CHAPTER 13

Digital Funding and Financing in Museums and Cultural Heritage

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1 Introduction

Museums are characterised by high levels of fixed costs (Frey & Meier, 2006), making them crucially dependent on a steady income, which has been historically ensured by public subsidies and traditional forms of private funding, such as sponsorships, philanthropy and patronage. In addition, North American museums, especially larger ones, have been relying on interest and endowment income (Temin, 1991).

Museums' access to traditional private financing, such as bank lending, depends on their collateral capacity, which is high for flagship museums with important assets, but more problematic for small and private museums (Shaked, 2022). In addition, private loans can represent an important source of funding for public museums, yet with the risk of exposing them to public criticism (Berg & Larsen, 2024). Lately, private wealth has fuelled the phenomenon of private art museums, which are

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C. Dalla Chiesa and A. Rykkja (eds.), *Cultural Funding and Financing*, Cultural Economics & the Creative Economy,
https://doi.org/10.1007/978-3-031-96696-5_13

directly established, sustained and controlled by the wealth of their funders, usually business or finance tycoons (Kolbe et al., 2022).

Compared to other cultural and creative sectors, museums have been less inclined to adopt innovative financing modes, such as private venture capital, individual angel investors, and networks (Prokůpek et al., 2023). A relative exception has been represented by the largest museums, which might dispose of a greater capacity to experiment new forms of financing, and dampen the associated possible risks (ICOM, 2021).

More recently, following other cultural and creative sectors, in particular non-profit ones, museums have increasingly embraced an entrepreneurial approach, also in their financing (Lazzaro & Noonan, 2021). To cope with structural market inefficiency marked by suboptimal allocation of resources, uncertain demand, and market failure (Loots et al., 2022), plus their relatively high fixed costs, museums are increasingly inclined to complement a decreasing traditional public support with a combination of funding modalities. Among other possible avenues of museums' financial sustainability, Prokůpek et al. (2023) have pointed to crowdfunding and blockchain technology as novel digital funding tools that may, besides digital content, constitute a new source of income.

Overall, financing avenues in the cultural and creative sectors are oriented towards collaborative funding, which goes beyond the traditional public-private separation in terms of stakes and modes, and allows for privatisation and hybridisation, as suggested by Loots et al. (2022). In such a context, the latest innovation in cultural financing and investment practices looks at an array of technology-driven and collaborative modalities and different sources, including crowdfunding, peer-to-peer lending platforms, pooled investments, such as incubators and accelerator finance, and digital fundraising technologies that facilitate new modes of asset finance and tokenised funding. These modalities can be enabled or supported by a variety of emergent digital technologies, such as online platforms, blockchain, the metaverse, artificial intelligence (AI), recommender systems, mobile applications, and gamification.

In the general domain of digital technologies, museums have noticeably been early adopters. Yet this has been for scientific—rather than financing—purposes, such as preservation, cataloguing and study of collections, followed by education and audience development (Srinivasan et al., 2009). In museums, similarly to other cultural and creative sectors, digital solutions can be applied to develop and differentiate the digital

offering and corresponding audiences, through the expansion and differentiation of cultural services and contents (e.g. new modalities to access new digital collections, configurations of new digital experiences, etc.), and hence expand sources of income. This perspective has been a significant concern of marketing and management research, specifically how social media, co-creation, and audience engagement enhance the value of museums and their income, which again have more-or-less impact on museums' fundraising, and hence financing (Najda-Janoszka & Sawczuk, 2023).

When applied to finance, digital solutions are aimed to expand funding sources, and secure additional resources and investments, including fostering the engagement of younger generations of donors and investors (Giachino et al., 2024). The main models of technology-based funding and financing include crowdfunding, blockchain, and licensing (Prokůpek et al., 2023). They can increase museums' efficiency, by reducing transaction costs of funding, as well as information asymmetries. The first instance is typically contributed by crowdfunding (Handke & Dalla Chiesa, 2022), while blockchain can reduce information asymmetries, particularly about provenance and authenticity (Fincham, 2019). If museums own endowment funds, they can recur to digital management platforms, to better track fund performance and compliance with donor restrictions,as exemplified by the Metropolitan Museum of Art in New York or the Museum of Contemporary Art in Los Angeles.[2]

Through an explorative approach, this chapter offers an original mapping of major incumbent digital financing models in the museums and heritage sector, shedding light on which factors lead museums to adopt innovative digital funding and financing models. By leveraging scholarly, industry, and media secondary data, each innovative model is illustrated by means of a real-world case study, namely, a museum, highlighting implied changes in the uptake, the main reasons behind these changes, and the effectiveness and efficiency of these innovative models. Since capacity constraints, as explained above, may favour larger museums in terms of uptake, the examined cases focus on smaller museums, also for the sake of suggesting possible modalities that enable other smaller and less resource-rich museums to take up some of these innovative financial models.

To more neatly account for funders' motivations, the presented models, and corresponding examples, are divided into, respectively, digital

funding and digital financing. The former covers digital models of financial support without an expected financial return, thus only expecting cultural and/or social benefits or impacts. The latter encompasses digital models of investment, where, instead, a monetary repayment of funds is expected (Betzler et al., 2021), at or below market values (Medda et al., 2021). For each financial model, the involved digital technologies are briefly introduced.

2 Digital Funding Models

Digital funding mechanisms are mainly operated by individual members of the museums' visitors or other individual stakeholders.[3] While some digital funding mechanisms are virtually available to any museum through outsourced dedicated platforms (e.g., crowdfunding), other mechanisms imply a certain technical, structural and financial capacity, which constitute entry barriers for especially smaller museums, similarly to other innovation adoptions (Camarero et al., 2011). Main digital funding models in museums and heritage include reward- and donation-based crowdfunding, contactless donations, digital payments for ticketing and purchases, and loyalty programs and digital tokens.

Reward- and Donation-Based Crowdfunding

In the cultural and creative sectors, reward- and donation-based crowdfunding are the commonest modes of crowdfunding (e.g. Rykkja et al., 2020). As crowdfunding is typically used to fund projects with even relatively low budgets, crowdfunding is virtually within the reach of cultural organisations of any size and capacity, especially when relying on existing specialised crowdfunding platforms (e.g. Kickstarter, GoFundMe, Indigogo, etc.). On the other hand, many major museums directly organise and manage crowdfunding campaigns on their own web platforms (Izzo, 2017).

As it has been highlighted in related theoretical and empirical literature, raising funds is not the only benefit of crowdfunding, as a whole body of direct and indirect benefits are contributed, including community involvement and interaction and co-creation with backers, fostering entrepreneurship and business skills, and democratisation of funding (Koch & Siering, 2015; Lazzaro & Nordgård, 2025). The additional social benefits of crowdfunding are particularly relevant for museums, as

they foster community engagement, and the promotion of their artistic missions (Najda-Janoszka & Sawczuk, 2024).

A successful case of a museum that raised substantial money through crowdfunding, while also fostering community involvement, interaction, co-creation with backers, and improving entrepreneurship skills, is the state museum for Christian art and culture Catharijne Convent in Utrecht, in the Netherlands. In 2021, the museum launched a crowdfunding campaign to restore an eighteenth-century Neapolitan nativity scene on its own crowdfunding platform (https://museumcatharijneconvent.creativefunding.nl). The campaign successfully raised more than €80,000 from 900 backers (Museum Catharijne Convent, 2021).

This campaign not only achieved its financial goal but also engaged the community in a meaningful way. The museum implemented a strategy known as "crowdkeeping", which focuses on nurturing relationships with backers long after the campaign has ended (Carr, 2014). This approach transformed one-time donors into lifelong supporters, enhancing their connection to the museum and encouraging ongoing participation in future initiatives. The campaign emphasised transparency and active participation, allowing backers to feel involved in the restoration process. By utilising social media effectively and maintaining communication with supporters, the museum created a sense of ownership among backers, which contributed to their commitment to the institution. This model exemplifies how crowdfunding can democratize funding for museums while simultaneously building a supportive community around them (Loots et al., 2024).

Noticeably, this case can rely on a favourable environment among cultural institutions and the population, as crowdfunding is quite developed in the Netherlands, in terms of campaigns turnover and money raised, and successful dedicated platforms also at national level, such as Voordekunst (De Voldere & Zeqo, 2017).

Contactless Donations

Contactless donations are a novel fundraising method that allows individuals to contribute to charities and other organisations by simply tapping their contactless-enabled debit or credit cards, or mobile payment applications, on a designated terminal. This approach has gained traction in various sectors, including museums and cultural heritage institutions,

as it aligns with an increasing trend towards using cashless transactions. Fostered by the post-COVID era, such digital transactions allow consumers to carry limited or no cash, favouring a better transparency, scalability and accountability in organisations (Ramya et al., 2017).

Contactless donations are flexible, as terminals can be placed in different locations, and convenient, as they are quick and easy to make, encouraging spontaneous giving (Csongrádi et al., 2018). Unlike cash donations, contactless contributions can be tracked and analysed, which allows museums to gather valuable data on donors for future fundraising strategies (Wright & Walmsley, 2022). Contactless donations also reduce possible risks associated with handling cash and fraud. At the same time, the security of contactless donations should be ensured by encrypting personal information about the individual donors (Gebken et al., 2021).

A successful case of a museum adopting contactless donations is the national museum of People's History in Manchester, United Kingdom. Their implementation of a contactless donation terminal at the front desk in 2019 to supplement cash donations has yielded significant results. The free-entrance People's History Museum experienced a rapid return on investment from their contactless donation terminal, recouping the initial costs in just 42 days. This swift financial recovery was complemented by an increase in contributions and visibility for the museum's fundraising efforts. The museum noted that weekends, particularly Fridays through Sundays, were the most lucrative days for donations, with a peak donation time between 1 and 2 pm (Turner, 2022).

Several factors contributed to the observed increase in donations. The contactless terminal was strategically located at the front desk, a high-traffic area where staff could encourage donations and greet visitors warmly. This positioning, accompanied by a modest suggested donation amount of £5, likely enhanced visitor engagement and willingness to donate (Wright & Walmsley, 2022). Thanks to the new technology, the museum gained valuable insights into donor behaviour, allowing them to tailor their fundraising strategies more effectively. For instance, understanding peak donation times enabled them to focus their efforts when visitors were most inclined to give. Finally, contactless payments provided a more convenient option for visitors who may not carry cash, aligning with broader trends towards digital transactions in society (Wilson, 2022).

Digital Payments for Ticketing and Purchases

Digital payments for ticketing and purchases in museums have transformed the visitor experience, operational efficiency, and financial performance (Calderon, 2025). Museums increasingly offer their visitors the possibility to book their tickets in advance, online or over the phone, by paying with their credit cards or via other digital payment methods. The integration of digital payment systems allows museums to implement timed entry booking operations, which help manage visitor flow and comply with capacity constraints and health guidelines. This system enables museums to set predefined capacity limits, ensuring a safe environment for visitors, while maintaining operational efficiency (Digital Culture Network, 2020). The use of online ticketing reduces wait times, enhances visitors' experience and satisfaction, and minimises the risk of overcrowding during peak hours. Online ticketing systems can generate more revenue by allowing advance purchases, reducing the likelihood of sold-out situations. Visitors can buy tickets virtually from anywhere, avoiding long queues at the entrance. Digital payments can also include museum merchandise and other services, including membership programmes, which increase museum's sales and revenues. In addition, digital systems facilitate the collection of visitor data, which can be used for future marketing strategies and improving services. On the other hand, this technology implies some challenges, as initial investments in digital infrastructure can be substantial. Moreover, staff must be trained to manage new systems effectively (Nikolaou, 2024).

A notable case of a museum successfully adopting digital payments for ticketing and purchases is the Royal Albert Memorial Museum & Art Gallery (RAMM) in Exeter, UK. This museum implemented an open-access strategy along with digital payment options, which significantly transformed its operations. Following the adoption of digital payment systems, RAMM observed a notable increase in visitor numbers. The ease of digital transactions encouraged more people to visit and engage with the museum's offerings. The integration of digital payments facilitated a rise in memberships, as visitors found it easier to sign up and pay online. This shift contributed to a more loyal audience base, enhancing community engagement and support for the museum (Farmer & Wallace, 2024).

Digital payment systems streamlined ticketing and purchase processes, reducing wait times and improving overall visitor experience. This efficiency led to better resource allocation within the museum, allowing staff to focus on enhancing visitor engagement rather than managing cash transactions. The combination of increased visitor numbers and memberships resulted in a more stable financial footing for RAMM. The museum reported expectations of greater overall income from diverse revenue streams beyond just ticket sales, thanks to enhanced visibility and engagement with its collections. By embracing digital payments, RAMM not only improved its operational model but also strengthened its role within the community as a modern cultural institution that values accessibility and innovation. This has fostered a sense of belonging among visitors, further solidifying their support for the museum (Li et al., 2024).

Loyalty Programs and Digital Tokens

Digital tokens in loyalty programs represent a transformative approach to customer rewards, leveraging blockchain technology to enhance the way businesses engage with their customers, as well as streamline operations. Digital tokens are cryptographic assets issued by businesses to reward customers for specific actions, such as making purchases or engaging with the brand. Unlike traditional loyalty points, which are often limited in use and can expire, these tokens are securely recorded on a blockchain, providing a more flexible and transparent system for managing rewards. Research in tourism has shown that tokenised rewards increase booking intentions to the hotel and the perceived values of a discount, besides enhancing the attractiveness of reward schemes for customers; although, such benefits hold with luxury hotels only and not for budget ones (Boukis, 2024).

This innovative model can allow museums to create digital tokens that incorporate various benefits, rewards, and membership privileges, making loyalty programs more appealing and efficient. Tokenisation can foster deeper connections between museums and their audiences. By using digital tokens, museums can gamify the experience, offering rewards for activities such as attending events or participating in discussions. For instance, Nimi, a Web3 tech startup, has developed a membership system where attendees earn tokens that can be redeemed for benefits. Nimi collaborated with the Goethe-Institut Lisbon, in Portugal, to create an innovative membership system that rewards participants

with tokens for their attendance. This initiative is designed to enhance engagement among younger audiences by incorporating gamification and loyalty models, allowing users to earn various benefits through their participation in events and activities at the institute (Nelson, 2024). Tokenised loyalty programs allow patrons to choose from a wider range of rewards. Instead of fixed rewards, tokenization enables customers to redeem tokens for various experiences or items, enhancing the perceived value of the rewards (Boukis, 2024). Digital tokens simplify the redemption process, allowing for instant and hassle-free access to rewards. This efficiency improves customer satisfaction and encourages more frequent participation in museum activities (Cadence, 2019).

Some museums are exploring decentralised autonomous organisations (DAOs), where token holders can influence decision-making processes regarding exhibitions and programming. This model not only empowers patrons but also creates a sense of ownership among community members (Nelson, 2024). Blockchain technology ensures that all transactions related to loyalty programs are transparent and secure. This builds trust with patrons who can see how their engagement translates into tangible benefits (Wang et al., 2019).

Real-world examples in the museum and heritage sector are still limited. For instance, tokenised loyalty programs were implemented by the Museum of Kansas City Chiefs quarterback Patrick Mahomes in the United States, which showcases sports memorabilia through NFTs (Non-Fungible Tokens) and physical artefacts on its website (https://www.museumofmahomes.com). Tokenised rewards have also been used by a major international museum, in combination with gamification and NFTs. In 2022, the Museum of Fine Arts in Boston has launched a collection of NFTs featuring rarely exhibited Impressionist pastels by artists such as Monet and Degas. This initiative, in collaboration with the French startup LaCollection, aimed to raise funds for the conservation of two Degas paintings: *Edmondo and Therese Morbilli* and Degas's *Father Listening to Lorenzo Pagans Playing the Guitar*. The museum gamified the purchasing experience by offering rewards based on the number of NFTs bought: purchase of two NFTs to receive a third for free; buying three NFTs to access to an NFT of one of the conserved Degas paintings; and a special "Secret Box" containing one of three selected pastels available during the sale (Museum of Fine Arts Boston, 2022).

3 Digital Financing Models

This section covers digital financing models that more explicitly imply a monetary return for investors, and that have also been utilised by in museum and organisations in the cultural heritage sector, although to a limited extent, and with particular features. The considered mechanisms include investment crowdfunding, non-fungible tokens (NFTs) and blockchain.

Investment Crowdfunding

Models of crowdfunding other than reward and donation include lending, equity, and royalty crowdfunding, more generally grouped under investment crowdfunding (see e.g., Belleflamme et al., 2015). Lending crowdfunding, also known as debt-based crowdfunding or peer-to-peer lending, involves raising debt capital by dividing loans among multiple investors. Equity crowdfunding involves selling company shares to raise venture capital online. This model establishes a long-term relationship between companies and investors. In royalty-based crowdfunding, investors receive a predefined percentage of future revenue generated by the project in exchange for their investment, without acquiring ownership rights.

Investment crowdfunding is underutilised in the nonprofit cultural sector (e.g., Handke & Dalla Chiesa, 2022), especially within the heritage sector, where it remains an exception (Jelinčić & Šveb, 2021). This pattern is also reflected by the scarcity of literature dedicated to the topic. Borin and Donato (2023) present a successful, and rare, case of equity crowdfunding by a private heritage site in France, where financial success is accompanied by a more participatory model of cultural management. The study could not, however, access information on potential dividends or the rate of return on investments. Yet it highlights main success factors, which essentially rely on an effective communication not only towards the media but also, more specifically, towards investors, clearly and explicitly informing them about the percentage of offered equity, how the funds were spent, and a diffused involvement of shareholders in the governance of the project, also through a dedicated platform. An additional success factor was the explicit support by the heritage civil society, contrary to the professional financial sector. Noticeably, investors were not professional and were not used to this novel investment mechanism.

From this case, we can possibly argue a similarity with the variety of benefits offered by reward- and donation-based crowdfunding beyond monetary ones. Indeed, investment crowdfunding applied to cultural heritage can develop additional forms of returns other than monetary ones. Remarkably, sense of belonging and supporting a good cause are more important drivers than profitability for equity backers (Marchegiani, 2018).

Non-Fungible Tokens (NFTs) and Blockchain

NFTs are unique digital assets that represent ownership of a specific item, which can be digital (like digital art, music, or videos) or physical (such as real estate, fine art, or luxury fashion). NFTs are used in various sectors, including art, gaming, fashion, and the metaverse. They enable creators to monetise digital content and provide a new form of digital ownership, conferring scarcity value. NFTs are stored on a blockchain, ensuring their uniqueness and authenticity. NFTs are non-fungible, meaning they cannot be exchanged for another identical asset. They are also cryptographically verifiable and easily transferable. Blockchain technology authenticates and validates NFTs, providing a secure and transparent way to prove ownership and provenance. Smart contracts, typically built on platforms like Ethereum, facilitate the creation, purchase, and sale of NFTs. Blockchain is a decentralised, distributed ledger that records transactions across many computers. It ensures transparency, security, and immutability of data. NFTs emerged in 2014 and exploded in 2021 (see, e.g., Wang et al., 2021).

Artworks and other items in museums' collections are assets that are worth a considerable value and can be digitally exploited through NFTs, to generate additional financial streams paid by cryptocurrencies, At the same time, they can attract novel segments of tech-loving audiences. NFTs offer an efficient way to raise funds without deaccessioning physical artworks. NFTs allow museums to maintain their collections, while generating revenue from digital representations. In 2021, NFTs were also the object of the first exclusively dedicated online auction, at Christie's. That same year, a major flagship museum, the Uffizi Galleries, in Florence, Italy, organised the first sale of NFTs after its masterpiece by Michelangelo, the *Tondo Doni*, in its collection, to overcome financial problems due to the COVID pandemic. They were shortly followed by the Hermitage in Saint Petersburg, Russia, and several other major

international museums. More recent developments include the British Museum partnering with international specialised technology companies, to create and auction off NFTs based on artworks from their collection (in collaboration with LaCollection), as well as interactive NFT experiences (in collaboration with Ethereum-based metaverse gaming platform The Sandbox) (Hirschmiller, 2023).

On a smaller scale, the Whitworth Art Gallery at Manchester University, UK, represents a unique best practice in terms of social, technological and environmental innovation in the uptake of NFTs and blockchain in its fundraising. In 2021, this museum, which is dedicated to using art for social change, teamed up with technological partner Vastari, and minted and sold an edition of 50 NFTs of William Blake's watercolour etching, *The Ancient of Days*. The proceeds were used to fund socially beneficial projects in education, health, environment, and social cohesion, which also fostered a sense of shared ownership and social responsibility, attracting a broader audience. The technological innovation was that the Whitworth used a spectrographic scan of artwork instead of a direct digital replica, which added a unique twist and maintained the integrity of the original artwork. In addition, the NFT was minted on the ecofriendly NFT marketplace Hic et Nunc (Bailey, 2021; Harris, 2021).

Despite their potential, NFTs face various challenges, such as regulatory uncertainty, environmental concerns due to energy consumption, and market volatility. Regulation on NFTs is lagging, as usually happens with fast-paced technological innovation. Moreover, regulatory frameworks lack international harmonisation. The use of NFTs in the heritage sector is particularly challenged by copyrights, and the possible redefinition of their perimeter. Moreover, OpenGLAM free licensing of artworks images introduced by flagship museums, has already been the subject of malicious use by the Global Art Museum (GAM) (Valeonti et al., 2021).

Other Models of Digital Financing

Overall, cultural and creative sectors experience difficulties in accessing forms of investment, even traditional ones, such as banks and venture capital (Di Novo et al., 2022). Whether this is also the case for museums depends on their financial structures. Running costs (including salaries, rents and other fixed costs) are usually prevalent in museums. Hence, museums can be less frequently the object of project funding, which

is rather typical of startups and artists' projects, and emerging novel technology-driven financial instruments. Investment instruments, such as mini bonds and intellectual-property investment funds, are more common in social entrepreneurship (Loots et al., 2022).

We might question whether emergent instruments from entrepreneurial finance, typically designed to help young innovative firms (Block et al., 2018), including in the creative industries, could also be applied for the purpose of funding and financing museums, given certain characteristics of these tools. For instance, governmental venture capital funds are driven by social payoffs and positive externalities to the society. These motivations may also apply in the case of museums. Yet the source of these funds is public, as are more traditional and long-validated subsidies and grants to museums. Also, social venture funds are driven by non-financial goals, and their source is mainly private. However, these funds also aim at a reasonable financial return, delivered by for-profit, enterprises, which museums are usually not. For artworks still under copyrights, museums could use intellectual-property-backed debt funding, where copyrights could be exploited as a source of capital collateralised by the stream of revenues deriving from licensing or royalty agreements involving portfolios of copyrights. Although the trade-off is not straightforward, as this instrument is characterised by high structuring costs (Block et al., 2018), this may explain why it is still not practised by museums.

4 Conclusions

Notwithstanding museum's initial reluctancy to experiment and take risks in the uptake of innovative digital financial instruments, museum's idiosyncratic financial structure, and the COVID pandemic have fostered their venturing in this novel field in the last years. This chapter contributed an original mapping of examples of existing practices beyond flagship global museums, focusing instead on the context of smaller museums. Evidence points to an effective and efficient uptake of a variety of (yet) unestablished digital financial models, where digital funding is prevalent, compared to digital financing.

Financial support to museums and cultural heritage is confirmed to be especially motivated by reasons that substantially complement a monetary return, also in the case of digital financing, such as a sense of

ownership, community involvement, interaction, co-creation, and playfulness. In this way, museums can reach out to new audiences and build the audience's loyalty. Noticeably, such reasons may support an effective adoption of innovative digital financial instruments also in other cultural sectors, especially by nonprofit cultural organisations, as it is already the case with, for example, crowdfunding. This chapter has also shown how some financial models can be virtually adopted by museums of any size and capacity, as it is the case of reward- and donation-based crowdfunding that is operated on available specialised platforms. Yet the implied entrepreneurial skills (Lazzaro & Noonan, 2021) increasingly demand partnerships with specialised technology providers, especially for more complex technologies, and their combinations, as it is the case of NFTs, impacting museums' business models.

Remarkably, the application of digital solutions in the cultural and creative sectors presents important challenges, such as possible revisions of national laws and regulations (Jung, 2025), and their harmonisation (Lazzaro & Noonan, 2020), as well as individuals' sensible data protection (Vuković et al., 2023), and ways of bridging the digital divide (Mihelj et al., 2019). An ethical and fair use of digital technologies calls for the respect of sensible data of museums' audiences, funders and investors, and inclusive digital systems, which are accessible to all, including those with disabilities (see, e.g., Rouhani, 2023). Moreover, the monetisation of digital content can conflict with the increased political and societal demands for museums to make their digital content openly available (Wiedemann et al., 2019). From an economic perspective, while novel technology-driven models of financing can reduce traditional transaction costs and lower asymmetries, they can generate new transaction costs and other costs, such as developing the required skills to operate such systems, and the initial investment in setting up the supporting systems and infrastructure technologies (Loots et al., 2022).

5 Competing Interests

The writing of this chapter was supported by a grant from the Research Council of Norway [301291].

Notes

1. Current platforms used also by museums are Fundriver (https://fundriver.com), and Endowment Solutions (http://www.endowmentsolutions.com).
2. Noticeably, the two groups do not necessarily overlap, as funders can be non-visitors, similarly to traditional "analogue" funding (see, e.g., Lazzaro & Voss, 2010).

References

Bailey, J. (2021, July 28). Why Museums Should Be Thinking Longer Term About NFTs. *Artnome*. https://www.artnome.com/news/2021/7/28/why-museums-should-be-thinking-longer-term-about-nfts

Belleflamme, P., Omrani, N., & Peitz, M. (2015). The economics of crowdfunding platforms. *Information Economics and Policy, 33*, 11–28.

Berg, I. U., & Larsen, H. (2024). Public art and private wealth: the controversial collaboration between the national museum in Norway and Fredriksen Family Art Company Ltd. *Museum Management and Curatorship*, 1–18.

Betzler, D., Loots, E., Prokůpek, M., Marques, L., & Grafenauer, P. (2021). COVID-19 and the arts and cultural sectors: Investigating countries' contextual factors and early policy measures. *International Journal of Cultural Policy, 27*(6), 796–814.

Block, J. H., Colombo, M. G., Cumming, D. J., & Vismara, S. (2018). New players in entrepreneurial finance and why they are there. *Small Business Economics, 50*(2), 239–250.

Borin, E., & Donato, F. (2023). Equity crowdfunding for cultural heritage: Some insights from a French case study. *International Journal of Entrepreneurship and Small Business, 48*(1), 10–26.

Boukis, A. (2024). The effect of tokenized rewards on customer loyalty programs. *Annals of Tourism Research, 109*, Article 103851.

Cadence (2019, March 20). What Is A Token Redemption? *Medium*. https://medium.com/@withcadence/what-is-a-token-redemption-df282fd92f88

Calderon, A. A. (2025). Digital Payments and their Role in Enhancing Financial Transactions Efficiency. *International Journal of Economics and Financial Issues, 15*(1), 182–189.

Camarero, C., Garrido, M. J., & Vicente, E. (2011). How cultural organizations' size and funding influence innovation and performance: The case of museums. *Journal of Cultural Economics, 35*, 247–266.

Carr, M. (2014, December 19). Transforming Crowdfunding Backers into Lifelong Museum Supporters. *MuseumNext*. https://www.museumnext.com/article/transforming-crowdfunding-backers-into-lifelong-museum-supporters/

Cristobal-Fransi, E., Ramón-Cardona, J., Daries, N., & Serra-Cantallops, A. (2021). Museums in the digital age: An analysis of online communication and the use of e-commerce. *Journal on Computing and Cultural Heritage, 14*(4), 1–21.

Csongrádi, G., Reicher, R., & Takács, I. (2018). Latest Trends and Technologies at the Field of Nonprofit Fundraising. *International Journal of Contemporary Management*, 17(4).

De Voldere, I., & Zeqo, K. (2017). *Crowdfunding: Reshaping the Crowd's Engagement in Culture*. European Commission.

Di Novo, S., Fazio, G., Sapsed, J., & Siepel, J. (2022). Starving the golden goose? Access to finance for innovators in the creative industries. *Journal of Cultural Economics, 46*(2), 345–386.

Digital Culture Network. (2020). *Introduction to ticketing for museums and galleries*. Arts Council England. https://digitalculturenetwork.org.uk/wp-content/uploads/2020/08/Introduction-to-ticketing-for-museums-and-galleries-08.07.20_0-1.pdf

Farmer, F., & Wallace, A. (2024). Making the Business Case for Open Access. *glam-e lab*. https://www.glamelab.org/files/making-the-business-case-for-open-access-report-white-paper.pdf

Fincham, D. (2019). Assessing the viability of blockchain to impact the antiquities trade. *Cardozo Arts & Entertainment Law Journal, 37*, 605.

Frey, B.S., & Meier, S. (2006). The Economics of Museums. In Ginsburgh, V.A., & Thorsby, D. (Eds), *Handbook of the Economics of Art and Culture* (Vol. 1, pp. 1017–1047). Elsevier.

Gebken, L., Drews, P., & Schirmer, I. (2021). Stakeholder and value orientation in digital social innovation: designing a digital donation concept to support homeless neighbors. *Proceedings of the 54th Hawaii International Conference on System Sciences*.

Giachino, C., Battisti, E., Rovera, C., & Stylianou, I. (2024). Young travelers: culture's lovers and crowdfunding supporters. *Management Research Review*.

Handke, C., & Dalla Chiesa, C. (2022). The art of crowdfunding arts and innovation: The cultural economic perspective. *Journal of Cultural Economics, 46*(2), 249–284.

Harris, G. (2021, July 23). The Whitworth Gallery in Manchester Mints a William Blake NFT in Aid of Community Causes. *The Art Newspaper*. https://www.theartnewspaper.com/2021/07/23/the-whitworth-gallery-in-manchester-mints-a-william-blake-nft-in-aid-of-community-causes

Hirschmiller, S. (2023, July 27). The British Museum Will Enter the Metaverse via 'The Sandbox'. *Decrypt*. Available on: https://decrypt.co/150405/british-museum-enter-metaverse-via-sandbox

International Council of Museums (ICOM). (2021). *Museums, Museum Professionals and COVID- 19: Third Survey*. ICOM. https://icom.museum/wp-content/uploads/2021/07/Museums-and-Covid-19_third-ICOM-report.pdf

Izzo, F. (2017). Stakeholders and Museum Crowdfunding. *Modern Economy, 8*(04), 518.

Jelinčić, D. A., & Šveb, M. (2021). Financial sustainability of cultural heritage: A review of crowdfunding in Europe. *Journal of Risk and Financial Management, 14*(3), 101.

Jung, Y. (2025). Do NFTs Merit a Change in the IP Legal Paradigm? An Application of the Theory of Punctuated Equilibrium. In Lazzaro, E., Moureau, N., & Turpin, A. (Eds), *Law and Finance in International Art Markets: Past and Present*. Routledge.

Koch, J.A., & Siering, M. (2015). Crowdfunding success factors: The characteristics of successfully funded projects on crowdfunding platforms, *Proceedings of the 23rd European Conference on Information Systems (ECIS 2015).*

Kolbe, K. J., Velthuis, O., Aengenheyster, J., Rozenbaum, A. F., & Zhang, M. (2022). The global rise of private art museums a literature review. *Poetics, 95*, Article 101712.

Lazzaro, E., & Noonan, D. (2020). Cultural and creative crowdfunding: A comparative analysis of regulatory frameworks in Europe and the USA. *International Journal of Cultural Policy, 27*(5), 590–606.

Lazzaro, E., & Noonan, D. (2021). The contribution of crowdfunding regulation to cultural entrepreneurship in a supportive ecosystem. In *Cultural Initiatives for Sustainable Development: Management, Participation and Entrepreneurship in the Cultural and Creative Sector* (pp. 401–424). Springer, Book series: Contributions to Management Science

Lazzaro, E. & Nordgård, D. (2025). Crowdfunding visual artists: Alternative or complementary financing mode? In Lazzaro, E., Moureau, N., & Turpin, A. (Eds), *Law and Finance in International Art Markets: Past and Present*. Routledge.

Lazzaro, E., & Voss, Z. (2010). *Assessing Citizens and Visitors' Awareness*. Sharing of Meaning and Engagement in Dallas Public Art.

Li, J., Zheng, X., Watanabe, I., & Ochiai, Y. (2024). A systematic review of digital transformation technologies in museum exhibition. *Computers in Human Behavior*, 108407.

Loots, E., Betzler, D., Bille, T., Borowiecki, K.J., & Lee, B. (2022). New forms of finance and funding in the cultural and creative industries. Introduction to the special issue. *Journal of Cultural Economics*, 46(2), 205–230.

Loots, E., Piecyk, K., & Wijngaarden, Y. (2024). At the juncture of funding, policy, and technology: How promising is match-funding of arts and culture through crowdfunding platforms? *International Journal of Cultural Policy, 30*(1), 118–134.

Marchegiani, L. (2018). From Mecenatism to crowdfunding: Engagement and identification in cultural-creative projects. *Journal of Heritage Tourism, 13*(2), 143–151.

Medda, F., & Lipparini, F. (2021). Impact investment for urban cultural heritage. *City, Culture and Society, 26*, Article 100413.

Mihelj, S., Leguina, A., & Downey, J. (2019). Culture is digital: Cultural participation, diversity and the digital divide. *New Media & Society, 21*(7), 1465–1485.

Murphy, O. (2018). Coworking spaces, accelerators and incubators: Emerging forms of museum practice in an increasingly digital world. *Museum International, 70*(1–2), 62–75.

Museum Catharijne Convent. (2021). *Jaarverslag 2021.* https://www.catharijneconvent.nl/documents/298/Jaarverslag__Museum_Catharijneconvent_2021.pdf

Museum of Fine Arts Boston. (2022, June 23). MFA Boston and LaCollection.io Offer NFT Collection of Rarely Seen 19th-Century French Impressionist Pastels. Museum of Fine Arts Boston. https://www.mfa.org/press-release/mfa-boston-and-lacollectionio-offer-nft-collection

Najda-Janoszka, M., & Sawczuk, M. (2023). Exploring the barriers of multi-stakeholder value co-creation–the museum context. *Journal of Organizational Change Management, 36*(4), 603–620.

Najda-Janoszka, M., & Sawczuk, M. (2024). Crowdfunding in the museum context: Exploring alternative approaches to financial support. *Entrepreneurial Business and Economics Review, 12*, 83–97.

Nelson, G. (2024, June 5). A Tech Accelerator Helps Major Museums Develop Blockchain Projects to Stay Relevant to Younger Audiences. *ArtNews*. https://www.artnews.com/art-news/news/blockchain-we-are-museums-tech-accelerator-museums-1234708860/

Nikolaou, P. (2024). Museums and the Post-Digital: Revisiting Challenges in the Digital Transformation of Museums. *Heritage, 7*(3), 1784–1800.

Pahl-Wostl, C., Basurto, X., & Villamayor-Tomas, S. (2021). Comparative case study analysis. In R. Biggs, A. De Vos, R. Preiser, H. Clements, K. Maciejewski, & M. Schlüter (Eds.), *The Routledge handbook of research methods for social-ecological systems* (pp. 282–294). Routledge.

Prokůpek, M., Loots, E., & Betzler, D. (2023). Emergency or emerging financing strategies of art museums in the context of a pandemic? *Museum Management and Curatorship, 38*(5), 530–547.

Ramya, N., Sivasakthi, D., & Nandhini, M. (2017). Cashless transaction: Modes, advantages and disadvantages. *International Journal of Applied Research, 3*(1), 122–125.

Rouhani, B. (2023). Ethically Digital: Contested Cultural Heritage in Digital Context. *Studies in Digital Heritage, 7*(1), 1–16.

Rykkja, A., Maehle, N., Munim, Z. H., & Shneor, R. (2020). Crowdfunding in the cultural industries. In R. Shneor, L. Zhao, & B. T. Flåten (Eds.), *Advances in Crowdfunding* (pp. 423–440). Palgrave Macmillan.

Shaked, N. (2022). *Museums and wealth: The politics of contemporary art collections*. Bloomsbury Publishing.

Srinivasan, R., Boast, R., Furner, J., & Becvar, K. M. (2009). Digital museums and diverse cultural knowledges: Moving past the traditional catalog. *The Information Society, 25*(4), 265–278.

Temin, P. (1991). An economic history of American art museums. In M. Feldstein (Ed.), *The economics of art museums* (pp. 179–194). University of Chicago Press.

Turner, D. (2022, February 7). "Tap" into your Digital Fundraising Goals with Contactless Donations. MuseumNext. https://www.museumnext.com/article/tap-into-your-digital-fundraising-goals-with-contactless-donations/

Valeonti, F., Bikakis, A., Terras, M., Speed, C., Hudson-Smith, A., & Chalkias, K. (2021). Crypto collectibles, museum funding and OpenGLAM: Challenges, opportunities and the potential of Non-Fungible Tokens (NFTs). *Applied Sciences, 11*(21), 9931.

Vuković, M., & Štefanac, T. (2023). Digital Cultural Heritage, Cybersecurity, and the Human Factor. *Preservation, Digital Technology & Culture, 52*(4), 129–141.

Wang, L., Luo, X. R., & Lee, F. (2019). Unveiling the interplay between blockchain and loyalty program participation: A qualitative approach based on Bubichain. *International Journal of Information Management, 49*, 397–410.

Wang, Q., Li, R., Wang, Q., & Chen, S. (2021). Non-fungible token (NFT): Overview, evaluation, opportunities and challenges. *arXiv preprint* arXiv: 2105.07447.

Wiedemann, J., Schmitt, S., & Patzschke, E. (2019). Responding to open access: How German museums use digital content. *Museum and Society, 17*(2), 193–209.

Wilson, B. (2022). Innovation in Fundraising Technology: The Rise of Contactless Giving. *Culturehive*. https://www.culturehive.co.uk/digital-heritage-hub/resource/engagement/innovation-in-fundraising-technology-the-rise-of-contactless-giving/

Wright, M., & Walmsley, B. (2022). Using digital for creative fundraising. In M. Wright, B. Walmsley, & E. Simmons, (Eds.), *Fundraising in the Creative and Cultural Industries* (pp. 255–277). Routledge.