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REPORT

DIGITAL-FIRST AND METAVERSE SOLUTIONS FOR MUSEUMS

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ABOUT US

The Balboa Park Online Collaborative (BPOC) is a nonprofit technology collaboration that connects audiences to art, culture, and science. We live and breathe cultural organizations, and develop strategic frameworks that re-invent institutions to be more resilient and sustainable. BPOC is here to help your organization. Learn more at www.bpoc.org.

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ABSTRACT

This report is a concise guide to help cultural institutions and museums develop digital-first and metaverse solutions in the wake of the COVID-19 pandemic. The report is for executive boards, leadership, funders, staff, and partners of museums. The report discusses concepts such as “digital-first”, which is the increasing prioritization of digital programming over physical programming, and the Metaverse, which combines aspects of the digital and physical worlds, to interact with friends and colleagues.

EXECUTIVE SUMMARY

While there is a range of critical social and cultural challenges facing museums, they must acknowledge, embrace and invest in forward-thinking initiatives. We have known for some time that increased digital engagement and interaction should be a more prevalent strategy, but is becoming more of a necessity if we are to attract more diverse and younger audiences and create sustainable futures. Thirty years ago, innovative museums launched their first websites, now every museum has one, and for most, website visitation significantly outpaces attendance. We are facing a similar inflection point with the Metaverse. Museums must begin preparing for the inevitable.

1. Digital-first and metaverse-capable solutions should be the top priorities for institutions in continuously uncertain and unstable conditions.
2. The lasting digital accomplishments in museums are: digitization, open access, digital publication, online learning, e-commerce and intellectual property.
3. Museums should transition from a project-based digital mentality to program-based, which builds sustainably on core assets, operations, and resources.
4. Immediate priorities for museums are embracing on-demand and subscription-based business models, frictionless customer service, and new technologies such as AI, blockchain, video games, and the metaverse, among others.

5. A customer-centric mindset focused on providing digital-first and metaverse-ready products and services built on collections and content is essential for museums' sustainability and survival.

STATE OF MUSEUMS DURING THE COVID-19 PANDEMIC

A common perception is that museums responded well to the difficult conditions of the pandemic with digital solutions. However, the apparent success of these efforts was illusory, as they were not part of holistic strategic approaches. As the pandemic continued, the majority of museums neglected to appropriately invest in digital transformation to serve their constituents and become sustainable. The COVID-19 pandemic was not the only and certainly not the last challenge facing museums. In continuously uncertain and unstable conditions, digital-first and metaverse-capable solutions should be top priorities for cultural institutions.

Museums have also struggled to adequately respond to other persistent existential threats such as climate change, dynamic and volatile economic conditions, and public safety, let alone changes in technology. There are governance and leadership struggles across the field that continue to leave institutions vulnerable rather than resilient. Museums need to rescope offerings within the limits of their financial means and operational capabilities while investing prudently in solutions that scale engagement and economic return now and in the future through technology.

Museums can and should secure their futures by enhancing capacity for self-sustainability, undergoing business transformations, and driving earned revenue.

PRE-PANDEMIC STATE OF MUSEUMS

Pre-pandemic, the museum field was stumbling as a result of the economic and industry challenges lingering from the first two decades of the 21st century, such as the Great Recession. Many institutions were still working to understand social media, improve marketing initiatives, develop mobile apps, explore digital humanities scholarship, and implement seemingly novel hardware installations and tools to attract audiences. In some cases, the field's approach was project-based, driven by the priorities of funders or staff rather than customer needs or desires. Some museums invested in practice-based labs to bring applied learning, interdisciplinary collaboration, and deliberate experimentation to help their institutions thrive. In several cases, these critical technology development efforts were prematurely abandoned or insufficiently invested in to be robust over time. As a result, few of the labs remain in museums. Some have been reconfigured in different locations, with different personnel and objectives.

In short, the field was not well prepared or positioned to weather the challenges that arose in December 2019. Even before the pandemic, financial constraints had led to declines in blockbuster exhibitions and loan shows in favor of permanent collection shows. Capital or expansion campaigns as well as traditional physical and small reach programs continued at the neglect of digital transformation, leaving institutions with limited options to adjust when

shutdowns occurred. Public engagement and education efforts over-invested in onsite and in-person programs, disregarding the full potential scalability of digital-first opportunities. The pandemic exacerbated pre-existing problems. Any number of indicators demonstrate that onsite museum experiences are in decline or stagnant. It is time for serious rethinking of the museum experience powered by digital-first solutions and the metaverse, an emerging environment of physical and digital reality that is persistent and provides enhanced immersive experiences.

In spite of the challenges, some significant accomplishments did occur. While they may have been less visible to the public, these initiatives are the platforms of possibility for future capabilities that have helped institutions continue during the pandemic and give hope for the future. Some areas of success include:

- ***Digitization:*** Many museums invested in the digitization of their collections, conservation, archives, and research materials in 2D and 3D formats. Digitization is an essential aspect of the preservation of collections. Additionally, the digitization of content production methods has brought museums to more audiences than ever before, with digital audiovisual assets enjoyed on mobile devices and new forms of interactivity, including mixed reality and wearable technology. Importantly, many museums implemented database systems to manage and store data and content, which can publish assets to other applications and services with automated workflows. With application program interfaces (APIs), data has become more accessible and usable with formats, like comma-separated value or JSON files, on GitHub. Museums created collections online platforms, and shared them with third-party aggregators, to give increased access to collections at the stroke of a key or voice search with essential data and enhanced context.
- ***Open Access:*** Leading institutions made available significant portions of their collections, data, and digital assets of cultural resources in the public domain with the Creative Commons Zero Public Domain Dedication. Open Access has enabled a broad community of users to remix, create, and invent new culture, content, and products for educational and commercial purposes. Open Access programs at these institutions and others have reached billions of users, especially through Wikimedia platforms and in partnership with the Internet Archive, and are wellsprings of a thriving digital and metaverse culture.
- ***Digital Publication:*** Many museums developed digital publishing programs, iterating on new formats and form factors, to be more consumable by the public through digital devices. In some cases, museums made available their back catalogs of out-of-print works. Other museums began to offer new publications on their websites and popular third-party platforms like Amazon Kindle and Google Books, enabling potential discoverability, research, revenue, and readership. Experimentation with web-based publishing and long-form blogs offered wider distribution and measured engagement than traditional print publications.

- **Online Learning:** A variety of museums, and their partners, developed new online educational resources in the form of online publications, massive open online courses (MOOCs), digital badges and credentials for asynchronous and synchronous training programs, teaching and learning toolkits. These learning resources became essential for parents, teachers, students, and adults during the pandemic, and they merit significant and continued investment from institutions. Online Learning resources have added value when matched to local, state, and national standards, like the Common Core, and professional standards from other standards bodies.
- **E-Commerce and Intellectual Property:** Museums have invested in e-commerce solutions to bring collections-inspired collaborations and products to enthusiastic customers worldwide. The gift shop now has no exit as it persists in users' social media feeds, email inboxes, and interactive environments through QR codes or augmented reality applications. Museums, too, are beginning to consider the impacts of climate change in their merchandising offerings with respect to materials, packaging, logistics, and shipping. Focus now will shift to opportunities with digital goods. Importantly museums are using intellectual property, including brand and trademark, along with rights-reserved works from collections or collaborations with contemporary artists, to reach customers in different markets.

MUSEUM TECHNOLOGY AS A PROGRAM; NOT A PROJECT

After the initial shock of the pandemic, it has become clear that museums should transition from a project-based digital mentality to program-based, which builds on core assets, operations, and resources sustainably. Technology should be considered from dynamic and holistic approaches to strategy for near- and long-term opportunities for resilience and success.

Before beginning any technology initiative, institutions should ask themselves some critical questions:

- How does this initiative serve our mission, values, and customers? Should we do this at all? What do we stop doing to do this instead?
- How will this be paid for over time? If the initiative is temporarily funded, what is our contingency for when the funding runs out, so we don't have abandoned or dead content, especially if our customers have come to rely on it?
- How does this initiative map to our current and future capabilities in terms of infrastructure, staff, contractors, and content development? What are the integration, migration, or sunset plans?
- What is this initiative's potential to meet goals for engagement and drive earned revenue?
- Who are our benchmarks, partners, and peers for success *not* from the museum sector?
- Who are the agencies and companies with market success who can be our advisors and partners to deliver scalability and successful implementation?

WHAT'S NEXT FOR MUSEUM TECHNOLOGY?

Institutions need to embrace on-demand and subscription-based business models quickly. Museums should offer products and services akin to and familiar to customers in their daily digital interactions through communication, gaming, mobile, product delivery, and streaming service providers. These business model approaches can be understood in the tradition of the atheneum, print clubs, or subscription library business models. In these business models, members pay for access to the organization's contents and facilities provided, managed, and stored. A subscription model offers customers access to the content and experiences they desire at different price points. These business models can include open access and rights reserved content to use and view at no charge as part of a blended set of offerings that museums can deploy to attract, convert, and retain customers while serving their missions. Museums can also work to develop the creator economy and Web3, the next generation of the internet characterized by greater dimensions of connectivity and ubiquity powered by artificial intelligence, blockchain, and decentralization technologies, among other aspects.

Furthermore, institutions should offer a proactive customer experience that is as frictionless as possible. Museums can offer enhanced purchase and ticketing experiences, including online payments, while offering quality customer service via chat, email, forums, etc., to address customer needs responsively. Earned revenue to support the mission—primarily through the acquisition of valuable assets, such as collections—and publication of digital and metaverse content must be prioritized with an eye toward reducing financial support from increasingly unstable sources.

There are important technologies that museums should be seeking to understand and prudently implement:

- **Automation and Robotics:** Driven by persistent health and safety concerns, and workforce shortages, museums will need to strategically determine which tasks can be automated through software-based and self-service solutions or even performed by robots. Automation and robotics applications might be relevant for customer service, food and beverage, retail, and security scenarios, where limited to no human contact keeps customers and staff safe, improves operational efficiency, and provides more significant integrated data-informed insights to museum leadership. It's important to note that automation and robotics initiatives must be undertaken concurrently with reskilling and upskilling opportunities for existing workers to support digitization, content creation, and new business models. Ethical considerations and discernment are required.
- **Artificial Intelligence and Machine Learning:** Museums must leverage customer and collections data to power next-level intelligence, keeping pace with the innovations in artificial intelligence and machine learning. Innovations in these areas should be equally concerned with and publicly address ethics, accessibility, legal frameworks, privacy, and transparency.

- ***Blockchain, Cryptocurrency, and Non-Fungible Tokens:*** New content, cultures, and economies are being built on blockchain, cryptocurrency, and non-fungible tokens (NFTs). The growth, rising adoption, and interest in these technologies re-affirm the importance of museums stewarding and utilizing their assets to engage customers through digital goods and generate capacity for earned revenue. Museums should be working considerately with financial, legal, and cybersecurity advisors, among others, to bolster themselves and their customers as related to hacking and volatile market conditions that can accompany these technologies.
- ***Digital Twins, Video Games, and the Metaverse:*** Museums should rapidly invest in the next wave of digitization that moves beyond 2D digital images into 3D models, and more to participate in video games and the growing metaverse of mixed reality applications. Rather than investing in new physical capital campaigns and building projects, museums need to invest in digital real estate in various platforms that will act as portals for users to engage and participate with museum content. Some key considerations in the metaverse for museums, and other organizations, are interoperability and portability; migration; emulation and re-presentation; copyright at the speed of innovation; a global commons; standards; sustainability; accessibility and inclusive design. Partnership with corporate and gaming companies can foster success in these arenas. Esports with museums can contribute to building new global communities of fans and build capacity for earned revenue.

CUSTOMER-CENTRIC MINDSET FOR MUSEUMS

A customer-centric mindset focused on providing products and services built on collections and content is essential for museums' sustainability and survival. Customers have many competing choices and priorities for their affinity, attention, money, and time with existing digital-first and emerging metaverse platforms offered at attractive prices, availability on-demand, and featuring customer personalization. If museums continue to think they can wait out or opt-out of digital transformation, they fail to serve their customer communities and actively choose to undermine their futures. The business side of museums is serious and should not be taken for granted: it requires greater attention by leadership in order for individual organizations and indeed the field to thrive in the future. Moreover, museums should be earnestly focused on participating with new forms of community, driven by avatars, content creators, and the metaverse. Expressions and manifestations of identities are being re-imagined, built, and remixed in new directions that may be more compelling and empowering to present and future customers.

Experienced consultants and advisors like BPOC can help museums and other cultural institutions undergo digital transformation and be metaverse ready.

ABOUT THE AUTHOR

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Neal is a Consulting Executive Advisor at the Balboa Park Online Collaborative (BPOC). Stimler is also the President of Stimler Advantage, an executive management consulting firm. Neal was a 2019-2020 Fellow at The Engelberg Center of Innovation Law and Policy at the New York University School of Law. He co-authored the digital publication, GLAM3D.org, a good practice guide for 3D digitization cultural resources. He was the inaugural Head of Public Engagement at Auckland Art Gallery Toi o Tāmaki in Aotearoa, New Zealand. Neal had a career over a decade at The Metropolitan Museum of Art in successive positions. Neal was an Executive Committee Member of the Museums Council of New York City in 2016-2017. Neal guided The Metropolitan Museum of Art, The Cleveland Museum of Art, and the Smithsonian Institution on their open access programs. Neal is a creative strategist with experience in collaborative leadership, content management, project management, and trend forecasting. He has successfully contributed and led efforts that improved business operations, thoughtfully engaged audiences, enhanced organizations' management capabilities, and inspired greater visionary capacity. Neal provides leadership and critical insights on trends in business management and digital technology. Stimler is a Certified Blockchain, Cryptocurrency, Metaverse, and NFT Expert from the Blockchain Council, completed the Blockchain Revolution Specialization with INSEAD from Coursera, and the Everyrealm Inc. Realm Academy Metaverse Education Certificate.

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