerships with other museums or entities
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Table 4. Examples of application of the smart management model. Source: Own elaboration (2022).

5. CONCLUSIONS

At the beginning of this project, a general objective and specific objective were established. Once the investigation has been conducted, it can be stated that the general objective has been accomplished, as a new management model for museums based on smart principles has been created and presented. As for the specific objective, after establishing the definition of Smart Tourism and its scopes of application in the theoretical framework and contextualising museums as a scenario to implement Smart Tourism in the state of art, the definition of the Smart Museum and its main components have been developed in the discussion section after considering the research findings.

However, when starting the investigation of the current cases of smart application in museums, and trying to identify some museums already established and described as smart, limitations have arisen. The main limitation emerges from the fact that the term smart has many definitions, interpretations and still remains a “fuzzy” concept, as expressed by Gretzel et al. (2015). This has made research difficult since in many articles and cases of implementation, this term is used when, in fact, its application is not based on the same existing scientific bases. This same point was also exposed in the focus group carried out to obtain the results. On the other hand, this limitation has given way to the proposal of a definition for the intelligent museum as a result of the research. Moreover, findings in the investigation and in the focus group show that, despite the fact that multiple cases of application of new technologies and smart instruments have been found, the cultural and heritage sector is further behind in the process of digital transformation, compared to other areas of the tourism industry or other sectors.

This is why, for future lines of research, the current situation of the digital transformation process in museums could be investigated, in order to establish a state of the art in this field and designate new lines of action to also achieve the smart transformation and facilitate the application of the model proposed in this work. Further research could also be carried out to propose a way for assessing the museum smartness with specific variables of analysis, as well as to deepen the application of the smart axes in each of the functional areas identified in this investigation to identify the instruments, agents and procedures necessary for their complete and effective integration. From a more practical approach, an implementation guide for a smart vision in museums could be developed with examples and good practices for disseminating and putting the model into action.

This exploratory study contributes to a smart solution for museum management, aiming at sustainability and efficiency through the use of ICTs, but above all a first tool that helps to

understand this term and contributes to identifying and fulfilling the new tourists needs in this sector. In this regard, this proposal can serve the same museums or entities that manage museums, which are not yet familiar with smart solutions, as support to start transforming their management model, offer and services. It is an investigation for the constituent institutions of the cultural sector to reach the rest of the actors in the tourism sector that are more advanced in digital transformation or that have already embraced the smart approach. In the end, museums form an essential part of the attractions and cultural resources of the tourist destination. Thus, the adoption of smart management models in the museums sector may contribute to the protection of local heritage, and enhance the accessibility of locals and residents to it.

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