Navigating the Digital Transformation: Unveiling the Role of Business Administration in Museums' Evolution

Marko Ljubič
Slovenian School Museum, Slovenia

Abstract

The digital transition of museums and cultural heritage institutions has gained momentum with the increasing demand for digital experiences, especially against the COVID-19 pandemic. This paper explores the existence and development of business models for museum operations in the digital age. While digitising contents and objects is evident, the digitalisation of museum business activities and management remains underexplored. This study reviews relevant literature to analyse the role of business administration in the digital transformation of museums. Key themes include the integration of digital technologies, business model innovation, organisation transformation, and challenges posed by the pandemic. Through a comprehensive literature review, this paper emphasises the importance of holistic approaches and adaptive strategies in navigating the complexities of digital transformation in the museum sector. Museum business administration should be essential in ensuring digital technologies are integrated seamlessly into the museum's operations and workflows. While there is a growing body of research on business models for museums and cultural heritage institutions in the digital age, there are still some limitations and gaps in the existing literature.

Introduction

The digital transition/transformation of museums has been an ongoing process for many years now. Recently, the rise of digital technologies and the increasing demand for digital experiences (especially during Covid19 pandemic) has accelerated this process. As the digital transformation has impacted every sector of the economy, including the museum industry, the introduction of digital technology has revolutionised the way museums interact with visitors, curate exhibits, and manage collections. The research questions in this paper focus on exploring the existence and evolution of business models for museums and cultural heritage institutions in the digital age.

While the digitisation of museum contents and objects is in full swing, the digitisation of museum business (financial-administrative) activity and museum management is hardly talked about, especially in Slovenia. For example, the strategic plans of the three main Slovenian museums focus exclusively on the digitisation of contents, collections and exhibitions (Car, 2021; Polenec, 2020; Širok, 2018). In our opinion, this is not self-explanatory and needs special attention.

According to Piva (Piva, 2016), new technologies offer the possibility of more efficient implementation of business internal and external (market) management activities. It is necessary to emphasise that "digitalisation is not limited to technical use but is a process that transforms modern art institutions as a whole, especially in communication, institutionalism, branding (that is, the creation and validity of brands or trademarks, AN), marketing, finance and sustainability" (Güner & Gülaçti, 2022. pp. 13).

How museums are digitally prepared and how this affects their business performance is one of the main questions that has not been explored yet and should be the subject of further analysis. The assumption is that, especially after the COVID-19 period, most museums digitised or at least started to digitise their collections; some of them have already developed digital online exhibitions, but they have not yet fully developed concrete, comprehensive business models for operating in a digital society. Thus, this paper aims to find out (by relevant literature review) the role, if any, of the business administration in the digital transition of museums. Our honest opinion is that business administration has had, has, and will have a pivotal role in the development and implementation of new business models that will define the future identity of museums in the digital age.

Methodology

To answer the research questions, it is appropriate to conduct a thorough literature review on the topic. The methodology of the digital transition/transformation of museums: The relevant literature review consists of the following stages:

- o Stage 1. Setting the main research questions: Do business models for the operation of museums / cultural heritage institutions in the digital age already exist, or are they being developed? What is the role of museum business administration in the digital transition, if any?
- o Stage 2. Identifying 10 keywords and phrases related to research questions: Business model (for the museums); Cultural heritage/museums in the digital age; Digital museums; Digital transformation of the museums/cultural heritage; Museum Digitalization; Management of digital information technologies; Organizational transformation of the museums; Cultural strategic management; Digital strategy of the museums; Digital Preservation.

- o Stage 3. Searching for relevant literature: Use academic databases, search engines via Google Scholar, and other possible sources to identify relevant literature with the selected keywords mentioned above. The relevant literature should not be older than 6 years (the years 2017 and above are included).
- o Stage 4. Elevating and afterwards selecting the identified literature to determine if it is relevant and reliable regarding the topic of museums' digital transformation and if it is directly mentioned throughout the articles about "business models," "digital transformation," or the role of "museum management" or "museum administration." In that way, we have found 25 scientific articles (marked in green in the References) for further selection. According to their relevance to the topic, found in abstracts and keywords, we chose five of them for further research (Russo-Spena et al., 2022; Garlandini, 2021; Loonam et al., 2018; De Bernardi et al., 2019; and Zardini Lacedelli et al., 2019).
- o Stage 5. To analyse and synthesise the findings in selected articles to identify themes, trends, and gaps in the research area. This involves summarising key findings, comparing different studies, and identifying areas where further research is needed. The literature review will thus provide a critical analysis of the strengths and weaknesses of the existing literature.

Results

There is ongoing research and development of business models for museums and cultural heritage institutions in the digital age. The integration of digital technologies into the museum experience has created new opportunities for revenue generation and cost savings. However, it has also presented new challenges that require innovative business models and their implementation in the museum's everyday life and work. The role of museum business administration in the digital transition is, in our opinion, critical to ensuring the successful adoption and implementation of digital technologies.

Museum business administration involves the management of resources, finances, and operations to achieve organisational goals, which includes the integration of digital technologies. How "are business models in the cultural heritage being transformed by digital technologies" is the research question of the article "A digital business model: an illustrated framework from the cultural heritage business" by Russo-Spena et al. (2022, pp. 2001), which presents a framework for a digital business model in the cultural heritage sector. The authors argue that digital technologies provide opportunities for cultural heritage businesses to create new value propositions to be more competitive and effective in digital society and its economy (Russo-Spena et al. (2022, pp. 2002). The article also provides a literature review on digital business models and their applications in the cultural heritage sector, which is an important part of a complex and dynamic modern society. It is emphasised that constant changes in business models are a reality in modern social ecosystems and that it is "necessary to consider the implications of using technology within and across the organisation and to investigate how technology is connected to novel ways of conceptualising value and its related processes from a wider perspective." (Russo-Spena et al. (2022, pp. 2003). The authors then present a theoretical framework for digital business models based on three core components: value orchestration, experience proposition, and value sharing. The authors illustrate this framework using examples from the cultural heritage business. The paper argues that digital technologies have fundamentally changed the way that businesses operate and create value and that traditional business models are no longer sufficient to capture the full potential of these

technologies. It is suggested that businesses need to focus on these three components to fully leverage the opportunities presented by digital technologies (Russo-Spena et al. (2022, pp. 2007–2016).

Value orchestration refers to the way that businesses use digital technologies to coordinate and integrate different parts of their value chain, including suppliers, partners, and customers. This can lead to more efficient and effective operations and new opportunities for collaboration and innovation, as can be seen in The Galicia Jewish Museum (Poland) (Russo-Spena et al. (2022, pp. 2008–2009).

Experience proposition plays a pivotal role in this business model. It refers to the way that businesses use digital technologies to create and deliver compelling customer experiences. This can include personalisation, real-time feedback, and interaction, with integration across different channels and touchpoints. Good examples of experience proposition, e.g., online collections and VR and AR solutions, offer the Belvedere Museum in Vienna and the Rijksmuseum in the Netherlands (Russo-Spena et al. (2022, pp. 2010–2011).

Value sharing refers to the way that businesses use digital technologies to distribute and capture value across their ecosystem. This can involve new business models, such as subscription services or platform-based models, as well as new forms of revenue sharing and collaboration with partners and stakeholders in the context of natural, social, and economic capital (Russo-Spena et al. (2022, pp. 2022–2012).

Overall, the paper suggests that cultural heritage business management needs to see digital business models as an improvement and an upgrade of traditional business models, implementing three main pillars (value orchestration, experience propositions, and value sharing) to fully leverage the potential of digital technologies and create new and innovative business models. To do so, museum managers need to verify if their institutions have the proper conditions for implementing digital technologies and the ability to hire digitally skilled staff or to reskill or upskill existing staff with specially designed educational programs supported by governmental institutions on a local, national, or supranational level (Russo-Spena et al. (2022, pp. 2016–2017).

The need to develop proper digital skills especially addresses the authors of the article "Digital Education as a Catalyst for Museum Transformation: The Case of the Museum and New Digital Cultures" (Zardini Lacedelli et al., 2019). The article addresses the issue of how to address the new educational needs of individual professionals working in cultural organisations, especially in small museums, in a way that supports broader organisational change in the context of digital transformation. The article analyses the impact of a specific training program, "Museums and New Digital Cultures," which aimed to update the digital skills of the cultural workforce of the Veneto Region. As evidenced by the literature review, museums recognise the importance of adapting to the changing digital culture and the need for their roles to evolve, also by "shifting the focus from digital skills to digital confidence "(Zardini Lacedelli et al., pp. 48) of employees. The authors pointed out that there is a lack of clarity on how to address the new educational needs of cultural professionals in a way that supports broader organisational change (Zardini Lacedelli et al., 2019, pp. 48–49; 62). The article details the training program mentioned above, whose aim is to match these new educational needs by providing five educational modules: 1) Museum education in the digital age (how to use technology – digital tools in an active educational process with the students; 2) Online public and digital engagement (how to communicate with new public – online users via social media platforms and how to engage them in the museum's life and work; 3) The museum outside the museum: new cultural productions (to explore new technology and approaches to involve the public in emotional, interactive, and participatory experiences in cultural production

with the emphasis on how the museum conceptualisation has evolved, resulting in new cultural products designed to expand the museum narrative outside its wall); 4) Digital heritage: copyright and open data (how to deal with the emergence of digital heritage and what are new forms of digital curation; 5) Crowdfunding and cultural marketing (to explore new sustainability possibilities for funding in the digital age, with a focus on community involvement and funding programs like Creative Europe and Erasmus Plus) It also presented new cultural marketing strategies and guided participants in designing a crowdfunding campaign to involve communities in supporting cultural projects through digital platforms (Zardini Lacedelli et al., 2019, pp. 54–55).

The results showed that the training had a positive impact on individuals, regardless of their roles. This included a shift in perspective towards their profession, increased digital confidence, the introduction of collaborative approaches, and the fostering of creativity. However, not all organisational roles perceived this evolution as contributing to broader organisational change. Top managers embraced the digital revolution and networked ways of working, while middle managers and front-line staff were more sceptical about shaping the future direction of their organisations. Two fundamental conclusions can be drawn from this study. Firstly, the adoption of new digital practices can play a crucial role in adapting the overall cultural offer and influencing the museum's strategic direction in the long term. Secondly, a cross-sectoral reflection on the new practices introduced is necessary to increase opportunities for interaction across different organisational roles and stimulate the inclusion of middle- and front-line staff in the development of the cultural offer. Although this study was exploratory, limited in scale, and context-dependent, the responses indicated a tendency for the training program to result in some degree of organisational change. As a result, this research highlights how digital education can function as a trigger for the complete transformation of an organisation.

This urge to implement new digital technologies in order to achieve successful digital transformation is explored in the research article "Towards digital transformation: Lessons learned from traditional organisations" (Loonam et al., 2018), where 10 case studies of applying digital transformation are reviewed and analysed. One case study –Tate's digital transformation, is from the cultural sector and is thus interesting for this topic of research. In general, the article explores the actions needed by organisations to transform their operations digitally. To understand the impact of this topic on business models, it is necessary to provide a brief overview of the diverse definitions and compositions of the business model concept. There is no widely agreed-upon definition, with various scholars describing it as a set of roles and relationships, a set of activities, support in creating and capturing value, and a system of interdependent activities that is "an important tool in supporting organisational strategic choices" (Loonam et al., 2018, pp. 101–102). The authors identify five archetypes of business model reinvention driven by digital technology: 1) reinventing the entire industry; 2) substituting products and services; 3) creating new digital businesses; 4) reconfiguring value delivery models; and 5) rethinking value propositions. These archetypes serve as the proposed empirical framework for the article's case studies (Loonam et al., 2018, pp. 102).

The study identifies four important themes for traditional organisations implementing digital transformation: 1) business model innovation, 2) organisation, 3) understanding customer needs, and 4) integration of internal and external digital systems. The themes are divided into strategic (Business Model Innovation, Organisation) and operational perspectives (Technology, Customers), with a focus on developing a clear business model and ensuring customer needs are met while also integrating internal and

external digital systems. That way, the authors of the research article have created a framework that outlines the necessary managerial actions: 1) strategic-centric, 2) customer-centric, 3) organization-centric, and 4) technology-centric actions that must be taken to implement digital transformation initiatives successfully (Loonam et al., 2018, pp. 105–107). The framework can serve as a guide for management and provide a comprehensive view of the critical strategic and operational factors that need to be addressed. Thus, it can be used as a tool to facilitate the implementation processes and ensure the success of an organisation's digital transformation initiatives (Loonam et al., 2018, pp. 108). The study also finds that three main business model innovations were present in the case analysis of digital transformations: creating new digital businesses, reconfiguring value delivery models, and rethinking value propositions. None of the cases looked to completely reinvent their industry or substitute their products or services with digital solutions, as they were traditional organisations adapting to digital transformation rather than replacing their traditional business models (pp. 105–106). For example, The Tate Museum aimed to redefine digital as an integral part of all aspects by broadening digital activities beyond their role of supporting physical galleries (Loonam et al., 2018, pp. 106), thereby creating new digital business in the form of the Tate's fifth gallery as a comprehensive and inclusive virtual place (Loonam et al., 2018, pp. 103). For The Tate Museum, it was also important to adopt "blending a physical and digital (or virtual) customer experience" (Loonam et al., 2018, pp. 106) as its main customer-centric approach.

Above all, according to this study, effective leadership, change management, and organizational-wide communication are focal points to ensuring successful digital transformation, based on the cases reviewed. The study also emphasises the importance of acknowledging the organisation's legacy business processes and organisational structures when adapting digital technologies (Loonam et al., 2018, pp. 107). These findings highlight the need for a holistic approach to digital transformation, where digital technologies are integrated into the organisation's overall strategy and structure rather than being viewed as separate entities.

However, as demonstrated in the article "Logics hindering digital transformation in cultural heritage strategic management: An Exploratory Case Study" (De Bernardi et al., 2019), "even if digitalisation is already adopted by museums, a systematic and holistic approach to digital innovation in museum organisation and management systems is still missing." (De Bernardi et al., 2019, pp. 319). The main objective of this article is to investigate the factors that hinder digital innovation in museums and how digitalisation is obstructed. Although this topic is significant, the authors believe that it has not been thoroughly explored in previous research (De Bernardi et al., 2019, pp. 315–316). Thus, this article presents an exploratory case study that examines the level of digitalisation necessary for museums to adopt in their communication strategies and "to recognise the logics hindering digital transformation in cultural heritage strategic management" (De Bernardi et al., 2019, pp. 315). The study focuses on museums in Turin, Italy, and gathers data from various sources, including institutional reports, museum websites, social media, and semi-structured interviews with museum managers. In order to conduct comprehensive research, a three-stage framework of digital strategies has been established, representing three possible (museum) approaches towards digital strategy: 1) Unstructured Approach (use of digital technologies is not planned; there is no formal Digital Strategy), 2) Partial Approach (use of digital technologies is planned within the adopted Digital Strategy) and 3) Integrated Approach (integration of the adopted Digital Strategy into Overarching Museum Strategy) (De Bernardi et al., 2019, pp. 319, pp. 322-323).

According to research findings, at the time of the survey (between 2017 and 2018), the majority of museums in Turin were (if) using an Unstructured Approach when adopting some new digital technologies in order to get more visitors. Only two museums were in Partial Approach, and none of them did not reach Integrated Approach. It seems that the managers were forgetting the importance of creating two-way communication with the museum audience, which goes beyond merely providing information (De Bernardi et al., 2019, pp. 321).

The study identifies several barriers that hinder the integration of digitalisation processes in cultural heritage management, in addition to the well-known financial deficit or insufficient funding of cultural institutions. These barriers include institutional pressures as well as the lack of organisational and managerial coordination between various museum departments and functions involved in the development of digital strategies and their integration into the strategic planning systems of museums, also due to silo mentality (De Bernardi et al., 2019, pp. 324).

Overall, the research reveals that most museum managers do understand the importance of digitalisation for museum development, but the level of digital readiness is still low (De Bernardi et al., 2019, pp. 315).

The game changer for this kind of situation in Italian museums and in museums all across the globe must have been the COVID-19 pandemic. Alberto Garlandini, president of ICOM—International Council of Museums, describes how museums were affected and what challenges await them after the end of the pandemic and the resulting economic crisis in the article "Museums and Heritage in the Digital Age: The Challenge of Cultural Change and Technological Innovation" (Garlandini, 2021).

The author discusses how museums have adapted and reinvented themselves in response to the COVID-19 pandemic. It highlights the increase in inequalities and disparities in accessing heritage and cultural life caused by the pandemic. The article references ICOM's 2020 global surveys to show how museums have utilised digital innovation during lockdowns to interact with communities more efficiently and attract new audiences (Garlandini, 2021, pp. 11–14).

It emphasises how museum professionals have been incorporating digital technologies throughout their work, including communication, conservation, accessibility, education, and visitor experiences. Museums are adapting by rethinking their organisation, developing interactive displays, updating monitoring systems, and implementing advanced booking platforms to manage visitor flow in time and space. They may also collaborate with neighbouring museums to provide a better experience. During the ICOM ASPAC event in Seoul, it was highlighted that artificial intelligence (AI) applications are a necessary part of the museum's innovation. AI can personalise visitor experiences and enhance collection accessibility. Additionally, it can improve museum research by analysing data through machine learning (Garlandini, 2021, pp. 14).

The pandemic has accelerated the need for museums to adopt new business models and exhibition policies due to the crisis of global mobility and mass tourism. The focus here must be on the interaction between personal and digital visits to museums. The article also calls for public support for museums' cultural, technological, and managerial innovation and emphasises the need for new interdisciplinary competencies and professional interaction in the digital world (Garlandini, 2021, pp. 15–16).

Overall, museums and cultural heritage institutions are increasingly recognising the need to develop innovative business models that can sustainably support their operations in the digital age. While some successful models are already being used, there is still much room for experimentation and development in this area.

The advent of digital technology has revolutionised the museum industry, allowing museums to engage with their audiences in new and innovative ways. Social media platforms such as Instagram, Facebook, and Twitter have enabled museums to reach new audiences and engage with their visitors in real time. Social media has also allowed museums to promote their exhibits and events, increasing visitor numbers and revenue. Digital technology has enabled museums to create interactive exhibits, virtual tours, and online exhibitions. These new digital platforms provide visitors with an immersive experience that goes beyond traditional museum exhibits and allows visitors to explore museums and cultural heritage sites from anywhere in the world. The use of digital technology also provides museums with a new way to manage and curate their collections: to store and display their collections in new and innovative ways, allowing them to preserve better and protect their artefacts.

Discussion

The topic of business models for museums and cultural heritage institutions in the digital age is important and timely. The digital age has brought about significant changes in the way people access and engage with cultural heritage. Museums and cultural heritage institutions must adapt to these changes to remain relevant and sustainable. In our discussion, we have identified several business models that museums and cultural heritage institutions can adopt to meet the challenges of the digital age. These models include the use of digital technologies to create virtual experiences, digital marketing, and social media to promote exhibits and events.

The current topic of business models for museums and cultural heritage institutions in the digital age is a critical area of concern for the cultural sector. In recent years, the digital revolution has had a profound impact on the way people interact with cultural heritage, and museums and cultural institutions are challenged to keep pace with these changes.

The first two articles deal with the integration of digital technologies into museum business administration. Russo-Spena et al.'s (2022) paper proposes a framework for a digital business model in the cultural heritage sector based on value orchestration, experience propositions, and value sharing. The authors argue that traditional business models are no longer sufficient to leverage the opportunities presented by digital technologies fully. Zardini Lacedelli et al.'s (2019) article addresses the issue of developing proper digital skills for the cultural workforce of small seized museums. They present a training program called "Museums and New Digital Cultures" that aims to update the digital skills of the cultural workforce and address the new educational needs of cultural professionals in a way that supports broader organisational change.

Both articles provide insights into the transformation of museum business administration through the integration of digital technologies. Russo-Spena et al.'s (2022) framework for a digital business model is an important contribution to the field, providing a theoretical basis for integrating digital technologies into museum business administration. The authors' argument that traditional business models are no longer sufficient is supported by their analysis of how digital technologies have changed the way that businesses operate and create value.

Zardini Lacedelli et al.'s (2019) article highlights the importance of developing digital skills for the cultural workforce and presents a training program that addresses this need. The authors' focus on digital confidence rather than digital skills is an important contribution to the field, as it highlights the need for cultural professionals to feel comfortable using digital technologies in their work. This is particularly important for small seize museums, where resources may be limited.

Overall, these articles provide valuable insights into the integration of digital technologies into museum business administration. However, additional research is needed to determine the effectiveness of the proposed digital business model framework and the training program. Future research could include case studies of museums that have successfully integrated digital technologies into their business administration and evaluations of the effectiveness of the proposed frameworks and training programs. The practical implications of these articles include the need for museum managers to verify if their institutions have proper conditions for implementing digital technologies and the ability to hire digitally skilled staff or to reskill/upskill existing staff with specially designed educational programs. Limitations of these articles include the fact that they focus on a specific cultural heritage sector and may not be generalisable to other sectors or contexts, as well as the small sample size.

The COVID-19 pandemic has further accelerated the need for museums and cultural heritage institutions to adopt new digital technologies and business models. With lockdowns and travel restrictions in place, many institutions have been forced to close their doors to visitors. As a result, they have turned to digital technologies and virtual platforms to maintain engagement with audiences and continue to offer access to their collections and exhibitions.

However, while the digital age presents many opportunities for museums and cultural institutions, it also poses significant challenges. One key challenge is how to balance the need for innovation with the preservation of cultural heritage. Digital technologies can offer new ways of engaging with heritage, but there are also concerns about the authenticity of digital representations and the potential loss of tangible heritage.

Another challenge is how to ensure equitable access to digital technologies and virtual experiences. While virtual platforms offer new ways of accessing cultural heritage for those who cannot physically visit museums and cultural sites, there may be barriers to access for those who do not have access to the necessary technologies or internet connectivity.

The article by Alberto Garlandini (2021) provides a comprehensive overview of how the COVID-19 pandemic has impacted museums and how they have adapted to the challenges it has presented. It highlights the importance of digital innovation in maintaining and enhancing access to cultural heritage during the pandemic. The use of digital technologies has allowed museums to reach new audiences and interact with communities more effectively. However, the article also notes that the pandemic has worsened inequalities in accessing heritage and cultural life. The adoption of digital technologies has presented both opportunities and challenges for museums. On the one hand, digital technologies have allowed museums to develop interactive displays, personalise visitor experiences, and enhance collection accessibility. On the other hand, they have also necessitated new business models and exhibition policies, requiring museums to rethink their organisation and management. The article underscores the need for interdisciplinary competencies and professional interaction in the digital world. This implies that museums must work collaboratively with other institutions, such as universities and research centres, to keep up with the fast-changing digital landscape. In this regard, artificial intelligence applications are seen as a necessary part of museums' innovation, as they can improve visitor experiences, enhance collection accessibility, and improve museum research through data analysis. It is suggested that further research is needed to investigate the impact of digital technologies on museums and to develop new business models and exhibition policies that integrate digital and personal visits. Garlandini (2021) also calls for public support for museums' cultural, technological, and managerial innovation.

The COVID-19 pandemic has presented a significant challenge to museums worldwide. However, it has also accelerated the adoption of digital technologies and provided new opportunities for museums to enhance access to cultural heritage. Alberto Garlandini's article (2021) provides valuable insights into how museums have adapted and reinvented themselves in response to the pandemic and the challenges they face moving forward.

Despite these challenges, the adoption of new business models for museums and cultural heritage institutions is essential for their continued relevance and sustainability in the digital age. These models must be developed with a clear understanding of audiences' needs and preferences and with a commitment to the preservation and protection of cultural heritage.

The article "Logics Hindering Digital Transformation in Cultural Heritage Strategic Management: An Exploratory Case Study" (De Bernardi et al., 2019) highlights that even though museums have already adopted digitalisation, a systematic and holistic approach to digital innovation in museum organisation and management systems is still missing. The article presents an exploratory case study that examines the level of digitalisation necessary for museums to adopt in their communication strategies and "to recognise the logics hindering digital transformation in cultural heritage strategic management". The study focuses only on museums in Turin, Italy, and gathers data from various sources, including institutional reports, museum websites, social media, and semi-structured interviews with museum managers. The research findings show that, at the time of the survey, most museums in Turin were not using a structured approach to digital strategy.

The research article "Towards Digital Transformation: Lessons Learned from Traditional Organizations" (Loonam et al., 2018) provides a comprehensive view of the critical strategic and operational factors that need to be addressed in order to implement digital transformation initiatives successfully. The authors of the research article have created a framework that outlines the necessary managerial actions, which can serve as a guide for management and provide a comprehensive view of the critical strategic and operational factors that need to be addressed. The study identifies four important themes for traditional organisations implementing digital transformation: 1) business model innovation, 2) organisation, 3) understanding customer needs, and 4) integration of internal and external digital systems. The study also finds that three main business model innovations were present in the case analysis of digital transformations: creating new digital businesses, reconfiguring value delivery models, and rethinking value propositions. Thus, these two articles suggest that while digital transformation is necessary, there is a need for more research to develop systematic approaches to digital innovation, especially in traditional sectors like museums, and that a holistic approach to digital transformation is essential.

Conclusion

Museum business administration is responsible for developing and implementing digital strategies that align with the museum's goals and objectives. This can involve identifying and prioritizing digital initiatives that improve visitor engagement, streamline operations, and enhance revenue streams. They also play a key role in managing the financial aspects of digital transformation, such as securing funding, managing budgets, and monitoring return on investment. Additionally, museum business administrators are responsible for managing the museum's human resources, including staffing and training needs related to digital transformation. This may involve hiring and training new staff with expertise in digital technologies or upskilling existing staff to meet the changing needs of the museum.

Overall, the role of museum business administration in the digital transition is crucial in ensuring that the museum remains relevant, sustainable, and impactful in the digital age. They play a key role in driving innovation and change, balancing financial considerations, and ensuring the museum's long-term success.

The current topic of business models for museums and cultural heritage institutions in the digital age is a complex and multifaceted issue. While there are many opportunities for innovation and engagement with audiences, there are also challenges around the preservation of cultural heritage and equitable access to digital technologies. By addressing these challenges and developing new business models that prioritise authenticity, accessibility, and sustainability, museums and cultural institutions can continue to play a vital role in preserving and promoting our shared cultural heritage for future generations.

For even more detail and an in-depth literature review, additional sources should be sought that describe different business models used by museums and cultural heritage institutions in the digital age and how these models have evolved over time.

Additionally, it should be highly considered to conduct interviews with professionals in the field of museum and cultural heritage management to gather first-hand insights on the topic by asking them about their experiences with implementing digital strategies and how they have adapted their business models to accommodate the changing landscape of the digital age in business administration. By combining this literature review with primary research, we can gain a comprehensive understanding of the current state of business models for the operation of museums and cultural heritage institutions in the digital age. The study can then provide valuable insights into how these institutions can continue to evolve and remain relevant in an increasingly digital world.

As for additional research niches, the potential of artificial intelligence and machine learning in creating personalised and interactive experiences for museum visitors could be explored, as well as additional help in museum administration (e.g., museum management, marketing, accounting).

By leveraging AI technologies, museums can better understand the interests and preferences of individual visitors and tailor the visitor experience and museum administration effectiveness accordingly. This is an exciting and promising area of research that can help museums and cultural heritage institutions thrive in the digital age (Russo Spena & Bifulco, 2021).

Summarily, the current topic of business models for museums and cultural heritage institutions in the digital age highlights the need for continued innovation, adaptation, and collaboration between cultural heritage institutions, digital experts, and researchers. By embracing new technologies, developing new business models, and addressing the challenges and limitations, museums and cultural heritage institutions can remain relevant, engaging, and sustainable for generations to come.

Finally, while there are existing business models for museums and cultural heritage institutions in the digital age, there is still much research to be done in this field. Previous research has focused on identifying different models and strategies, but there is a lack of empirical research on their effectiveness and impact on visitor engagement and financial sustainability.

One limitation is that many of the existing business models have not yet been fully tested and evaluated for their effectiveness and sustainability over the long term. Additionally, there is still a lack of understanding of the specific needs and preferences of different audience segments and how these can be addressed through digital technologies and innovative business models.

Furthermore, the COVID-19 pandemic has accelerated the need for museums and cultural heritage institutions to adapt to the digital age, and there is a growing need for research on the long-term sustainability of these models in a post-pandemic world.

One limitation is that many of the existing studies are focused on case studies of individual museums or cultural heritage institutions rather than broader trends or patterns across the sector. This can make it difficult to draw general conclusions about the most effective business models for museums and cultural heritage institutions in the digital age.

Another limitation is that much of the existing research is focused on developed countries, and relatively little research is done on the challenges and opportunities faced by museums and cultural heritage institutions in developing countries.

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About the author

Marko Ljubič works as the undersecretary of the business management area at the Slovenian School Museum in Ljubljana. He graduated in history and pedagogy at the Faculty of Arts in Ljubljana. In 2007, he started working as a business secretary and completed a course in accounting. He started his PhD studies (Innovation and Sustainable Business Management in the Digital Society programme) at the Doba Faculty Maribor in 2022. In recent years, he has been working on digitisation and the gradual implementation of e-documenting and e-archiving in the museum's managerial and professional work. Hence, his research interests are innovation, technology, e-learning, and digital transformation in the cultural heritage sector. An author can be contacted at **marko.ljubic@solskimuzej.si**