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Digitalization as an Emergent Process: Evidence from Italian Museums

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Abstract: *This paper aims to deepen some characteristics of the digitalization process in Italian museums. In particular, it aims at investigating the role of non-technical employees in such a process. Our research is qualitative and explorative. Three Italian museums, selected through convenient sampling, have been investigated through a longitudinal approach. The study points out the relevance of participatory, emergent, and mainly informal processes aimed at developing the museum's digital skills. The findings shed new light on the role of non-technical employees in fostering digitalization, thanks to autonomously developed learning processes. These are combined with the willingness to enhance employees' skills and ideas by museum managers. This approach can be viewed as an alternative or supplement to the development of digital skills through the inclusion of specialized roles (e.g.: digital manager). Some significant theoretical and managerial implications are highlighted, as well as some future lines of research.*

1. INTRODUCTION

For some years now, Italian museums have been facing the challenge of digitalization. The limitations and constraints imposed by the COVID-19 pandemic have offered interesting ideas for starting or redirecting the choices of adoption and use of digital technologies and tools. In particular, the solutions tested during the lockdown periods have contributed to the debate on the drivers of digitalization and the most effective ways to align market strategies, technologies in use, and digital skills.

Literature traditionally emphasizes a centralized way to develop digitalization paths and digital skills within museums, as well as the introduction of dedicated roles or units that are in charge of developing and enhancing the process of digitalization. Alternatively, the literature focuses on the role of the audience as a relevant organizational actor in the development of the technological paths of museums. The role played by employees has remained relegated to the margins and only in recent years it begins to be considered seriously.

We aim at shedding light on the role of non-technical employees in the digitalization processes of museums. We are also interested in understanding to what extent employee-driven digital innovation can shift the configuration of the drivers of digitalization in museums. So far, institutional pressures have emerged as the main driver.

The paper is structured as follows: in the next section, the theoretical background is presented; in the third section, we outline the research methodology and sampling criteria; in the fourth section, we illustrate and analyze evidence collected through the interviews and the documental analysis; in the fifth paragraph, we underline the limits of the research and propose some possible research development; finally in the sixth section, we draw some conclusions, and highlight theoretical and practical implications of this study.

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2. THEORETICAL BACKGROUND

The theoretical foundations of our research lay in the following streams of literature: a) processes of *digitalization* and b) employee-driven *innovation*. Both these streams have been largely developed especially in the last decade, but studies in the context of museums and cultural heritage organizations are still quite scarce.

As regards processes of digitalization, past research points out an almost complete lack of debate about what drives museums to adopt digital technologies. In the few contributions that dwell on this issue, the significant role of institutional pressures and the resulting processes of mimetic and/or normative isomorphism emerges (Cori & Fraticelli, 2021; Rasmussen, 2019), especially in terms of the choice to introduce particular devices to support onsite and online fruition.

In the last two years, the challenges that museums, as well as other places of culture, have been called upon to face during the COVID-19 pandemic, have determined a greater interest in the study of digitalization processes. Most of these studies have focused on the actions taken by museums' managers to ensure the possibility of "visiting" collections even during periods of forced closure. Overall, however, the issues concerning the drivers of digitalization, as well as the search for alignment between audience strategies, technological choices, and digital skills, remain largely unexplored.

As regards the second stream of literature, the issue of employee-driven innovation processes (Aasen et al., 2012; Høyrup, 2010; Kesting & Ulhøi, 2010) is showing a renewed interest in the processes of digital transformation involving non-specialist roles (Cetindamar et al., 2022; Krejci et al., 2022; Mueller & Renken, 2017; Neyer et al., 2009; Osmundsen et al., 2018). Opland et al. (2022), in particular, coined the concept of "employee-driven digital innovation" and propose a conceptual model that incorporates three variables capable of explaining digital innovation behavior by employees: internal organizational environment, external competitive environment, and digital tools for supporting the innovation process. They also argue that "more knowledge is still needed about those organizational elements that can foster employee-led digital innovation and those that can hinder it" (2022, p. 264). Yet, research on employee-driven digital innovation in the field of cultural institutions seems to still be in an embryonic state, except for a few studies. The latter stress the role of non-technical employees in the digitalization processes (Cori & Fraticelli, 2021), as well as the relevance of digital literacy among museum practitioners (Huang et al., 2022).

In light of the gaps we identified in the literature, this study aims at enriching the current knowledge on the "employee-driven" approaches to digital innovation. It also aims to get more knowledge on the organizational conditions that stimulate the contribution of non-technical employees to digital innovation.

3. METHOD AND SAMPLE

We addressed the complexity of the phenomena under investigation through qualitative and explorative research. This is characterized by a longitudinal approach, "in which phenomena are observed for a certain period and data are recorded at successive points" (Corbetta, 2003, p. 31). Successive interviews are carried out in which the questionnaire is modified each time, thus allowing permanent monitoring of phenomena that are investigated (Corbetta, 2003, p. 148).

Considering the goals that are set through this study, we believed the multi-case study is the most suitable method; indeed, through a multi-case approach, it is possible to compare different situations to provide representations of reality and the dynamics at work, and then compare them with the literature of reference (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Yin, 2009).

The following museums have been selected through a "convenient sampling" (Mayan, 2016, p, 62), based on the availability to be interviewed: Balì Museum (Colli al Metauro, Pesaro and Urbino), Museums at Castello Sforzesco (Milan), and Museum at La Venaria Reale (Turin). The main features of the sample are summarized in Table 1. The sample has been built according to the following criteria: (a) a combination of historical and artistic importance of the site and relevance of the collections housed in it and (b) variety of the sample, according to the logic of the multi-case method.

The choice to select a sample consisting of art collections hosted in sites, whose historical and artistic value is notable, is linked to the belief that this combination extolls the opportunities inherent in the digital technologies for on-site fruition. As regards the variety of the sample, this was obtained by considering the following characteristics: ownership, year of foundation, the annual number of visitors, and characteristics of the collections hosted.

Selected museums have been investigated through semi-structured interviews and document analysis. Semi-structured telephone interviews were conducted with directors and curators of these museums between September 2018 and October 2022[3]. A total of three interviews for each museum were conducted: before the pandemic, as the selected museums have already started the digitalization process; following the definitive reopening of places of culture; finally, the third interview was administered about a year after the limitations regarding the access of audience were overcome. Each telephone interview, lasting between 30 and 45 minutes, has been recorded and faithfully transcribed; then, the text of the interview has been submitted to the respondents for a check.

Document analysis was performed on the museum's website and was aimed at deepening our knowledge about the main features of the museum offer, the types of services offered, and the methods of communication and interaction with the relevant public.

During the first interview three main questions had been posed, concerning: type of market strategy pursued by the museum; type of digital technologies/devices in use and reasons that have pushed museums to their adoption; range of digital skills held by managers or employees in the museum, or externally accessible.

The second interview was focused on the one side on the main solutions and tools/channels used by the museums during the period of closure to the public; on the other side, on the digitalization strategy undertaken by the museums, the roles involved, the skills required, as well as any inter-organizational relationship activated to access knowledge and skills needed to support the digitalization processes.

Lastly, the third interview was aimed at knowing if digital solutions proposed by non-technical employees during the periods of forced closure of museums have been "institutionalized" after the reopening; whether the significance of employee-driven innovations has led the museum

[3] Specifically, the following roles were interviewed: Francesca Cavallotti (Scientific Director of Balì Museum, Colli al Metauro), Fiorella Mattio (Curator of Museums at Castello Sforzesco, Milan) and Matteo Fagiano (Social Media Manager of Museum at La Venaria Reale, Turin).

management to change the digital skills development strategy and to encourage emerging digitalization processes through the enhancement of skills and ideas of non-technical employees.

Table 1. Main features of the sample

Museum	*Place*	*Year of foundation*	*Ownership*	*Visitors (2019)*	*Type of heritage*
Balì Museum	Colli al Metauro (PU)	2004	Private	50.000	Science museum
Museums at Castello Sforzesco	Milano	Late 1800s	Public (municipality)	587.000	Archaeological finds, wooden sculptures, ancient art, decoarts, musical instruments. Renaissance sculptures and paintings
La Venaria Reale	Torino	2008	Public-private network	837.000	Paintings and sculptures (15th to 17th century). Thematic exhibitions

Source: Our elaboration

4. FINDINGS

In this section, we summarize the main findings that emerged in the first steps of the research. We then focus on the content of the last two interviews, conducted in the post-pandemic period.

Before the onset of the pandemic, the three museums under investigation had already started a digitalization path, whose main driver seemed to be institutional pressures, as suggested by ongoing processes of mimetic and normative isomorphism (Cori & Fraticelli, 2021).

At the same time, however, the respective digitalization processes showed a certain degree of variety, which can be interpreted as the result on the one hand of different awareness on the part of directors and curators, and, on the other hand, of the extent to which museums can internally develop, acquire, or externally access digital skills.

How museums have faced periods of forced closure leads us to believe that, to date, the role of institutional pressures as drivers of digitalization processes is weaker than in the past, to the advantage of internal drives, which in turn seem linked to organizational choices.

Overall, the three museums faced the health emergency by providing innovative solutions, to make it possible the fruition of art collections by people forced to stay at home.

During the closing period, the museums under study significantly increased their presence on social networks, offering various content such as videos, interviews, tutorials and workshops, as well as solutions for younger people such as quizzes, interactive games, and challenges with prizes. In addition, Virtual Tours or interactive guided tours were provided using the digital content already available, to anticipate the visit on-site during the period when it was not possible while still maintaining its educational role. In addition, all museums interviewed turned their attention to educational services, through the organization of distance learning events, or by setting up a sort of "online campus" for children. In general, these solutions have made it possible not only to replace the visit inside the museum but also to reach different targets, to entertain users in a period of difficulty and crisis, to show art-works not exposed to the public, to involve staff that during the ordinary activity does not come into contact with visitors.

Museums allowed or strengthened the online use of their collection also with the contribution of non-technical employees, that leveraged autonomously developed skills and their creativity. The availability of non-technical employees and the willingness on the part of management to value their contribution have sometimes produced original solutions that were particularly appreciated by the audience.

The following example bears witness to the creative effort made by the employees normally in contact with the public:

"The custodians (...) put their personal skills to good use, providing us with some very funny videos in which each of them told what his favorite work was. (...) They even invented an 8-episode format called "Sforzesco pazzesco" with videos shot and edited by them" (Fiorella Mattio, Curator at Museums at Castello Sforzesco).

The following excerpt, while not making explicit reference to any specific solution, underlines the relevance of a participatory approach, where decisions relating to the introduction of digital technologies involve many organizational levels.

"Overall, the employees have gained the necessary skills not only to make the best use of the resources currently in use but also to suggest some possible development hypotheses to be presented to those who will then make the decisions. (...) Proposals (for the introduction of new technologies) mature at various levels internally, by those directly involved in the process of providing the services; everyone can have a proposal linked to digital innovation; (...) in a widespread way it is possible to identify elements of innovation" (interview to Matteo Fagiano, Social Media Manager at La Venaria Reale)

Finally, the last two excerpts underline the importance attributed to internal digital skills development paths; this is a choice that can be regarded as preparatory to an "employee-driven innovation" approach.

The objective is to develop resources internally (digital skills); it is preferable to involve employees in a training course rather than relying on an external consultant, because the resources thus developed remain available to the museum" (interview to Francesca Cavallotti, Scientific Director at Balì Museum)

A continuous learning process can be observed, carried out in self-study mode (...) but in some way connected to the digitalization path of the museum (Francesca Cavallotti, Scientific Director at Balì Museum)

In all three cases examined the management's care towards a participatory and widespread approach to digital transformation represents a constant throughout the observation period, albeit with different nuances. The outcomes of this process are observable above all in correspondence with the forced closures of museums due to the pandemic and have not always been "institutionalized" after the reopening. However, the involvement of employees is not occasional but finds an antecedent in the choices relating to the development of digital skills and, more generally, in the organizational logic that governs the process of digitalization.

The situations observed lead us to believe that the effectiveness of digitalization processes can be fostered by the joint and integrated use of a centralized and formalized approach on the one side, and an emergent, participatory and informal approach on the other side. In the first case, digital skills are mainly held by technical/specialist roles, and the digitalization process is formalized in guidelines, according to a top-down method. On the contrary, in the second case, the digitalization

process makes use of skills that are widespread in the organization and is supported by employee-driven innovation, which often is incremental.

In this perspective, digitalization tends to become a widespread process that, while being guided by managerial roles, bases its ability to achieve the desired results on the quality of the interactions between non-technical employees, IT professionals, and managers. Equally important in this approach are the interactions between front-line employees and visitors, as they allow the museum to pursue a better alignment with the audience's needs and expectations (Schwob et al., 2022).

5. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

In addition to the limitations generally associated with multi-case studies, primarily related to the non-generalizability of the results, our research suffers from some specific limitations.

The first limitation concerns the sample size. Limitations related to the time of the researchers and the availability of the key informants suggested studying only three different museums. However, we are aware that a saturation situation has not yet been reached, in which it is difficult to think that new, significant evidence can emerge (Mayan, 2016; Morse, 2000). For this reason, a line of research development can certainly be identified in the expansion of the sample.

The temporal extension of the study represents in our view a third limitation. The decision to move towards a longitudinal survey has allowed us to collect richer and more significant insights. However, the slow pace of digitalization processes within museums, despite the acceleration experienced in correspondence with the pandemic, would require an even longer observation period. A future line of research can therefore be identified in the provision of further moments of observation, with the aim of including the next steps of the digitalization process.

The fact that the field analysis was carried out through repeated interviews with a single key informant represents a further limitation of the present study. Although our choice was aimed at identifying the manager who has maintained an overall vision of the digitalization process over the years, we believe that richer insights can only be obtained by involving the employees themselves. A further line of development of the research can therefore be seen in the integration of the data collected so far with interviews with those employees who have contributed more than others in terms of ideas and proposed solutions.

Finally, a fourth limitation of the research concerns the difficulty to assess the results of employee-driven digital innovation. We believe that such limitation could only partially be overcome by extending the observation time horizon. However, this issue is currently regarded as one of the main research gaps in the literature about employee-driven innovation (Opland et al., 2022).

Beyond the research developments suggested by the current limitations, a natural line of development can be identified in the analysis of which organizational elements can foster employee-driven digital innovation and which other can impede it, that is in the ways in which organizations facilitate innovative practices among the so-called "ordinary employees". A more in-depth study of the organizational characteristics supporting widespread processes of digital innovation is also hoped for by scholars who first addressed this issue (Ciriello et al., 2017; Høyrup, 2010; Krejci et al., 2022; Opland et al., 2022; Voxted, 2018).

6. CONCLUSION

This study aimed at investigating the role of non-technical employees in the digitalization processes through a longitudinal analysis conducted on three Italian museums. The results confirm that non-technical employees play a significant role in the development of digital solutions, thanks to skills often developed on personal initiative and innovative ideas that are recognized and valued by managers.

Furthermore, the analysis provides some initial evidence relating to the existence of organizational conditions to support widespread digital innovation processes and the "employee-driven" approach. Among these: the awareness that innovation is a widespread phenomenon and not circumscribed to particular structures and roles; the emphasis on knowledge management/knowledge sharing; finally, values-oriented personnel selection criteria (e.g.: the museum's employees share with customers their passion for art).

It can also be assumed that non-technical employees contribute to making digitalization processes more effective thanks to their ability to tune in with the users and perceive their needs and expectations.

With regard to the drivers of the digitalization process, our research offers support to the idea they are multiple and different: on the one hand, institutional pressures, so far considered prevalent; on the other, internal drives, which seem to be strengthened by the contribution of non-technical employees and by the integration of this contribution with that of IT specialists.

We believe that our research can contribute to a clear acknowledgment of issues concerning the digitalization process by managers of Italian museums.

The results of the study have some significant theoretical and managerial implications. On the theoretical level, the study enriches the current knowledge regarding the drivers of digitalization processes in museums, in particular by emphasizing the role of organizational choices in determining their intensity and direction. It also contributes to extending research on employee-driven innovation, insofar scarcely investigated in the context of cultural heritage. Finally, it proposes a match between the literature on employee-driven innovation with that on digital skills and digital literacy.

On the managerial level, the study can make museums' managers and curators aware of what facilitates an effective alignment between the needs of the audience and the adoption of digital technologies. In particular, managers can consider more carefully the use of widespread digital skills, compared to those held by particular roles or accessible externally. They can also recognize the value of innovative skills and ideas from non-IT employees and the opportunity to integrate them with the skills held by specialist roles.

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