

Art, Culture and New Technologies  
in Latin America and the Caribbean  
Creative Economy

# Museums

Trends and Digital Strategies



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# Introduction

What is the future of digital technologies for museums in Latin America and the Caribbean? Which strategies will enable museums to cope with challenges like the digital divide, technological transformation, and economic sustainability? Is the “digital museum” a new paradigm that is here to stay? What are the skills, and technological infrastructure that museums and their staff need to overcome today’s challenges?

All these questions echo the report *Vision 2025, Reinvest in the Americas: A Decade of Opportunity* published by the Inter-American Development Bank (IDB). In order to achieve economic recovery and growth during the coming years, SMEs and creative industries in Latin American and the Caribbean (LAC) must promote digitization, rapid adoption of new technologies—in museums for this matter—, as well as fostering innovation and entrepreneurship.<sup>1</sup> Generating information on how museums from LAC are now facing a crisis worsened by COVID-19, represents a first step towards this goal. Unlike other regions like North America and Europe, where the availability of data and specialized information systems has enabled measurement of the impact and transformations imposed by the pandemic, LAC countries have just started to conduct systematic and regular research to comprehensively understand the behavior of museums and their needs as a sector linked to tourism, education and entertainment.<sup>2</sup>

The main contribution of this publication is to generate new evidence about museums by organizing the available information, and by creating references built on the basis of original and customized data, providing solutions tailored to the needs of our region.

The insights presented here serve to understand the current situation in LAC museums and their possible future, in the light of world trends and, particularly, the needs and challenges of the region. Museums around the world were affected by the shutdown, decreasing their attendance. Yet, this was also an opportunity to reinforce their digital strategies and innovations. As for LAC museums, they have proved ability to learn, plan and develop unique solutions appropriate for their own economical and digital contexts.

- <sup>1</sup> Inter-American Development Bank, *Vision 2025, Reinvest in the Americas: A decade of opportunity* (Washington DC: BID, 2021).
- <sup>2</sup> For available statistical information in LAC and the data gap, still to be filled, see below I.II “The world of museums in figures.”

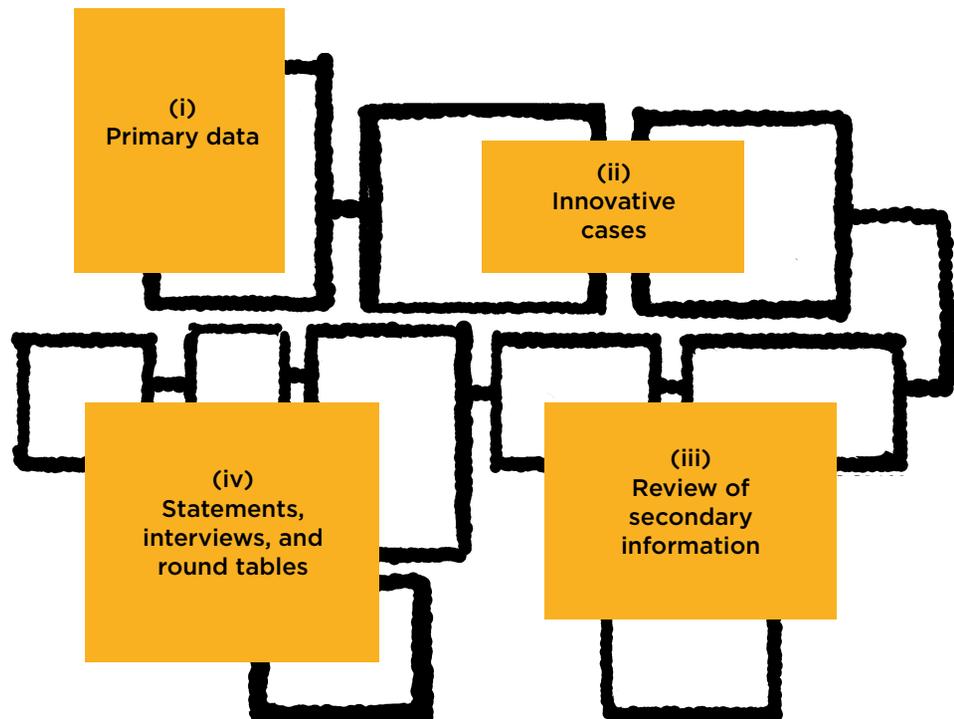
The impact of the health crisis on LAC museums and on its entire ecosystem—that is, the regional value chain that productively make museums engage with other creative industries, such as education, tourism, and other formal and informal economic activities that make it possible for them to exist—has revealed their economic fragility and their poor digital readiness. Conversely, the social role of museums, their relationship with audiences, their ability to digitally innovate through low-cost and low-tech solutions, as well as the collaborative and resilience strategies that emerged during the pandemic around them, all are promising growth prospects for the sector worth studying and exploring.

Based on new quantitative and qualitative data tailored for this research, we suggest different ways in which museums in LAC—at the core of a network formed by other creative industries—can resume and enhance growth. Here we consider a museum a space for innovation, social transformation, digital disruption and economic development. In addition, we intend to look at their paramount and yet not sufficiently explored opportunities, their challenges, and their ongoing and future strategies, especially in the context of their relation to new technologies, since the onset of COVID-19. *Museums: Trends and Digital Strategies* is part of the IDB's editorial series, *Art, Culture and New Technologies in Latin America and the Caribbean*, intended to point out the impact of digitization and the adoption of technologies by cultural and creative industries from the region, and how this can catalyze innovation, social cohesion and change.

This publication has been divided into four sections. We start discussing the effects of the pandemic on museums in LAC. Next, we address a series of cases on digital transformation and their implicit challenges, outlining potential future scenarios. In the first chapter we reflect upon the role of museums today; presenting available data we discuss the impact of COVID-19, and explore possible scenarios for the sector. During the second section, we describe major transformations, challenges, trends and opportunities for LAC museums. We will focus particularly on the solutions that digital technologies have provided and will continue providing in the present. In the third part, we discuss select emblematic cases of digital innovation and technological breakthroughs. Finally, we list some of the newest strategies and paths to follow for museums in post-COVID-19 contexts, as well as what is to be expected in the immediate future.

## Methodology

This publication was created on the basis of **(i) primary data**, from a *qualitative research* conducted through in-depth interviews to eight stakeholders in the region and a *quantitative research* surveying three hundred museum directors or senior members by telephone; **(ii) salient innovative cases** in the field of museums in LAC, North America and Europe; **(iii) the review of secondary information** such as global, regional, national, and sectorial surveys; and **(iv) statements, interviews, and round tables** with museum professionals, officials from the culture field, and creative economy experts. Throughout this volume, data from other studies is referenced in the critical apparatus. In the interest of not being repetitive, whenever no reference is assigned to support any information, it should be assumed that we are quoting our primary research.



# 1. Traces of COVID-19 in the Museum Sector



The pandemic pushed museums to seek on-line positioning, but it also rendered visible the challenges and constraints in terms of digital capacity, staff and equipment.

—**Mônica Barcelos**, Technical Unit Coordinator at Ibermuseos

## Museums for the 21<sup>st</sup> Century

When considered as a fundamental part of culture, and a cross-cutting component of social development and individual life, museums stand as unique places to push society into a more active role in attaining the 17 Sustainable Development Goals from the 2030 Agenda.<sup>3</sup> With almost a quarter of the 21st Century behind us, we are witnessing their transformation from institutions creating narratives into *spaces of conflict, negotiation and sociocultural reflection*. Users, formerly identified as visitors, are now understood as agents taking an active role in the construction of critical thinking, transformative experiences and the museum's social significance. It seems as if displaying art works, devices, and books is no longer enough.<sup>4</sup> Today, museums and galleries propose ways of interacting with objects by manipulating or personalizing them. Concepts like “experience,” “interactivity” and “engagement” represent new ways of interpreting and experiencing their collections. The user is widely recognized as an active participant that engages with the content displayed and museum narrative / curatorial practice. This *user-centered approach* enables museums to grow hand in hand with their audience and encourages their visitors to live culturally enriched lives.

Opposite to an encyclopedic definition of museums as places or temples of knowledge, from the perspective of them *as fora or agoras* the task of a contemporary museum is to be a space for interaction, exchange, debate and community-building.<sup>5</sup> Their ability to serve as

- 3 “The Sustainable Development Goals: Helping Transform our World Through Museums,” ICOM, January 21 2020, accessed June 2021, <https://icom.museum/en/news/the-sustainable-development-goals-helping-transform-our-world-through-museums/>.
- 4 Tom Gregory, “The Big Trends Transforming Libraries, Museums and Archives in 2019 and Beyond,” Axiell, 4 July 2019, Accessed June 2021, <https://www.axiell.com/report/the-big-trends-transforming-libraries-museums-and-archives-in-2019-and-beyond/>.
- 5 Regarding this definition it is worth mentioning the idea of the “museum-forum” or “museum-as-a-social-arena” put in place by the Museo Universitario Arte Contemporáneo (MUAC), from the Universidad Nacional Autónoma de México, in Mexico City. The institution had a great impact on the public sphere through the William Bullock Chair of Critical Museology and the exhibition “Towards an Investigative Aesthetic” organized with the British collective Forensic Architecture in 2017. The show worked out as a forum to present evidence and condemn the well-known case of the enforced disappearance of 43 students from Ayotzinapa, in 2014. See the interview of Nicola Marini to Amanda de la Garza, MUAC director: “Interview with Amanda de la Garza,” Call for Curators, accessed January 20, 2021, <https://callforcurators.com/blog/amanda-de-la-garza/>.

a public arena, or a privileged space—in the context of the Habermasian public sphere—<sup>6</sup> represents an expansion of museums related to their present, facing challenges for social justice, climate change, new technologies, and the effects of the pandemic.<sup>7</sup> Since 2021 museums are not limited to a physical venue, or to a permanent collection and / or exhibitions. On the contrary, they have been able to transcend their architecture and unfold through *outreach programs* for specific audiences, or through the *digital sphere* on social media, online collections, technological devices, and other interactive platforms.

Finally, museums are considered a *place for non-formal education*.<sup>8</sup> In their non-formal character lies their ability to create meaningful learning and / or mediations through ‘outside-the-box’ strategies. Halfway between museum-schools and museum-cabinets of curiosities / chamber of wonders, contemporary museums are redefining their social role and their influence in public life.

- 6 The term public sphere was coined by the German philosopher Jürgen Habermas in 1962 and refers to the social space of citizen participation focusing on common interests, authorities and legitimate powers. The public sphere is not equal to the private spheres but it depends on them, and it is a necessary condition for the existence of modern societies and democratic progress since the 18th century. In the same way as mass media renewed the public sphere during the Twentieth Century, social networks have redefined methods and spaces of participation in our era. On this transformation, see Víctor Castrelo, “La esfera pública habermasiana. Su obsolescencia en tiempos de nuevas plataformas digitales,” *Inmediaciones de la Comunicación* vol. 13, no. 1 (2018): 71-87.
- 7 On the shift towards audiences and the relevant social role that art and culture have played during the pandemic, the IDB, in partnership with other institutions in the region, developed the virtual summit “How to heal a wounded world,” curated by Manuela Reyes Restrepo and Steven Henry Madoff, taking place April 22 and 23 2021. Its objective was to analyze how art and culture serve as a space to contemplate human potential and promote collective imagination, and to create paths for change affecting the economic, spiritual, social, and technological dimensions of society. One of the panels was focused on cultural institutions as levers for reimagining concepts like community, creativity and social relations. Videos of the summit are available at “Video Gallery,” How to Heal a Wounded World, Inter-American Development Bank, accessed May 3, 2021, <https://healingabrokenworld.iadb.org/es/video-gallery>
- 8 “Public Knowledge” at the San Francisco Museum of Modern Art is a particularly interesting example of a museum committed to its nearest communities on labor and educational issues. Curated by Deena Chalabi and Dominic Willsdon, the project brings together artists, academics, librarians, community organizers and residents of San Francisco, in sharing their experiences and knowledge. By participating in its activities, citizens collectively learn and discuss new ways of approaching and strengthening the fabric of civic life. See: “Public Knowledge,” SFMOMA, accessed July 1, 2021, <https://publicknowledge.sfmoma.org>.

## The World of Museums in Figures

The digital divide between world regions has been a major obstacle to fulfilling the educational function of museums in the context of the pandemic shutdown.<sup>9</sup> In LAC, this gap is worsened by the lack of valid data measuring fundamental factors such as the total number of museums by country, their total attendance, and their contribution to the economy of cities, countries and regions, or their impact on digital audiences.

Despite this fact, the available data allow us to sketch a general panorama of the situation of museums in our region. It is well known, for example, that the three most visited museums in LAC are the Museo Nacional de Antropología, the Museo Nacional de Historia (Castillo de Chapultepec), (both in Mexico), and the Centro Cultural Banco do Brasil in Rio de Janeiro. In 2019 these museums received 3 million, 2.8 million and 2.6 million visitors, respectively.<sup>10</sup>

Table 1. **Number of museums by type of collection in the Ibero-American region, according to the Register of Ibero-American Museums (RMI)**

Others	1,828
Mixed	1,819
Historical	1,775
Archaeological / anthropological / ethnological	1,267
Arts	1,042

Table 2. **Number of museums by ownership in the Ibero-American region, according to the Register of Ibero-American Museums (RMI)**

Public financing	5,637
Private or independent	2,581

<sup>9</sup> “Museums around the World in the Face of Covid-19. UNESCO Report,” UNESCO, April 2021, 5, accessed June 2021, [https://unesdoc.unesco.org/ark:/48223/pf0000376729\\_eng/PDF/376729eng.pdf.multi](https://unesdoc.unesco.org/ark:/48223/pf0000376729_eng/PDF/376729eng.pdf.multi).

<sup>10</sup> Notimex, “El Museo Nacional de Antropología alcanza tres millones de visitantes en 2019,” *El Economista*, December 19, 2019, accessed June 2021, <https://www.eleconomista.com.mx/arteseideas/El-Museo-Nacional-de-Antropologia-alcanza-tres-millones-de-visitantes-en-2019-20191219-0085.html>; Emily Sharpe and José da Silva, “Art’s Most Popular: Here Are 2019’s Most Visited Shows and Museums,” *The Art Newspaper*, March 31 2020, accessed June 2021, <https://www.theartnewspaper.com/analysis/art-s-most-popular-here-are-2019-s-most-visited-shows-and-museums>.

As an example of the economic impact of the sector in LAC, in Colombia, one of the few countries that collects related data, museums contribution corresponds to 0.0212% of the GDP from 1995 to 2001.<sup>11</sup> In Mexico, according to the National Institute of Statistics and Geography, the added value generated by the sector in 2016 was 25 million and accounted for 0.7% of the cultural GDP of the country, measured in the satellite account of culture. This figure contrasts with other activities in the cultural sector, such as audiovisual media production, which corresponds to 40% of the total creation of economic wealth in the culture field.<sup>12</sup>

To understand these figures, it is worth considering the economic impact of museums in other contexts outside LAC, like in the United States or the United Kingdom. In 2016, the museum field in the United States, the country with the most museums worldwide, received 850 million visits, employed 372,100 people and generated revenues for 15.9 billion dollars. The total contribution of museums to the national economy, considering both direct and indirect impact, amounted to 50 billion dollars equivalent to 0.3% of GDP.<sup>13</sup> The United Kingdom museum network corresponds to 2.5 billion pounds in annual revenue, and employs more than 38,000 people. These last figures highlight the large importance of the field, especially when compared to other industries such as television, which generates about £ 3.3 billion a year, or cinema, which is estimated to contribute more than £ 4.6 billion of the GDP, employing more than 117,000 people.<sup>14</sup>

In addition to the digital divide and the economic contributions of museums, another main factor in understanding the importance and potential of the field in LAC is the uneven distribution of museums per country. Currently, in LAC are located 8.4% of the 104,000 museums in the

11 Between 1995 and 2001, “the cultural sector contributed up to 2.12% of the total GDP of the Colombian economy [...] It is to be noted that 96% of that figure reflects the contribution of five sectors: press and magazines (27%), publishing (22%), television and radio (21%), advertising (21%), and films and video (5%). The performing arts, museums and historical buildings fields contribute 1% each, from the total figure of the cultural sector.” Luis Fernando Aguado Quintero, “Estadísticas culturales: Una mirada desde la economía de la cultura,” *Cuadernos De Administración* 23 (41), 2010, 127-128. DOI: <https://doi.org/10.11144/Javeriana.cao23-41.ecmd>.

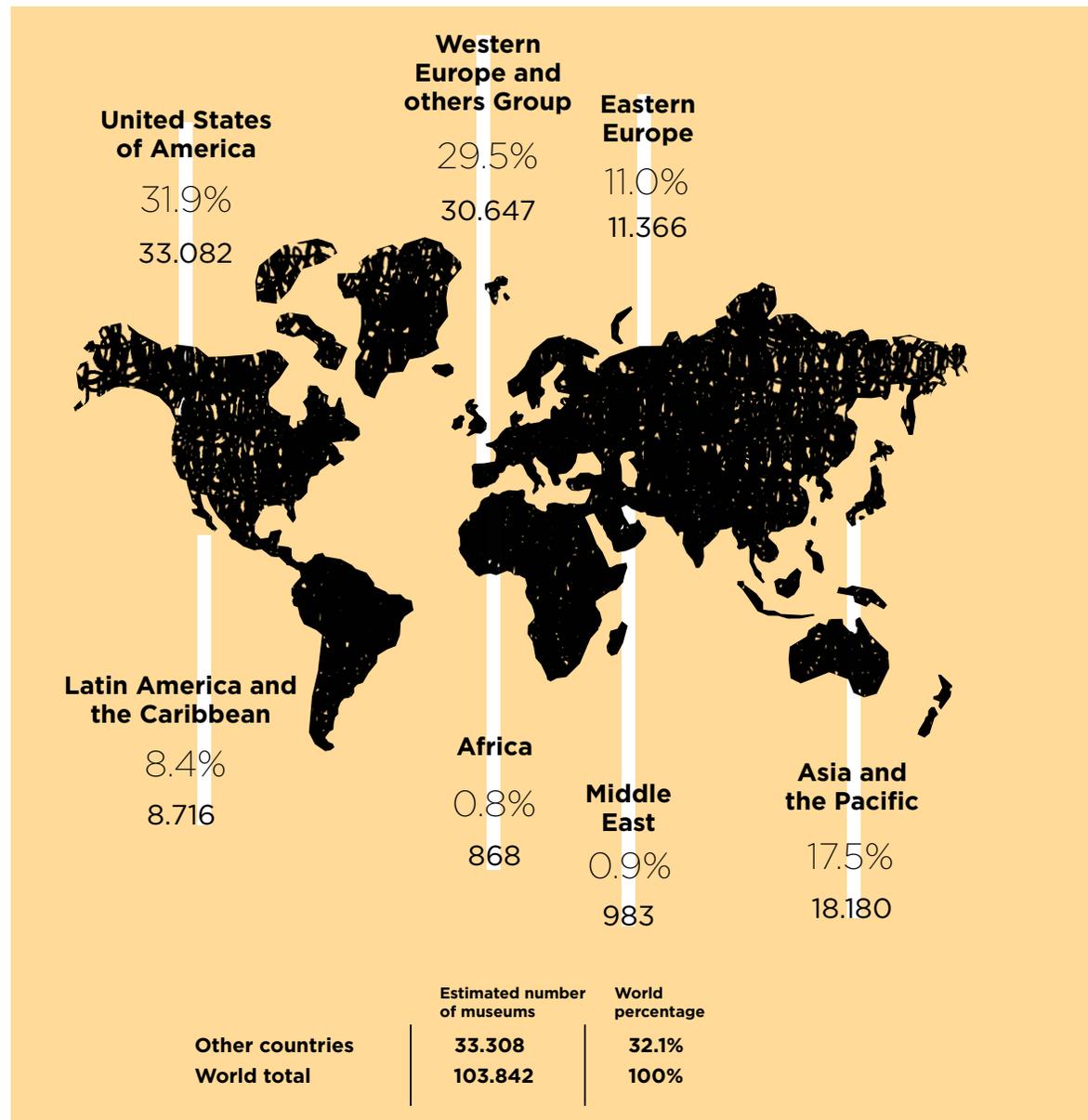
12 “Cuenta satélite de cultura,” INEGI, accessed July 2021, <https://www.inegi.org.mx/temas/cultura/>.

13 Oxford Economics, *Museums As Economic Engines, A National Report*, December 2017.

14 “TV & Film: Why The UK?,” Creative Industries Council, January 9 2020, accessed June 2021, <https://www.thecreativeindustries.co.uk/site-content/industries-tv-film-tv-film-why-the-uk>. See also F. Tuck, et. al., *The Economic Impact of Museums in England* (London: Arts Council England, 2015).

world,<sup>15</sup> while 40.5% are located in North America and Western Europe. These figures contrast radically with other regions such as Africa and the United Arab Emirates, which account for only 0.8 and 0.7% of the total number of museums, respectively. From 2012 to 2021 there was a 75 % increase in museums around the world. However, in LAC, from 2010 to 2021, that increase amounts to less than 20%.<sup>16</sup>

Table 3. **Estimated number of museums in 2021 according to UNESCO**



<sup>15</sup> UNESCO, "Museums in the Face of Covid-19."

<sup>16</sup> Georgina DeCarli, "Hacia la sostenibilidad de los museos en América Latina y el Caribe," *Museos.es: Revista de la Subdirección General de Museos Estatales*, n. 7-8, 2011-2012, 111, accessed August 2021, <https://www.culturaydeporte.gob.es/dam/jcr:0645f275-432d-4802-8ffb-53883c50a2c7/sostenibilidad-museos-america-latina-caribe.pdf>.

The proportion of museums in the world is far from uniform, even when considering countries in the same region. Globally, 50% of the countries have less than 50 museums, while 18 countries have more than 1,000 museums each. Among this group, Brazil with 3,906 museums, Mexico with 1,320, and Argentina with 1,183 stand out in LAC. In the range of 201 to 500 museums are Colombia, Cuba, Chile, Peru, and Uruguay, and at the bottom of this ranking, with less than 10 museums, are Antigua and Barbuda, Bahamas, Barbados, Belize, Guyana, Haiti, Saint Lucia, Suriname, and Trinidad and Tobago. LAC countries without museums from the insular Caribbean: Dominica, Saint Kitts and Nevis, and Saint Vincent and the Grenadines. These figures should be compared with those published by the RMI.<sup>17</sup> Not all of the museums from countries taking part in the registry have shared their data, there could be a discrepancy between the museums identified by each country and those registered in the RMI.<sup>18</sup>

## Data Gaps

Regarding information systems and their availability for museums, each LAC country has a database maintained by local statistical agencies or governing boards. But they are generally not up-to-date, or their data is incomplete, and the same can be said about regional systems.

Governments in the region and their museums are being faced with both a challenge and an opportunity to develop comprehensive information systems that could measure periodically and gradually the growth and demands in the field, the amount and characteristics of visitors, and the contribution from museums to economy and social well being. A good reference and model for our countries are the periodical studies carried out by the American Alliance of Museums in the United States in collaboration with different data consultant companies, or the three global surveys carried out by the International Council of Museums (ICOM).<sup>19</sup> As

<sup>17</sup> “Register of Ibero-American Museums.”

<sup>18</sup> “Museums in data,” Ibermuseos, accessed on May 6, 2021, [www.rmiberoamericana.org/Home/Recursos](http://www.rmiberoamericana.org/Home/Recursos). Some of the countries showing different figures from those on UNESCO’s study are: Brazil (3,095 museums); Mexico, (1,264); and Argentina, (1,017).

<sup>19</sup> From April 6 to April 30, 2021, the Seattle-based American Alliance of Museums and Wilkening Consulting conducted the third version of a survey among museum directors to assess the impacts of COVID-19 in the sector. The survey gathered metrics collected by the AAM since June 2020, and determined the financial situation of museums in that year. Museum directors responded to the AAM survey on behalf of their organizations, considering a representative and transversal

long as clear and correlated information is available, it will be easier for museums to focus on strategic planning towards ensuring their existence, their maintenance, long-term sustainability, and pertinent social impact.

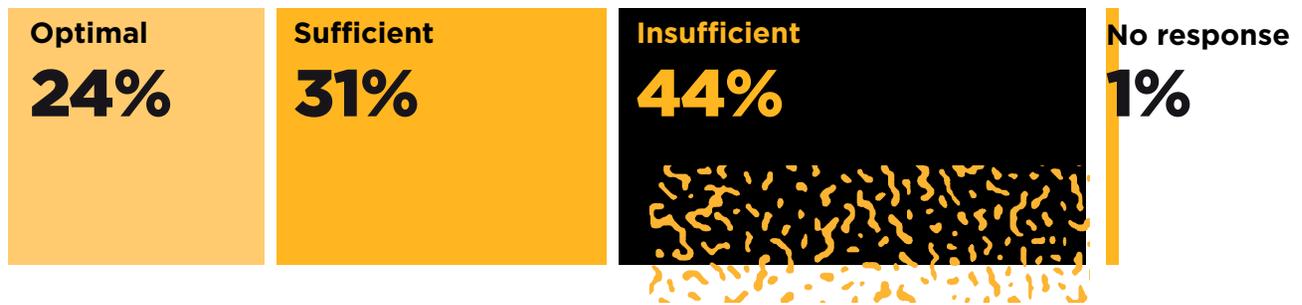
Table 4. **Ibermuseos Surveys during the Pandemic**

<p>During the pandemic, the Ibermuseos Program, a program dependent of the Ibero-American General Secretariat (SEGIB), conducted two surveys to measure the impact of COVID-19. One was aimed at investigating the needs of museums in the context of the health crisis; the second one was focused on knowing its impact on museum professionals. Based on this data, the program reoriented its agenda, focusing on identifying museum and their staff concerns, and on how they were dealing with their confusion about how to cope with the pandemic.</p>	
<p><b>Survey 1.</b> What do museums need in times of social distancing? Results of the survey on the impact of COVID-19 in Ibero-American museums.</p>	<p>June 2020</p>
<p><b>Survey 2.</b> Ibero-American museum professionals facing COVID-19. Present and future after several months of health crisis.</p>	<p>April 2021</p>

For the purpose of obtaining correlated data from different countries in the region, we conducted a survey aimed at knowing the degree of technological development in LAC museums, before and during the pandemic, measuring the impact of the crisis, the degree of digital innovation, and mapping economic strategies and increasing trends.<sup>20</sup> The survey allowed us to picture the technological infrastructure that museums had before the crisis, and their subsequent transformation. Thanks to these unique findings, we were able to compare the existing information and fill in the data gaps.

sample by sector, region, size, and discipline. The results show the profound negative impact of the pandemic on American museums, but it also reveal some optimistic views about their recovery. "National Snapshot of COVID-19 Impact on United States Museums (fielded April 2021)," American Alliance of Museums, June 2021, <https://www.aam-us.org/2021/06/01/national-snapshot-of-covid-19-impact-on-united-states-museums-fielded-april-2021/>. See also, "Museums, museum professionals and COVID-19: third survey. Report," ICOM, July 5, 2021, [https://icom.museum/wp-content/uploads/2021/07/Museos-y-Covid-19\\_tercer\\_informe\\_ICOM.pdf](https://icom.museum/wp-content/uploads/2021/07/Museos-y-Covid-19_tercer_informe_ICOM.pdf).

<sup>20</sup> The survey was conducted among three hundred directors, coordinators or executives of museums in LAC, from March to May 2021 by a telephone questionnaire. Aura / SIMO, "Quantitative study for the Series 'Art, Culture and New Technologies in Latin America and the Caribbean'" (Mexico City: 2021).

Table 5. **Current infrastructure and use of new technologies**

One of our main findings is how LAC museums furthered their technological development as a result of the challenges posed by COVID-19, mainly through free content platforms and social media. The increase is mostly clear in virtual tours (from 18 to 35%), promotional campaigns (from 19 to 24%), online streaming events (from 14 to 31%) and even teleconferencing (from 11 to 27%). All this, despite the fact that 45% of the interviewees were not planning ahead on using new technology. Only a small number of museums (7%) did not have any technological developments, and their situation did not change during the pandemic, possibly due to lack of financial resources and / or qualified staff.

At a regional level, the absence of comprehensive technological innovation projects becomes evident in most museums. This may be explained due to a lack of financial resources, poor technology training of human resources and / or the absence of an action plan including digitization as an institutional goal. This is confirmed by the fact that 44% of the respondents consider their current technological infrastructure as insufficient to support innovation.

Among them there is a consensus that developing new technological products is necessary (68%); that these products should be friendly to their general public, accessible, and visually and aurally engaging. For 38% of the respondents creating new products is already a major trend, but most of them (71%) consider that further efforts are required.

Table 6. **Digital platforms used before the pandemic**

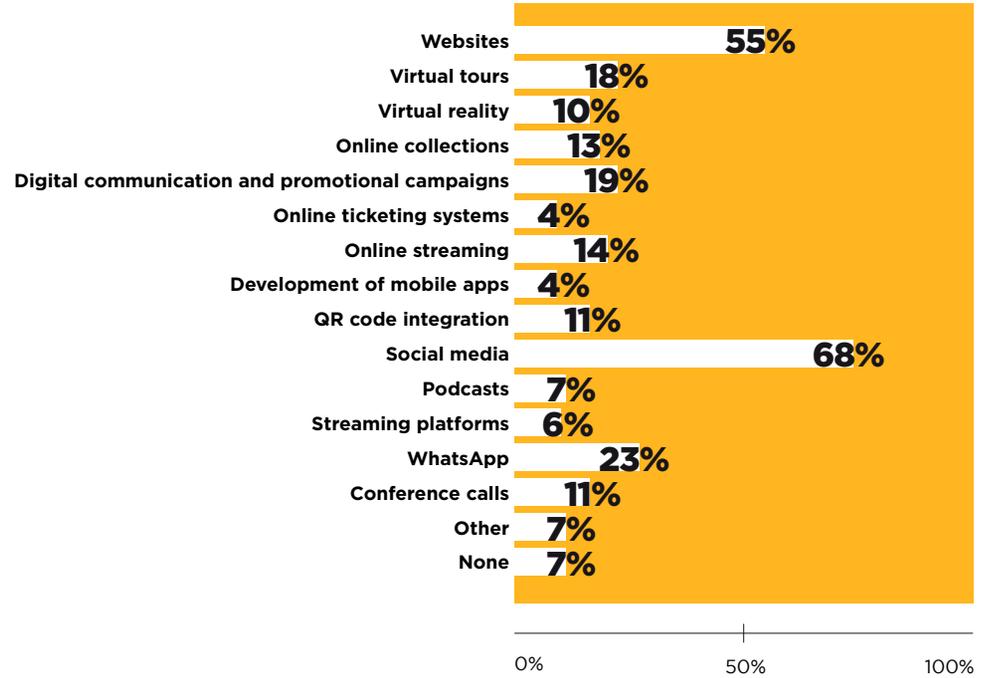


Table 7. **Digital platforms used from the onset of the pandemic**

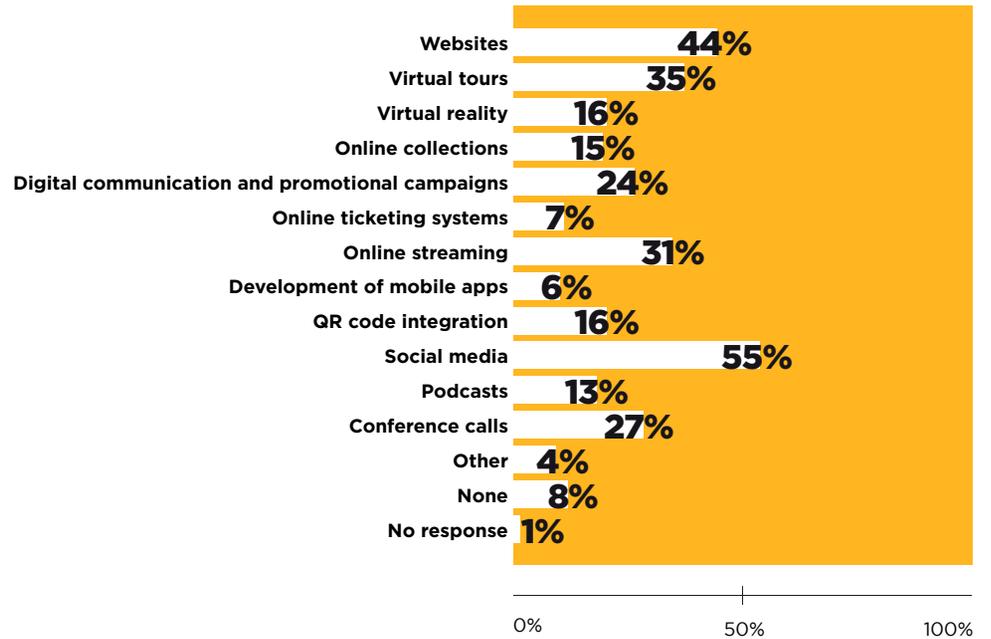


Table 8. **Use and development of technologies and multimedia content during confinement**



## A Severe Blow

Like most economic actors, museums were severely affected by the pandemic. The economic and tangible effects on LAC institutions were deeper than those on their pairs in Europe, the United States, Canada and Asia, due to the difficult conditions affecting them even before the crisis. The coronavirus pandemic only deepened and made more visible the fragile situation of the LAC museums.

Until mid-2020, it was estimated that 12.9% of the global museums would not survive the pandemic. After the scenario changed, by July 2021, the percentage dropped to 4.1%.<sup>21</sup> Unfortunately, the crisis in the field has not ended. Economic losses reported by both public and private museums will continue having consequences in the short and medium term. These consequences will be most visible in:

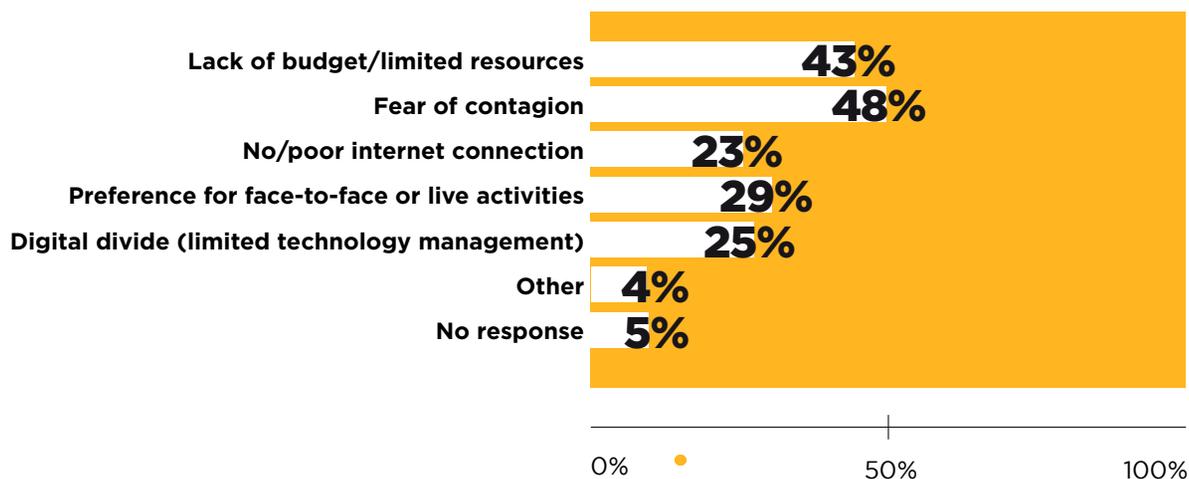
- Limited operational capacity
- Less attendance
- Decrease in profits
- Downsizing
- Reduced opening hours
- Budget cuts
- Digital innovation solutions

After being forced to close during most of the pandemic, museum income has been reduced by about 40 to 80 % percent, in comparison to

<sup>21</sup> UNESCO, "Museums in the Face of Covid-19."

their 2019 results. This state of affairs, combined with health restrictions such as social distancing and a reduction of their maximum capacity (70 up to 80%), has worsened their financial crisis. Even for institutions that remained open under strict sanitary measures and biosafety protocols, the dramatic fall in international tourism caused a 70% drop in their attendance.<sup>22</sup> There are different factors involved in a lesser response from audiences, but the main obstacles affecting them have been either related to their budget (43%) or fear of contagion (48%). Even today many museums are not receiving the amount of visitors they were expecting. And for some of them, reopening at 25 percent of their capacity represents loss instead of profit. The Whitney Museum in New York, for instance, witnessed how their attendance dropped 80%.<sup>23</sup> According to a study conducted jointly by MERCOSUR, UNESCO, IDB, SEGIB and OEI, between the first of January, 2019 and June 30, 2020, in LAC, 7,516 museums were closed; 2,309 art galleries and showrooms stopped displaying and trading works; and at least 1,887 archives shut down.<sup>24</sup> The Instituto de Liderazgo en Museos reported that, after reopening in 2021, museums in Central America and the Caribbean expect an audience drop of about 50%, compared to their number of visitors before the pandemic.<sup>25</sup>

Table 9. **Obstacles that have discouraged audiences during the pandemic**



<sup>22</sup> “2020: Worst Year in Tourism History with 1 Billion Fewer International Arrivals,” UNWTO, January 28 2021, accessed June 2021, <https://www.unwto.org/news/2020-worst-year-in-tourism-history-with-1-billion-fewer-international-arrivals>.

<sup>23</sup> Colin Moynihan, “Whitney Lays Off 15 Workers amid Mounting Financial Losses,” *The New York Times*, February 21 2021, accessed June 2021, <https://www.nytimes.com/2021/02/23/arts/design/whitney-museum-layoffs.html>.

<sup>24</sup> Triguboff Matías, et. al, *Evaluación del impacto de la COVID-19 en las Industrias Culturales y Creativas. Una iniciativa conjunta de MERCOSUR, UNESCO, BID, SEGIB y OEI*. UNESCO Publishing: París, UNESCO, 2021 <https://unesdoc.unesco.org/ark:/48223/pf0000380185>.

<sup>25</sup> “Encuesta a personal directivo de instituciones culturales y museos de México, Centroamérica y el Caribe,” Instituto de Liderazgo en Museos, Buendía & Márquez and Aura Cultura, May 2021, <https://www.ilmuseos.org>.

According to ICOM, public funds represent one of the two main sources of income for museums in the world, the second being ticketing. For one-third of them, sales revenue is just as crucial.<sup>26</sup> 49.6% of the respondents admitted that their institution would lose at least 25 % of revenue in 2020, and for 31.9% of them, it would be up to 50 %. During 2020, according to the same source, 47% of museums in LAC lost 50% of their total income.<sup>27</sup>

Budget cuts and not enough rescue packages left museums in fragile operating conditions. To a greater or lesser extent depending on the institution, has led to job losses and a decrease in salaries, leaving tangible and intangible heritage assets and archives at risk, or leading to deterioration of facilities, cancellation of programming, interruption in the rental of locations and commercial activities within museums (restaurants and shops) and, in some cases, total shut down.<sup>28</sup>

Colombia was the first country to create a rescue program for museums, through a call for proposals for funds towards reactivation and reopening in the summer of 2020.<sup>29</sup> Mónica Barcelos recognizes the ef-

<sup>26</sup> “Museums, museum professionals and COVID-19. Second survey,” Report, ICOM, May 2020, accessed June 2021, <https://icom.museum/wp-content/uploads/2020/05/Informe-museos-y-COVID-19.pdf>.

<sup>27</sup> ICOM, “Museums, museum professionals and COVID-19. Report,” ICOM. “... the situation of museums in the Spring of 2021 worsened slightly compared to the period between September and October 2020, but it was inconsistent across regions: while the overwhelming majority of museums in Africa and the Pacific were open, in Europe and North America they had only started to reopen their doors. The situation for Asia, Latin America and the Caribbean and the Arab Countries was also irregular at the local level.” ICOM, “Museums, museum professionals and COVID-1. Third survey,” 5.

<sup>28</sup> The International Committee of Museums and Collections of Modern Art (CIMAM) has expressed its concern for the Mexican case, whose ecosystem of public museums, the second largest in LAC only after Brazil, faced budget cuts of up to 75% in 2020. “Museos mexicanos: ecosistema en peligro,” *El Universal*, December 10, 2020, accessed in June 2021, <https://www.eluniversal.com.mx/cultura/patrimonio/museos-de-mexico-alarma-ante-la-grave-crisis-que-enfrentan>.

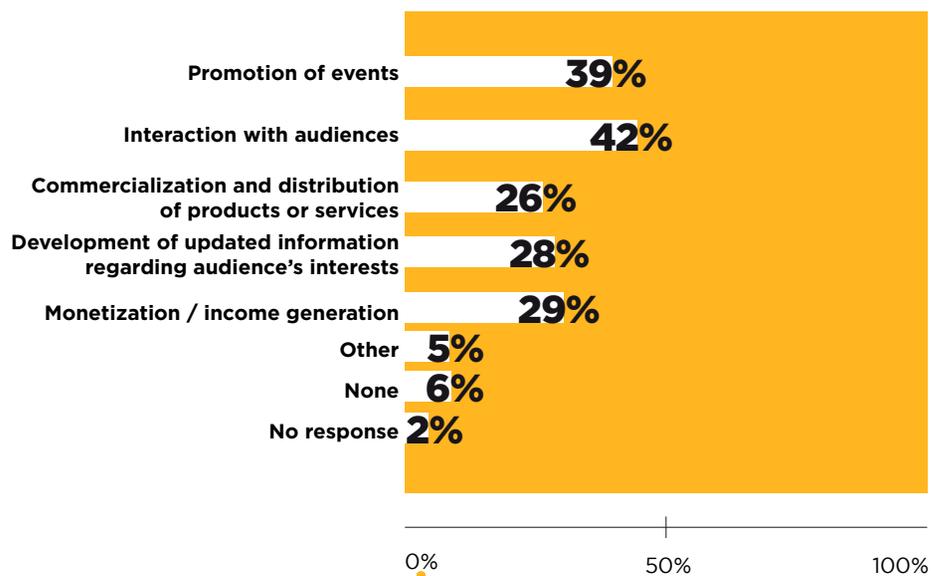
<sup>29</sup> “Ministerio de Cultura de Colombia abre convocatoria para museos, 3 mil millones para proyectos de reactivación y reapertura,” Ibermuseos, updated July 1, 2020, [www.ibermuseos.org/recursos/noticias/ministerio-de-cultura-de-colombia-abre-convocatoria-para-museos-3-mil-millones-para-proyectos-de-reactivacion-y-reapertura/](http://www.ibermuseos.org/recursos/noticias/ministerio-de-cultura-de-colombia-abre-convocatoria-para-museos-3-mil-millones-para-proyectos-de-reactivacion-y-reapertura/).

In April 2021, the Ministry of Culture launched a second call, this time focused on artists and museums. It was called “Reactivarte: Arte Joven 20x21” and consisted of financial support for 20 museums, so that each one buys 21 works made by young Colombian artists. <https://www.semana.com/cultura/articulo/>

forts of this country to make a call for grants for private museums, in addition to continuing to support public museums. This is relevant in her opinion “because private museums usually obtain their income through the box office or the rental of spaces, they do not necessarily have a guaranteed budget.”<sup>30</sup> Funds were also allocated by Chile, to support museums with collections and museum equipment, through the COVID Transitory Emergency Fund, which was later labeled the Fund for the Comprehensive Improvement of Museums. Up to this date two calls have been launched, the first was addressed solely to those museums without government funding. The second was aimed at any museum registered in the Chilean Museum Registry.<sup>31</sup>

The main view among the interviewees is that museums in the region had significantly been more affected than those from other regions in the world, due to previous issues compounded by the pandemic, namely, reduced financial resources; precarious jobs and job insecurity; insufficient professionalization and specialization of human resources; deterioration in infrastructure, conservation of collections and technological capabilities; lack of long-term planning not compromised by organizational changes, and so forth.

Table 10. **Restricted services due to lack of technological means**



arte-joven-20x21-les-propone-a-los-museos-nacionales-comprar-obras-de-jovenes-artistas-locales/202135/.

<sup>30</sup> Mônica Barcelos (coordinator of the Ibermuseos Technical Unit), interview by Luis Vargas Santiago, February 19 2021, video.

<sup>31</sup> Subdirección Nacional de Museos de Chile, “Fondos concursables,” Servicio Nacional del Patrimonio Cultural, accessed July 2 2021, <https://www.museoschile.gob.cl/fondos>.

The pandemic has made these drawbacks evident. For instance, regarding the limited access to museum products or services due to poor technology options, two main challenges were identified: a) reaching and interacting with the target audience (42%) and b) advertising and promotion of events (39%). This fact significantly shows how museums are concerned about not being able to reach their traditional visitors. The fact that 67% of the respondents considered that their audience has already changed confirms this concern.

Table 11. **Perception of the use of technological innovation to solve current challenges**

	DOES NOT SOLVE ANYTHING					SOLVES EVERYTHING	
	1	2	3	4	5	6	7
	1%	1%	3%	13%	22%	20%	40%
<b>Central America &amp; Mexico</b>	1%	1%	1%	13%	24%	22%	36%
<b>The Caribbean</b>	0%	0%	0%	0%	0%	0%	100%
<b>Andean Region</b>	1%	0%	4%	14%	17%	12%	53%
<b>Southern Cone</b>	0%	0%	8%	5%	30%	38%	16%

It is to be noted that, in general, differences between Mexico-Central America and the Southern Cone are less significant, compared to those between the Caribbean and the Andean region. In the Southern Cone they share the least optimistic perception about technological innovation, delivering solutions to the pandemic challenges.

During this period, only 30% of museums in LAC reported having implemented financial strategies to face the currency crisis derived from COVID-19. When compared to other regions<sup>32</sup> this low percentage does not mean a healthy financial situation. It can be rather explained by an absolute dependency on public funds, (almost 50 % of them). There are just few state museums where government subsidies coexist with private donations, resulting in mixed funding. According to 87% of respondents, technology and digital tools can help develop new income strategies.

<sup>32</sup> ICOM reports a global figure similar but slightly higher: 40.9% of the respondents admitted they have looked for new sources of income. Among these new strategies the following stand out: online store (14.1%), museum-themed “lockdown” products (11.3%), online learning programs (8.4%), Museum spaces for rent (7.7%), paid virtual tours ( 7.4%), fundraising campaigns (7.4%), digital membership programs (5.6%), paid online exhibitions (2.8%). ICOM, “Museums, museum professionals and COVID-19. Third survey,” 5-11.

Table 12. **Percentage of financial strategies during the pandemic**

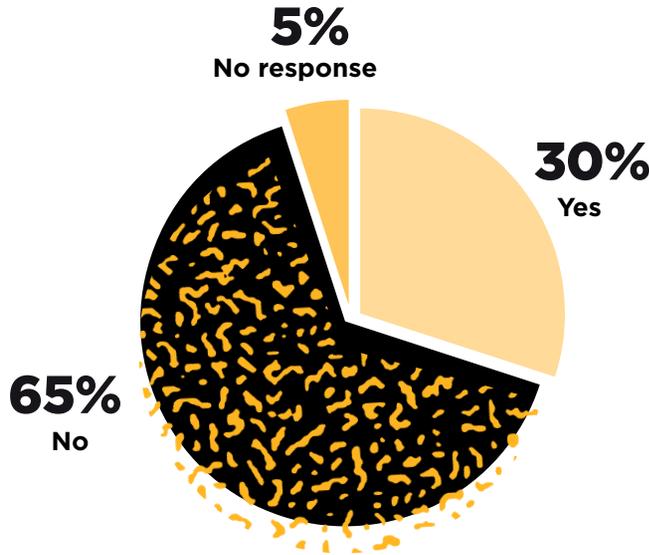


Table 13. **Recently implemented financial strategies**

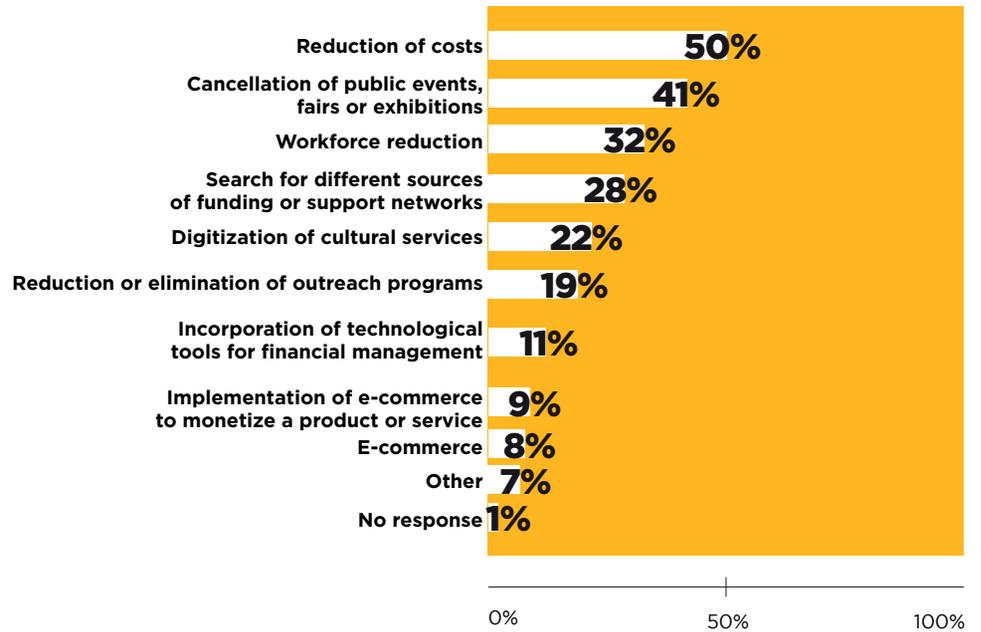


Table 14. **Perception of the contribution of technology to increase income**

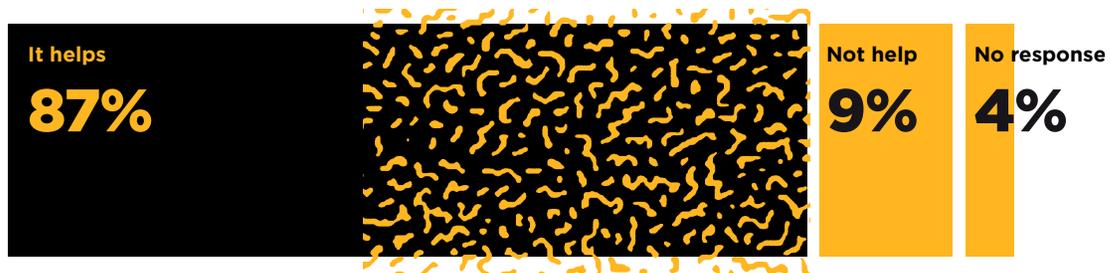


Table 15. **Museums forced to renegotiate contracts due to challenges generated by the pandemic**

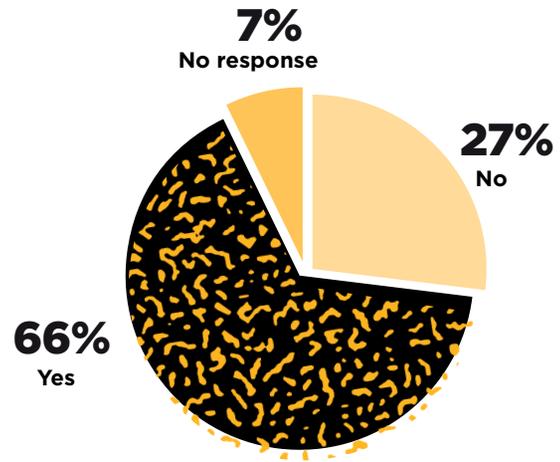


Table 16. **Other financial strategies**

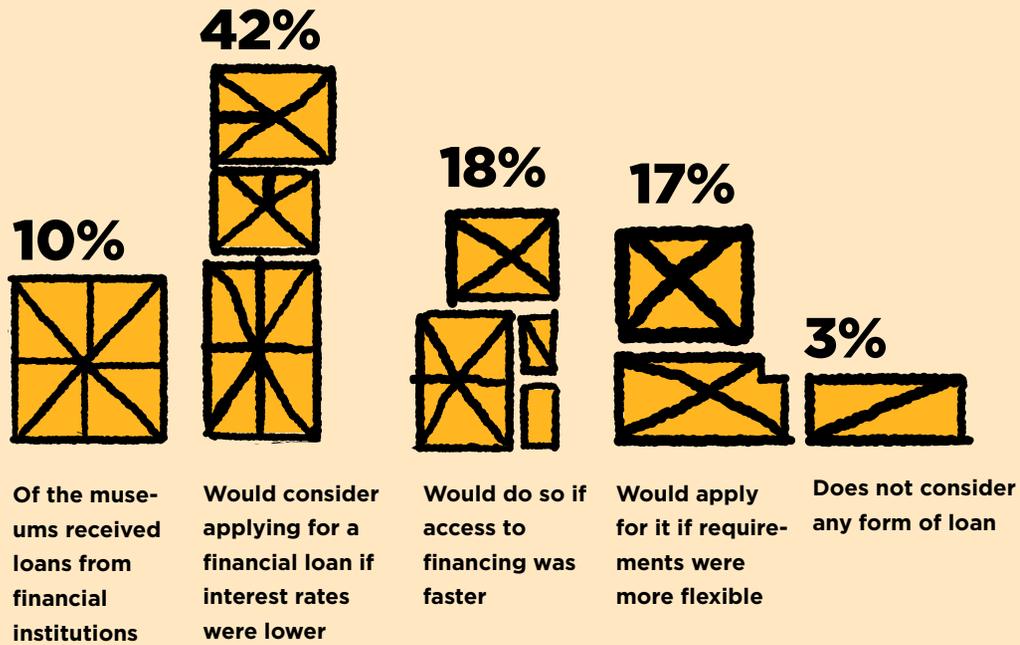
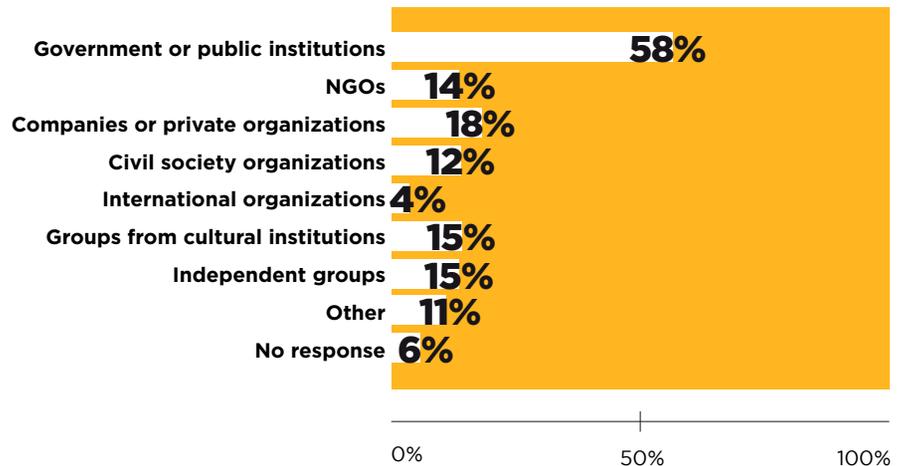


Table 17. **Support networks for sustainability**



ICOM published a “Statement on the necessity for relief funds,” in the face of the museum world crisis. They urge policy and decision-makers to “urgently allocate relief funds to salvage museums and their professionals,” in doing so, museums “can survive the lockdowns and continue their vital public service mission once it is over, for the generations to come.”<sup>33</sup>

Support networks for financial sustainability have been very important during the pandemic: 15% of the respondents mentioned independent collective networks and 15% recognized groups of cultural institutions. But either federal or local governments seem to have been their main ally (58%). It is also worth noticing the sense of solidarity that has emerged. 46% of museums have helped other institutions and 69% consider that the community has become mutually supportive.

### **Digital Transformation: The Challenge that Became Urgent**

Given the unexpected situation caused by the outbreak of the pandemic, two scenarios were foreseen. The first was to be led by museums with already digitized collections, focused on developing entirely digital content. On the other hand, there was the need for other museums to work on this transition, simultaneously. Some institutions had to deal with new formats not suitable for their needs, or that did not fit them. For some museums, going from face-to-face interactions to digital environments meant losing close communication with their public. Their biggest challenge was finding a way to keep reaching their audiences.

The pandemic has led to effects of transformation and disruption with a great impact on: 1) museum organizations 2) how they incorporate digital technologies and social networks as core activities, aiding the creation of their cultural offer 3) their financial strategies 4) their relation to physical and digital audiences.

Before being active in social networks was a given for some museums in LAC, they maintained websites, and hired a *community manager* as part of their organization chart. Globally, in May 2020, 22% of museums had full-time staff working on digital activities. This figure is more significant in North America and LAC, 35.2 and 35.8%, respectively, quite higher than the 17.9% from Europe. Regarding the museum’s resources spent on digital activities, 27% of the respondents said that they allocate around

<sup>33</sup> “Statement on the necessity for relief funds,” ICOM, accessed July, 1, 2021, <https://icom.museum/en/covid-19/advocacy/statement-on-the-necessity-for-relief-funds/>.

5% of their budget to that effect. That figure leaps up to 40.6 and 24.4%, in North America and LAC, respectively.<sup>34</sup>

The health crisis and lockdown marked the beginning of a mandatory migration to digital platforms in the sector. Museums in LAC were forced to go beyond their traditional way of using social networks, to convey their cultural activities. Taking into account their context, they have drawn up appropriate objectives and medium and long-term digital plans to strengthen interaction with their audiences, rethinking their offer, and designing new experiences adequate for remote platforms. To achieve this, changes have been made regarding human capital, strategies broadening dialogue and interaction with the public, and rethinking the organization of museum staff. Koldo García, co-founder of Mad Pixel, a technology company specialized in museums, and CEO of Second Canvas, a platform composed of a CMS and various solutions aimed at generating rich and interactive digital experiences with the museum's collections, exhibitions and activities, explains: "The positive side of the pandemic is that it has finally made it clear for museums and decision-makers that the challenge for digital transition is paramount. This was already something clear, especially among the IT department staff, but was not so evident to the management or to others in the organization chart."<sup>35</sup>

Some museums, particularly in rural contexts and in subregions like Central America and the Caribbean, reacted more slowly to the digital urge, either due to budget cuts or to lack of digital access among their populations, not only in terms of connectivity but also in terms of lacking digital devices. The technological access asymmetry throughout LAC countries is a common situation, since "the digital divide is directly connected and related to social inequality."<sup>36</sup> As Eugenia Lindo, director of the Museo de Arte de El Salvador (MARTE), explains:

The problem we have in El Salvador, which I suppose is the same in Latin America, is limited access to the internet, which absolutely restricts our digital strategy. On the other hand, being aware of how art can provoke discussions and move people emotionally in a face-to-face interaction, I think it is better to focus on hybrid projects, not trying to merely substitute a physical experience for a digital one.<sup>37</sup>

<sup>34</sup> ICOM, "Museums, Museum Professionals and COVID-19. Second survey," 9-13.

<sup>35</sup> Koldo García (co-founder of Mad Pixel and director of Second Canvas), interview by Luis Vargas Santiago, February 17, 2021, video.

<sup>36</sup> Américo Castilla (director of Fundación TyPA), interview by Luis Vargas Santiago, March 23, 2021, video.

<sup>37</sup> Eugenia Lindo (director of the Museum of Art of El Salvador), interview by Luis Vargas Santiago, February 17, 2021, video.

Novel digital strategies within museums have occurred with mixed results, confirming the preexistence of the digital divide before the pandemic. The lack of universal connectivity in the region and the poor digital literacy among segments of the population, combined with the lack of skilled training of museum staff, results in a significant handicap for some institutions.

COVID-19 hastened the learning process for institutions and museum professionals. They had to swiftly adapt to change, in order to compete with other museums both in their country, in their region, and also worldwide. This had a positive effect on some museums, broadening their audience, and extending their geographical scope. But it also meant dealing with more competitors supplying more media content, and with the challenge of still reaching their face-to-face audience, gained before the pandemic. According to 67% of the respondents, their traditional audience was no longer the same: geographical composition had changed. However, for most of them, diversely expanding their audience has not translated into increasing figures. 59% of museums believe that their audience decreased in comparison to the visitors they had prior to March 2019. But 27% of them consider that their audience did grow on digital platforms. Such discrepancy can be explained due to different investments and an already existing digital structure in some institutions and to the lack there of in some others.

Museums previously on the way of digitizing their collections and building remote audiences, were better placed to capitalize on their experience and expand their programming during the pandemic. As a result of their temporary closure in 2020, 75% of museums considered it necessary to increase their digital programming and 77% considered it necessary to rethink their digital strategy.<sup>38</sup> In LAC, most of the leading institutions in the digital arena are either big metropolitan museums or museums supported by private technology foundations grants, enabling them to previously invest in digital innovation. According to ICOM, “big museums are better equipped than small and medium ones to reach their publics remotely, as they need adequate support in their digital transition by developing human and financial resources.”<sup>39</sup>

An interesting case of disruption in a private museum is the Museo de Arte de Lima (MALI), in Peru. José Carlos Mariátegui, consultant for MALI and founder of Alta Tecnología Andina, a technology art company focusing on the production of artistic projects and even digital solutions, assures that, although there is much to be learned in the digital field, significant progress has been made:

<sup>38</sup> ICOM, “Second survey. Museums, Museum Professionals and COVID-19,” 9-13.

<sup>39</sup> ICOM, “Third survey. Museums, museum professionals and COVID-19,” 5.

It has been interesting witnessing the recent emphasis on digital projects at MALL. Their digital structure went from being very simple, dated literally from the last century, to generating the foundations of digital sustainability, and enhancing visibility for their archive and collection. We have completed an interesting digital transition. Now every source of information is fully developed; we have created *dash codes* for content, information, data...<sup>40</sup>

Another outstanding example in the public field is the project #MuseoDigital, from Museo Universitario Arte Contemporáneo (MUAC) at UNAM, in Mexico. With the support of Fundación Telefónica, MUAC started a digital transition program in 2017. To date, two international symposia on digital innovation issues have been organized, a fair with technology developers, and a publication.<sup>41</sup> During the pandemic, the project has also resulted in interesting digital content programming.

Digital transformation for most museums in LAC has not been a fast process. Due to the financial crisis, it has been practically impossible for them to invest in new digital platforms or in the development of software of their own. Hence, a great part of their digital strategy has been focused, almost entirely, on social networks (Facebook, Instagram, Twitter, TikTok) and other free platforms (YouTube, Spotify, Google Classroom). Live streaming and interaction with audiences for non-informative purposes like expanded activities for children, young and segmented audiences has increased significantly, attracting a new public.

At the same time, museum teams (curators, guides / mediators / educators, installation crews, archivists, registrars and so forth<sup>42</sup>) have had to work remotely, developing skills and tools that allowed them to complete their tasks. In some cases, museum professionals have also created digital content to communicate with their public and keep them interested. An example is the task of the curator or conservator, usually working away from the spotlight, but becoming during the pandemic a content creator.<sup>43</sup>

<sup>40</sup> José Carlos Mariátegui (founder of Alta Tecnología Andina), interview by Luis Vargas Santiago, February 19, 2021, video.

<sup>41</sup> Mónica Amieva and Luis Vargas Santiago (eds.), *Museo digital. Futuros y posibilidades* (México: MUAC-UNAM/Fundación Telefónica, 2019). Available at: <https://www.fundaciontelefonica.com.ve/publicaciones/museo-digital/684/>.

<sup>42</sup> To learn more about the organization plan and personnel working at museums, it may be useful to read: “Museum and human resources,” Eve. Museums and innovation, April 30, 2015, accessed June 2021, <https://evemuseografia.com/2015/04/30/museos-y-recursos-humanos/>.

<sup>43</sup> “Art Conservation in 2020 || Being a Conservator During Bushfires, Lockdowns and Closures!,” The Conservation Starter, January 26 2021, accessed June 2021, <https://www.youtube.com/watch?v=ftrjVXNPPso>.

The greatest challenge identified by the interviewees on this topic was to train teams on how to work while keeping in mind online audiences and catching their attention; and ensuring proper operation of the organization, despite limited financial resources. Teleworking became a fundamental part of the working process and, like with other industries, staff has adapted to digital platforms such as email, WhatsApp and video conference software like Zoom, Microsoft Teams or Google Meet. According to a survey conducted in April 2020 by the Instituto de Liderazgo en Museos, and the Cultural Division of the Universidad Nacional Autónoma de México, only 37% of museums had technological working tools and less than half of their personnel and professionals (40.7%) had a computer and internet connection at home.<sup>44</sup>

For those workers in LAC not used to digital platforms, museums, companies or organizations such as Ibermuseos, either prepared or guaranteed access to training courses, thus speeding up learning and keeping their institutions alive, in other words, reorganizing communication with and among their staff. Koldo García, cofounder of Mad Pixel and director of Second Canvas, narrates their work with museums to facilitate their digital transition, thinking of a natural way of including users into a scenario adapted to its usability context: “The idea is [...] to turn these technologies into *commodities* that anyone can use, developing everything to simplify these digitization processes, making them faster, cheaper, and guaranteeing people easy training.”<sup>45</sup> Ibermuseos surveys conducted among museum professionals yielded similar results, as Mônica Barcelos points out:

We realized that the greatest need for those professionals surveyed is training; and information access to enhance their knowledge. This is an area in which Ibermuseos has invested for seven years... We are constantly discovering a greater need and a greater interest from professionals to continuously strengthen their knowledge and their technical skills, expanding on them, looking out for them in new sources.<sup>46</sup>

The IDB has actively contributed to training and professional updating in the LAC museum sector through OPEN MUSEUM, a platform for sharing information sources, solutions and innovations, in order to listen to their

<sup>44</sup> “Museos e instituciones culturales mexicanas en tiempos de pandemia,” Institute of Leadership in Museums, May 2020, accessed June 2021, <https://ilmuseos.org/assets/blogfiles/27-05-2020/reporte-museos-e-instituciones-mexicanas-en-tiempos-de-pandemia.pdf>.

<sup>45</sup> García, interview.

<sup>46</sup> Barcelos, interview.

community's needs and actions. The project is primarily aimed at professionals from the museum sector (public officials, cultural managers, curators, conservators, managers, directors, and so on), as well as the entire creative ecosystem of cultural institutions (from artists to suppliers).<sup>47</sup>

## Where Are We Heading?

Museums globally are being faced with both a challenge and an opportunity, to overcome the crisis exacerbated by COVID-19, and at the same time to transform themselves into sustainable and relevant institutions from a social and educational perspective. There is a specific challenge for LAC that can be added to this, to provide museums with technological infrastructure and guarantee the accessibility of their digital content to larger segments of their population, in other words, to bridge their digital divide.

Américo Castilla, director of Fundación TyPA in Argentina, believes that the pandemic came with an opportunity for institutions to reflect upon their identity, mission, and meaning but also upon their interactions, their sustainability, and their ability to react to their biggest and aggravated fear since the onset of this crisis: financing.<sup>48</sup> Meanwhile, Silvia Singer, director of the Museo Interactivo de Economía in Mexico (MIDE), observes that “the pandemic accelerated our learning [...] had not been for the pandemic, we would not have realized why we were failing as institutions, grasping that more is not necessarily better, since we have had a lot of competitors.”<sup>49</sup>

Economic stability for museums must derive from new management and business models, combining not only public subsidies and donations, but also new areas for development and alliances that allow them to ensure their basic activities such as the conservation of their heritage collections, maintenance of their facilities and their infrastructure, and expanding their programs and educational mission.

47 OPEN MUSEUM is also an up-to-date and carefully curated repository of resources, reimagining and inspiring LAC museums from the point of view of innovation. In addition to networking chances, thought-provoking articles and cutting-edge ideas, the platform displays tools for digitizing collections and exhibitions, as well as a selection of good practices in digital curatorial practices. It is divided into three main sections: Museums and COVID-19, Art and New Technologies and Digital Curatorial Practices). “OPEN MUSEUM,” Inter-American Development Bank, accessed July 4, 2021, <https://cursos.iadb.org/es/indes/open-museum>.

48 Castilla, interview.

49 Silvia Singer (director of the Museo Interactivo de Economía in Mexico), interview by Luis Vargas Santiago, March 2, 2021, video.

Among the interviewees there is consensus that public awareness should be raised about the importance of cultural heritage for a more inclusive society rooted in identity. Regarding sustainability, they affirm that economic strength might be attained through two strategies. First, public policies that shield institutions and their financial autonomy, and second, earmarked taxes for their own benefit. In Silvia Singer's opinion:

Patronage, which is private funding in museums, is fundamental because there must be a counterweight to public financing. We cannot afford to have a monopoly of culture, a monopoly of education. We should embrace all possible ways of diversification. There are people, companies, and institutions willing to donate [...] it is a habit that we should help grow in our region.<sup>50</sup>

Another challenge is to recover the audience that has not come back after reopening, as it was expected. According to different specialists and museum directors, the return of visitors will depend on each institution's ability to remain socially relevant. Despite the fact that it has been several decades since some museums have fostered close relationships with their communities, social movements during the pandemic, such as Black Lives Matter in the United States or feminist struggles in Latin America, highlighted that they also need to develop active roles within their communities and within society. This is particularly important in the context of struggles for equal rights, social justice, universal accessibility, and ecology.

Dolores Béistegui, director of Papalote Museo del Niño in Mexico, thinks that one key lesson that can be drawn from the pandemic is that users will continue supporting only those museums that they consider are paying them back. In LAC, the reactivation of museums has not received the same support given, for instance returning to school. According to Béistegui, this proves that something has not been working for a long time:

I cannot wait for a public policy or a guideline to start seriously working on serving a museum's community way better. To understand not only those who come, but also those who do not come and their reasons. In my opinion, you can't depend on any public policy. Perhaps, if we admit the importance of impacting our communities, we can create tools for better understanding them.<sup>51</sup>

<sup>50</sup> Singer, interview.

<sup>51</sup> As quoted in Sergio Rodríguez-Blanco, "¿Hay futuro para los museos tras la pandemia?," *Gatopardo*, October-November 2020, 89-99.

How to capitalize on what has been learned and achieved so far? The challenge for museums regarding their audiences is twofold: on one hand, it implies the consolidation of new audiences (those arriving for the first time and those who are yet to arrive); on the other, it requires dazzling the usual audiences that were used to visiting museums.

According to the respondents, the way audiences have reacted to the challenges and changes brought by the pandemic is overall positive. While 80% of them report a positive reaction in their public, another 67% believe their audiences are more diverse. And, although 59% of them consider their face-to-face audience to have decreased, interestingly another 27% think it actually has grown, since they now may be considering an audience that was not previously visible or accessible to them.

Table 18. **Audience reactions to changes implemented during the pandemic**



Table 19. **Audience changes as a result of the pandemic**



A third challenge is a hybrid scenario arising from museums combining face-to-face activities with digital programming, interacting with audiences conquered during this time. The urgent transition of LAC museums to the so-called digital age is inevitably linked to these challenges. Such transformation will only be possible by bridging the digital divide and by strengthening the management and budgetary systems currently used in most of LAC museums, and, finally, by renewing their financing structure.

In terms of digital disruption, innovation must include both technological features and strategic planning for the future. Speaking about

technology, the most prominent innovation reported is the digitization of collections and other museum display equipment. Some museums already had appropriate technological tools before the pandemic, but others had to buy hardware and software for this purpose. The digitization process in many cases came with the need to adapt to platforms museums were not used to, such as Instagram and TikTok, to attract younger audiences. The importance of having broadband access has become so clear that in isolated regions collections can be seen in high definition, and to help improve workshops and seminars for school audiences.

Due to their experience in different types of museums, the interviewees disagree on how the industry should relate to new technologies in a post-pandemic context. Not everyone considers that museums can turn to hybrid scenarios, combining face-to-face activities with online experiences. Since some collections are not big enough, they require a more intimate interaction with their visitors. Such is the opinion of Eugenia Lindo, from the Museo de Arte de El Salvador: “I believe that artworks do not fit in the digital world. Even if you have the perfect lighting for reproducing those effects, it is never the same to see a work in a theater than to see it on a screen. Because art itself requires being next to the work. You may do it on a screen, but I really don’t believe that [the physical experience] can ever be replaced.”<sup>52</sup> Faced with the idea of the digital museum on internet platforms, some institutions have turned to outreach programs, leaving their physical facilities to meet with their communities. Bolivia is a good example of this type of strategy. For Elvira Espejo, from the Museo Nacional de Etnografía y Folklore in La Paz, Bolivia, technology can be a “discriminatory environment [...] exclusively for upper and middle urban classes. It is a serious problem, since indigenous communities are never considered. For that reason, it is always important for my institution to look for a balance. If we cannot reach the communities by digital means, we do it through portable museum devices, which travel to the localities, following biosafety protocols, in order to balance culture access.”<sup>53</sup>

In the future, the need for cooperation among LAC museums will grow in order to support their networks to face economic, social, and digital challenges. Likewise, innovation must be built not only from a technological point of view but also from an institutional point of view.

52 Lindo, interview.

53 Elvira Espejo Ayca (director of the Museo Nacional de Etnografía y Folklore in Bolivia), interview by Luis Vargas Santiago, March 16, 2021, video.

# 2. Reimagining Museums: Between the Face-to-Face and the Digital Experience

There will be no future for museums if we do not start researching, innovating, experimenting and thinking how we imagine digital museums.

—**Silvia Singer**, general director of the Museo Interactivo de Economía



The crisis triggered by COVID-19 has urgently challenged many sectors to reinvent themselves, as a survival reflex, but also as an opportunity to take a step forward and look into their future(s). The museum field is not an exception to this case, and has had to embrace the act of “reimagining itself,” a term coined by Américo Castilla, founder of the “Reimagining the Museum” Conference since 2015. The event has emphasized the ability of museums to reformulate social, cultural and environmental beliefs, providing alternative perspectives on critical dilemmas.<sup>54</sup> Digital policies implementation plays a central role in reinventing museums. These policies should be built on global discussions taking into account internet access (considering the digital divide in each region), digitization of collections (based on their inventory), a basic IT infrastructure (photography equipment, scanners, computers), and above all, a high-skilled staff with enough time to carry out these tasks.<sup>55</sup>

Our research revealed five traits that sum up new strategies and trends for museums in Latin America and the Caribbean: hybrid museums, digital technologies, sustainable collections, audiences taking center stage, and new business models.

### **Hybrid Museums, the New Normal?**

The so-called “new normal” imposes a museum paradigm different from the one we have known, one that struggles between the physical and the digital world. Large crowds, blockbuster exhibitions and the expensive touring of international exhibits with exchange of works between museums, which were a hallmark of globalization, now seem unrealistic. In a world restricted by social distance measures, having to deal with borders, customs, and mandatory consideration of the carbon footprint impact, we must rethink the future of museums.

After the attendance reduction due to biosafety protocols and sanitation measures, museums had to radically rethink physical interaction at their facilities, especially at those venues heavily dependent on direct contact with their public and even at those used to deal with huge audiences. Touching, feeling, smelling, listening or tasting to experience or learn in museums, sharing physical space, technology and other museum

<sup>54</sup> “About the Conference,” Reimagining the Museum, Accessed August, 31, 2021, <https://elmuseoreimaginado.com/en/about/#the-conference>.

<sup>55</sup> See, “2015 Recommendation Concerning the Protection and Promotion of Museums and Collections,” UNESCO, issued May 28 2015, accessed June 2021, [www.unesco.org/new/en/culture/themes/museums/recommendation-on-the-protection-and-promotion-of-museums-and-collections/](http://www.unesco.org/new/en/culture/themes/museums/recommendation-on-the-protection-and-promotion-of-museums-and-collections/).

devices, have become forbidden activities. Although some consider that once global herd immunity has been reached museums will regain a central place in face-to-face social interaction, it is very likely that biosafety and hygiene measures, social distancing and visitor-capacity limitations will not go away. That is, at least, a shared opinion among interviewees when asked about which changes they believe will be permanent even after the health crisis is over. Digital interaction is a conquered territory from which a large number of museums will profit in the future. Hybrid museums represent a major opportunity to rethink experiences beyond physical factors, to focus on the study and dissemination of collections, and to communicate digital content attracting new audiences. To achieve this, digital technologies must facilitate interactions and learning processes inside and outside museums. Besides, this model also offers a chance for museums to redesign the way they interact with society, redefining their contribution to traditional fields such as health, education and life in the cities.

57% of the respondents think that digital platforms and technological tools helped a lot with the operation of their museums; 21% think they helped in some way; 12% think they barely helped; and only 5% think they did not help at all. However, this technological enthusiasm contrasts with current technological infrastructure at museums: At least 44% of respondents consider it is unsatisfactory; 31% think it is adequate; and 24% that it is ideal.

When analyzing the platforms used by LAC museums before and during the pandemic, it becomes clear that although social networks and websites are the most widely used digital tools, their importance decreased considerably leaving place to other platforms and / or tools. As for social networks, 68% of respondents said they used them before the pandemic, compared to 55% who said they continued to use them during the health crisis. The use of websites, in terms of digital relevance, increased from 55 to 44%. This does not mean dropping digital content, but rather a transition, and the creation of tailored-content for other platforms and formats. Studying the growing importance of the following items before and during the pandemic may be thought-provoking:

Table 20. **Platforms or digital tools used by LAC museums**

Type of platform	Percentage of museums using them before the pandemic	Percentage of museums using them during the pandemic
Social networks	68%	55%
Websites	55%	44%
Virtual tours	18%	35%
Online streaming of events	14%	31%
Teleconferences	11%	27%
Advertising campaigns and digital communication	19%	24%
Virtual reality	10%	16%
Online Collections	13%	15%
Podcasts	7%	13%
Online ticketing	4%	7%

As stated on OPEN MUSEUM, the online IDB initiative, amid the fragility of museums exposed by the pandemic, “new technologies have allowed them to maintain their relevance and be there for their communities during lockdown, by making their collections and programs available at no cost for their enjoyment. This unexpected, sudden and great experiment could be a turning point in expanding and generating new audiences, redefining the role of museums within the creative and cultural industries rich ecosystem.”<sup>56</sup> The diversification of their digital content expanding into new platforms and formats demonstrates a deeper understanding of the medium, and confirms how museum staff aptly transitioned from analogue to digital practices, in the context of the novel relevance technology and digitization have acquired for museums in the future.

## Digital Technologies: Why and How

Use of digital technologies at museums has increased notably, turning into a world trend.<sup>57</sup> Some of these technologies are augmented reality<sup>58</sup>,

<sup>56</sup> Inter-American Development Bank, OPEN MUSEUM.

<sup>57</sup> Gregory, “The Big Trends Transforming Libraries.”

<sup>58</sup> Charlotte Coates, “How Museums are Using Augmented Reality,” Museum Next, September 17 2020, accessed June 2021, <https://www.museumnext.com/article/how-museums-are-using-augmented-reality/>.

virtual reality,<sup>59</sup> artificial intelligence<sup>60</sup>, 3D digitization, IT software, increasingly sophisticated hardware and other gadgets. Before, technology was seen as a pertinent medium to amplify the message aiding to convey experiences (as a means but not the end). But now its importance for dissemination and diversification of museum content during lockdown seems to be increasingly undisputable.<sup>61</sup>

According to some museum directors, the pandemic has shown that in order to reach younger demographics used to spending their time on cell phones, tablets and laptops, it is necessary to understand how digital platforms can communicate museum programs to a new audience. Silvia Singer, from the Museo Interactivo de Economía, states:

For us to launch a digital museum, two things must happen... We, the people making the museum, have to be digitized; you can't afford to ignore everything about TikTok and pretend you can conquer TikTok; you cannot start a conversation without knowing your way around Zoom or not knowing how to turn on your computer. In other words, the museum staff has to be digitized so that we can digitize the museum. For me it's very clear that it's not about hiring the best architect so he/she can praise their personality through a building... It's about making a list of what the museum needs are and then asking an architect to come and figure them out.<sup>62</sup>

However, digital technologies are frequently expensive, requiring constant updating, which makes them unaffordable for LAC museums, as confirmed by 89% of the respondents. Among them, there is general consensus on the fact that technological innovation is mandatory for the field, but financial resources are not enough. As for available technical skills, 30% of museums strongly agree, and 49% agree, that although digital innovation is important, there is a lack of infrastructure to develop it.

The lack of familiarity with technology from staff and the lack of digital literacy and digital skills training, widen the digital divide at museums in

<sup>59</sup> Charlotte Coates, "Virtual Reality is a Big Trend in Museums, but What Are the Best Examples of Museums Using VR?," *Museum Next*, July 17, 2020, accessed June 2021, <https://www.museumnext.com/article/how-museums-are-using-virtual-reality/>.

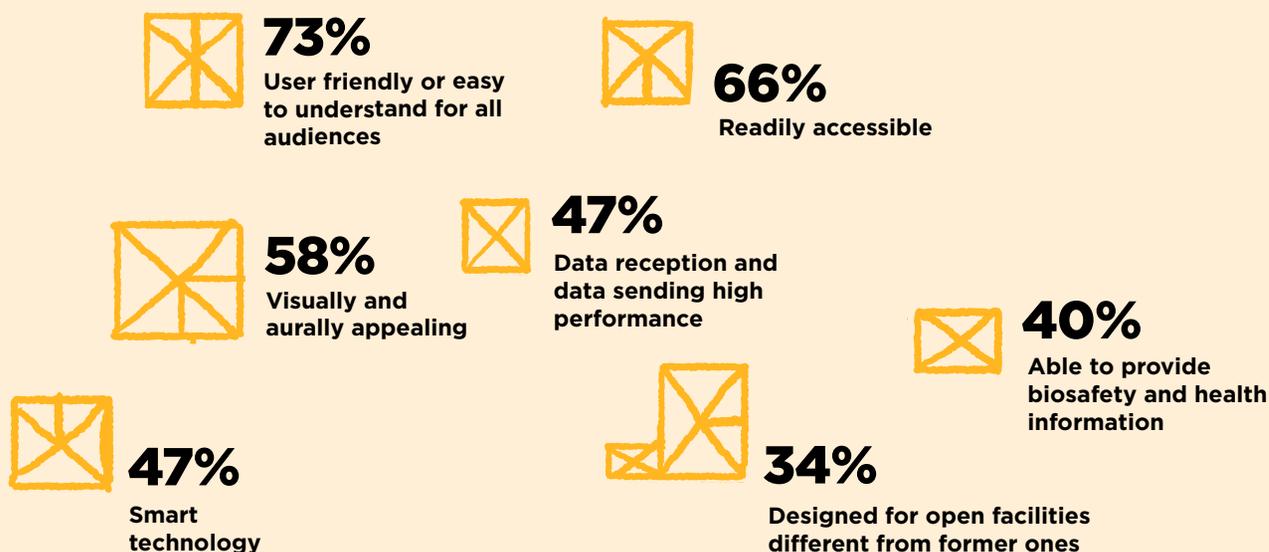
<sup>60</sup> Elizabeth Merritt, "Exploring the Explosion of Museum AI," *American Alliance of Museums*, October 2, 2018, accessed June 2021, <https://www.aam-us.org/2018/10/02/exploring-the-explosion-of-museum-ai/>.

<sup>61</sup> On the discussion of digital culture in LAC museums prior to the pandemic, see Amieva and Vargas Santiago, *Museo digital. Futuros y posibilidades*.

<sup>62</sup> Singer, interview.

the region. This could explain the reduced implementation of open source coding and open source technologies at no cost and readily accessible.<sup>63</sup> In this regard, there are great opportunities for investment in digital training and staff professionalization, as well as for creating alliances and productive programs, conducted by the economy and innovation divisions of governments and universities in the region, so that local developers can create technology and digital solutions at competitive prices and customized for their specific needs. These alliances can also be established with other industries such as edutainment, tourism or video games.<sup>64</sup>

Table 21. **The most important features digital developments must have for museums are:**



<sup>63</sup> Bibliothack is a great example of a project for digital transformation of libraries, archives and museums using technology appropriate for the specific context of the Global South, according to principles of open access and open technology. "Bibliothack," accessed March 21, 2021, <https://bibliohack.org>.

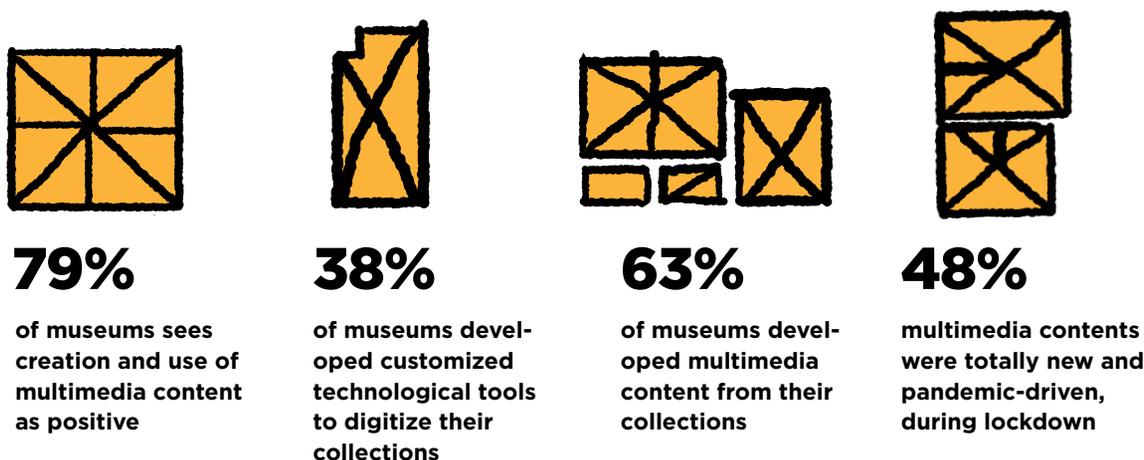
<sup>64</sup> On video games, see below (chapter III) the case of Animal Crossing and its partnership with museums such as the Metropolitan Museum in New York or the Thyssen Museum in Madrid. It is also worth considering live streaming platforms such as Twitch, where virtual museums, parks and aquariums are starting to emerge. Elizabeth Wallace, "How Twitch Can Help Museums Cultivate New Audiences," Jing Culture & Commerce, January 7, 2021, accessed June 2021, <https://jingculturecommerce.com/how-twitch-can-help-museums-cultivate-new-audiences/>.

## Now that My Collection Is Online, What's Next?

In most museums of LAC countries, the most severe problems for collections inventories have remained unsolved, and there is few staff available to work on their digital strategies. Nonetheless, there are significant opportunities for them, not only to build digital repositories of their inventories, but to complete them according to cataloging and digitization guidelines and international documentation, preservation, copyright and reproduction standard protocols.<sup>65</sup>

The pandemic-driven trend of going back to collections and creating new digital content out of them has not automatically translated into an increasing number of online collections. For museums that were already on their way to digitizing their collections (or having 3D rooms and / or exhibitions), lockdown and temporary closure implied shutting down essential procedures such as cataloging, photographing, scanning and conservation of collections. For those without any digital record, the challenge was even greater, making the need of human resources and infrastructure clear in order to create their own digital collections.

Table 22. **Collections and digitization trends during the pandemic**



<sup>65</sup> According to experts: “Legislation, copyright, intellectual property, tax convergence, new formats, public support schemes and attracting audiences are central axes of the new virtual territory. It is necessary to rethink production of national and regional content towards greater dissemination, internationalization, promotion and export of our work.” Cfr. “Evaluation of the impact of COVID-19 in the Cultural and Creative Industries.”

It will be crucial for museums in the region to continue looking for adequate and sustainable methods to complete suitable digitization of their collections and exhibitions. To achieve this, the specialists interviewed suggest developing strategic plans addressing the following issues in the near future:

- Accurate cataloging and long-term digital preservation of collections, through repositories and databases following international Semantic Web standards and digital sustainability strategies.<sup>66</sup>
- Metadata Harvesting / Collection through APIs (application programming interfaces) and open sources.
- Development of digital competences and professionalization of staff.
- Supporting technology development companies that can help museums in their digital transformation and in providing data intelligence and automated cataloging.<sup>67</sup>

One such successful project launched in the region is the Digital Archive of Peruvian Art (ARCHI), as a partnership between MALI and the Daniel Giannoni Photographic Archive, and with the alliance of the Ministry of Culture of Peru.<sup>68</sup> This novel digital repository follows international standards for cataloging, metadata collection and digital preservation. Financed by both public and private sources, this open data platform allows users to download legal copies of digital objects,

<sup>66</sup> Recently, the University of Geneva published a report on public policies and protocols for the digitization of museum collections that could be very useful for LAC museums. “Policy Paper on the Digitization of Museum Collections,” Art-Law Center, Digital Law Center, University of Geneva, December 11, 2020, accessed June 2021, <https://www.digitizationpolicies.com>.

<sup>67</sup> According to Tom Gregory, “Machine learning and ‘reasoning’ has huge potential to help people access relevant information faster. For the cultural industry, this means even greater competition in the information space. But also new opportunities. The promise is that connecting data from our collections and catalogs will help us build a new map of human knowledge, discover new truths and become a more informed and enriched society. experts discussed how AI could help speed up the cataloging and digitization of collections by doing some of the ‘boring stuff’. The AI might be able to describe what’s in an image, what color it is or what a passage of text says. In fact, AI is already being used to recognize art style and objects, mine the Vatican’s archives, and provide personalized experiences via facial recognition. Yet, a post on IFLA’s blog makes the point that AI is prone to inherent bias and discrimination, since it is merely making use of the data available to it. Therefore, the role of librarians, information professionals and cultural institutions in helping people find reliable information becomes even more important. As information becomes easier to access, so must our tools be sharper to discern fact from fiction.” Gregory, Tom. “The Big Trends Transforming Libraries.”

<sup>68</sup> See chapter III below.

adopting monetization strategies aiming at sustainability.<sup>69</sup> Likewise, “M68. Ciudadanías en Movimiento,” a memory and archive project by UNAM in Mexico, works as a digital repository on social movements in Mexico gathering more than one hundred thousand digital objects, from around thirty collections and public and private archives. The repository employs machine learning and Semantic Web cataloging principles to facilitate researching tasks, interconnection with other databases and better understanding of users and their interests.<sup>70</sup> This repository has a physical counterpart that unfolds as an interactive museum at the Tlatelolco University Cultural Center. Google Arts & Culture, another rather long-lived platform, has been working on digitization of collections and 3D virtual tours for major museums and cultural centers.<sup>71</sup> From nearly 4,500 museums<sup>72</sup> more than 100 are collections in LAC. Brazil was the first country in the region to be a part of it, with the collections of Inhotim, the Fundação Iberê Camargo, the Instituto Moreira Salles and the Museu da Imagem e do Som available on the platform since 2013.<sup>73</sup>

Google search trends show a significant increase in audiovisual, digital and 3D photographic virtual tours during the first lockdown. “Year in Search,” the company’s report, describes how in the first half of the 2020 the terms “virtual field trip” and “virtual museum tours” increased ten-fold and even twenty-fold, globally.<sup>74</sup> This reality opens new opportunities for the dissemination of museum collections, for diversification

69 “ARCHI. Archivo Digital de Arte Peruano,” MALI, accessed March 23, 2021, <https://archi.pe>.

70 “M68. Ciudadanías en movimiento,” Centro Cultural Universitario Tlatelolco, UNAM, accessed on June 19, 2021, <https://www.m68.mx>.

71 Google Arts & Culture (formerly Google Art Project) is a website developed by the Google Cultural Institute, gathering high resolution images of art works exhibited at museums and galleries around the world. It also offers virtual tours of these galleries and museums. The browsing technology for the museums is the same employed by Google Street View. “Google Arts & Culture,” Google, accessed June 3, 2021, <https://artsandculture.google.com>.

72 Romullo Baratto, “Visit Over 4,500 Museums and Sites Worldwide From Your Desk With Google Arts & Culture,” ArchDaily, March 19 2020, accessed June 2021, <https://www.archdaily.com/870086/visit-over-2500-museums-worldwide-from-your-desk-with-google-arts-and-culture>.

73 Henrique Duarte, “Quatro museus brasileiros estreiam coleções no Google Street View; veja,” Techtudo, December 6, 2013, accessed June 2021, <https://www.techtudo.com.br/noticias/noticia/2013/12/quatro-museus-brasileiros-estremam-colecoes-no-google-street-view-veja.html>.

74 “The year in search 2020,” Google, accessed June 26, 2021, <https://about.google/stories/year-in-search-2020/>.

of mediation and virtual education strategies and the creation of jobs in the digital services market.

## Audiences Taking Center Stage

LAC museums have learned to know their audiences better thanks to social networks (Facebook, Instagram, Twitter, TikTok) and other digital platforms such as apps, websites, virtual tours and streaming. 80% of the respondents consider that due to this knowledge, they have been in the position to modify and adapt both their online interaction and their digital content. Naturally, digital platforms encourage a more active participation of audiences and enable feedback channels such as chats, comments and likes on posts that are less intimidating for the public.

According to several experts, interactions between museums and their digital audience are still very limited compared to the possibilities offered by face-to-face visits or interactions,<sup>75</sup> mainly due to digital users losing interest shortly after browsing through any museum website. To cope with this situation and search for new ways to connect with audiences, some museums are designing specific content not only for social networks but also for tablets and cell phones.<sup>76</sup> It is essential to focus on the quality of the interaction, rather than on its frequency, looking for engagement, by favoring personalized and active interactions, not only between museums and users, but also among users themselves being part of active and empowered communities in the digital world.<sup>77</sup> Museums

75 Verity Burke, Dolly Jørgensen & Finn Arne Jørgensen, “Museums at Home: Digital Initiatives in Response to COVID-19,” *Norsk museum tidsskrift*, vol. February 2020, 117-123. [https://www.idunn.no/norsk\\_museumstidsskrift/2020/02/museums\\_at\\_home\\_digital\\_initiatives\\_in\\_response\\_to\\_covid-19](https://www.idunn.no/norsk_museumstidsskrift/2020/02/museums_at_home_digital_initiatives_in_response_to_covid-19).

76 On creating new physical audiences through TikTok, see Estefanía Grijota, “Adiós academia, hola TikTok: la estrategia sin complejos con la que la Galería Uffizi ha duplicado los visitantes jóvenes en tres meses,” *El País*, 18 October 2020, accessed June 2021, <https://elpais.com/icon-design/2020-10-18/adios-academia-hola-tiktok-la-estrategia-sin-complejos-con-la-que-la-galeria-uffizi-ha-duplicado-young-visitors-in-three-months.html>.

77 On the active role of museums digital communities, see “Pensar los contrapúblicxs digitales,” one of the activities from *Nombrar los vacíos*, project hosted at the Inés Amor International Chair in Cultural Management at UNAM in Mexico, during April 2021 (13 to16). The notion of “counter-audiences” (*contrapúblicos* in Spanish) serves as a tool for analyzing the mechanisms of circulation of discourses in the public sphere, where members of subaltern social groups create parallel discourses based on their identities, needs and counter-hegemonic interests, transforming not only cultural institutions agendas but also public debates and the social spectrum of those who participate in them. “Segunda sesión | Foro:

must ponder systematically and through complex diagnoses on who are these diverse and ever-changing audiences behind screens and monitors following their cultural programs. They should ask questions like: what makes them different from face-to-face audiences? What new models do they demand as independent actors taking free decisions? How can they be understood, read, measured and reached, especially after lockdown?

In designing their cultural online offer, museums must consider the digital divide that prevails in LAC, thinking outside the box when necessary, reaching audiences through low-tech technology, which minimizes data usage and can be displayed on smartphones and feature phones of wide-spread use among LAC population.<sup>78</sup> Who will have access to this offer and who will be left out? This is a question that museums should ask themselves.

Contrary to a passive-user approach, technology and the digital sphere are based on different rules. According to them, interactivity is center stage in many unexpected ways, whereas before it was confined to education departments or to venues adopting critical museology as their theoretical framework. The hegemony of encyclopedic museums and curatorial picks<sup>79</sup> is now challenged by the autonomy and freedom coming from digital communities, choosing and curating their own content, criticizing and giving feedback on social networks, promoting *hashtags* whether intentionally or unintentionally, hacking algorithms and downward communication flows, making deliberate decisions as consumers and promoting agendas of social, community and political activism. This was especially clear after the Black Lives Matter case in 2020. Nicolás Gómez, director of the Museo de Arte Contemporáneo de Lima, states,

[In the 21st century] those projects of great interest for museums are the ones devoted not to confirming official history but to contradicting it, amending it, subverting it or even improving it. More and more people are talking of “stories,” in the plural, because institutions cannot support

Públicos, contrapúblicos y recontrapúblicos,” Inés Amor Chair, UNAM, streamed on April 14, 2021, <https://www.youtube.com/watch?v=SAFIUtM9d4w&t=3106s>.

<sup>78</sup> In 2019, smartphones accounted for 69% of all mobile connections in Latin America, and their relevance is expected to increase to up to 80% by 2025. In the same period, the percentage of the population in the region with mobile phone access will increase from 68 to 73%. See: “Smartphone penetration in Latin America from 2019 to 2025,” Statista, July 2, 2021, <https://www.statista.com/statistics/218531/latin-american-smartphone-penetration-since-2008/>.

<sup>79</sup> Rebecca Carlsson, “Why we need museums now more than ever,” Museum Next, March 9 2021, accessed June 2021, <https://www.museumnext.com/article/why-we-need-museums-now-more-than-ever/>.

a single vision of the world, one that suits any given group. Museums are becoming great “parliaments” of the imagination but we must stick to a rigorous method, so that inclusiveness and plurality does not turn into some “anything goes” outcry, which now dominates most ideological discussions.<sup>80</sup>

Active listening to digital users can also strengthen the EDI agenda (democratization, equality, diversity and inclusion), as well as the cultural rights promoted by museums.

### **Are Digital Business Models Feasible for Museums?**

New management and business models involving IT are one of the actions museums have taken to tackle one aspect of the financial crisis the pandemic has pushed them towards. Among the most obvious and increasingly common solutions are online transactions (through e-commerce, wire transfers and credit / debit cards payment systems, PayPal, and so forth), which grew notably in private museums, especially for ticketing, courses, workshops, experiences, and store items such as books, memorabilia, contemporary design, decoration, and clothing. According to the American Alliance of Museums, online booking and purchase of tickets is becoming essential,<sup>81</sup> especially to control and regulate attendance in museums with limited capacity due to the pandemic.

Argentina, Brazil, Colombia, and Mexico are the top countries with ongoing e-commerce strategies for museums.

From 2019 to date, museums like the Museo de Arte Latinoamericano de Buenos Aires (MALBA),<sup>82</sup> the Museo de Arte Moderno de Medellín (MAMM),<sup>83</sup> the Museum de Arte de Lima (MALI), the<sup>84</sup> Museu de Arte de São Paulo (MASP),<sup>85</sup> the Museo de Arte Contemporáneo de Monterrey

<sup>80</sup> “Museos de arte en tiempos del coronavirus: conversan Bartomeu Marí y Nicolás Gómez,” Museum of Contemporary Art of Lima, accessed on May 21, 2021, <https://maclima.pe/2020/04/02/museos-de-arte-en-tiempos-del-coronavirus/>.

<sup>81</sup> “New Survey Predicts Post-COVID Booking Trends for Museums and Attractions,” American Alliance of Museums, accessed May 20 2021, <https://www.aam-us.org/2021/05/20/new-survey-predicts-post-covid-booking-trends-for-museums-and-attractions/>.

<sup>82</sup> “MALBA Tienda,” MALBA, accessed July 10 2021, <https://tienda.malba.org.ar>.

<sup>83</sup> “Tienda MAMM,” Museo de Arte Moderno de Medellín, accessed July 3 2021, <https://tienda.elmamm.org>.

<sup>84</sup> “La tienda del MALI,” MALI, accessed July 4 2021, <https://tienda.mali.pe>.

<sup>85</sup> “MASP Loja,” MASP, accessed July 3 2021, <https://www.masploja.org.br>.

(MARCO)<sup>86</sup> or the Museo Nacional de Bellas Artes (MNBA)<sup>87</sup> in Argentina, invested in customized solutions for their online stores, while others turned to specialized e-commerce companies like the agency Kichink,<sup>88</sup> or Uso<sup>89</sup>, a marketplace gathering museums, galleries, publishers and artists from Mexico, developed by the consulting firm Aura during the pandemic.

Innovation for online stores was rather limited to adapt existing resources already in the market and used in other sectors, to boost museum commercial activities.<sup>90</sup> At the time this study was conducted, there was no available data analyzing the affordability and the results of this business model, in terms of its contribution to museums and its sales figures when compared to physical stores. E-commerce and marketplaces seem to be trends that will continue growing, possibly connecting other audiences with museum programs.

Shortly after the pandemic, museums also began offering virtual tours or digital tours guided by curators or experts. Some of them were costless (for example, MALBA's micro-mediations by Zoom<sup>91</sup>) but in others a fee was charged (cfr. the Bank of the Republic Collection in Colombia or the Museo Amparo Puebla) at very accessible prices. These contents were seen as another option in generating some extra income for museums. Globally, virtual tours have served as an alternative for collecting financial resources. The Artemisia Gentileschi exhibition at the National Gallery in London, where virtual tours cost 8 pounds, is one successful story.<sup>92</sup> In turn, some organizations such as the National Steinbeck Center, the Carnegie Museum of Pittsburgh, and the Virginia Museum of Fine Arts

<sup>86</sup> "Tienda MARCO," accessed July 1 2021, <https://storemarco.art>.

<sup>87</sup> "Tienda Bellas Artes," accessed July 4, <https://www.tiendabellasartes.com.ar>.

<sup>88</sup> "Kichink," accessed July 11 2021, <https://www.kichink.com>.

<sup>89</sup> "Uso," Aura, accessed July 10 2021, <https://www.uso.mx>.

<sup>90</sup> To collect payments online stores use systems such as PayPal, Stripe, Wompi, credit cards and wire transfers. Some stores have also integrated chatbots, WhatsApp or Tidio services for customer service. Commercial delivery companies are mostly in charge of shipping, and domestic shipments are more common than international ones.

<sup>91</sup> "Micromediaciones" promote exchanging ideas with audiences about actions and performances, in order to update their interpretations and their relation to their historical context of production and to contemporary issues. "Visitas guiadas actual," MALBA, accessed on July 7, 2021, <https://www.malba.org.ar/evento/micro-mediaciones-hacer-correr-el-rumor/>.

<sup>92</sup> Gareth Harris, "London's National Gallery charges £ 8 for virtual tour of blockbuster Artemisia Gentileschi exhibition," *The Art Newspaper*, 20 November 2020, accessed June 2021, <https://www.theartnewspaper.com/news/national-gallery-artemisia-gentileschi-virtual-tour-charges-8>.

offer virtual or digital memberships aiding their interaction with remote audiences while contributing to their economic sustainability.<sup>93</sup>

In LAC, and particularly in Colombia, some museums streamed video content, and other specialized media series on their websites as paid content. Two examples are “Cinematecas” by Museo La Tertulia Museum<sup>94</sup> (for the ticketing they partnered up with Colboletos<sup>95</sup>) and “Sala Virtual” (Virtual Room) by the MAMM<sup>96</sup>.

More often, private museums show more flexibility in creating extraordinary funding strategies (either face-to-face or digital ones), unlike public museums, usually hindered by bureaucracy, and forced to cope with it by resorting to trusts, membership programs or friends associations, or any other non-profit civil organizations.

Generally speaking, the biggest challenges for museum digital content monetization come from dealing with issues such as: consolidating robust technological platforms enabling automation of websites, having user-friendly navigation design parameters, and ensuring cyber security guaranteeing safe transactions. Another specific challenge for public institutions is to change or adapt their legal personality and tax obligations so as to be ready to profit from online sales.

José Carlos Mariátegui (MALI) advocates for a new and simpler way of economic organization in museums, with less bureaucracy, in the style of a startup. According to him,

[...] the model we were using to run the museum is based on a series of restrictions that we can't afford when facing radical events such as the pandemic. This leads us to the idea of running under the startup model in some aspects: knowing that the collection is an asset for our museum, knowing how to generate an income from it, the biggest possible income, it seems to me that this is very important. And from there on, to think of other museum tasks as if they were startups. I mean... an online store for instance, that doesn't sell only museum products, but also art works from

<sup>93</sup> On this matter, see the segments of digital content that are likely to generate profits according to Brendan Ciecko, “How Museums Can Generate Revenue Through Digital Content and Virtual Experiences,” American Alliance of Museums, 22 July 2020, accessed June 2021, <https://www.aam-us.org/2020/07/22/how-museums-can-generate-revenue-through-digital-content-and-virtual-experiences/>.

<sup>94</sup> “Cinemateca,” Museo La Tertulia, accessed June 29 2021, <https://www.museo-latertulia.com/museo/calendario/la-cinemateca-en-movies/>.

<sup>95</sup> “Museo La Tertulia,” Colboletos, accessed June 6 2021, <https://colboletos.com/home/museo-la-tertulia/>.

<sup>96</sup> “Cine MAMM Sala Virtual,” Museo de Arte Moderno de Medellín, accessed July 3 2021, <https://www.elmamm.org/Cine-MAMM-Sala-Virtual>.

the artists around the neighborhoods where the museum is located. It is becoming necessary to encourage a more feasible model for museums in the region.<sup>97</sup>

Digital business models have an important future in LAC museums. Thinking outside the box on what items and how to present them digitally will be crucial for museums in order to diversify their range of action and their sustainability opportunities. The use of cryptocurrency and NFT transactions are two scenarios yet to be explored.<sup>98</sup> The NFT digital art market in LAC is new and museums have yet to be introduced in it. In the United States there are ongoing debates on the fact that museums could now resort to NFTs and foster income generation through cryptocurrency. Not only that, but this approach will entitle museums to a closer and more frequent interaction with their public, facilitating processes of digital art collecting, empowering audiences as curators, and bringing first-hand understanding of the new art market.<sup>99</sup>

<sup>97</sup> Mariátegui, interview.

<sup>98</sup> NFT is the acronym for Non-Fungible Tokens, a cryptographic token unique and not mutually interchangeable, related to Blockchain technology. Constanza Ontiveros Valdés, “What to expect from the NFT art boom,” ArtColeccion.io, April 29, 2021, accessed June 2021, <https://artcollection.io/blog/what-to-expect-from-the-nft-art-boom>.

<sup>99</sup> Brett Renfer and Hillary Cleary, “Making the Most of NFTs Without Pressing ‘Mint,’” Museum Next, May 28 2021, accessed June 2021, <https://www.museumnext.com/article/making-the-most-of-nfts-without-pressing-mint/>.

# 3. Cases of Innovation



The pandemic has highlighted the necessity of developing digital strategies that connect us with remote audiences, and the urge to open new paths while creating new content and re-fashioning our relationship with society.

—**Koldo Garcia**, co-founder of Mad Pixel and director of Second Canvas

In this section we analyze six cases —four from inside and two from outside LAC— of innovative institutions that expanded their mission into the digital world during the pandemic. Their stories can be read as direct responses to issues discussed above affecting museums in the region, such as their digital transformation through affordable and accessible technology, their social role and their engagement with audiences. We also discuss the challenges of creating more sustainable collections, adopting new management and business models, inhabiting the virtual sphere in new ways and embracing gamification and entertainment as fundamental aspects of museums in the XXI Century. Each of the cases described below represents a successful story on tackling challenges and questions like, which future we should envision, which paths can be followed towards a globally hyper-connected digital sphere transition, relying on data intelligence, or even how to engage with new audiences, on the basis of technology innovation that favors interactions that stress the positive impact museums have in our societies and their challenges we face.

## **Museu do Amanhã. Brasil**

### **Can a Museum Be a Laboratory Where We Can Reimagine Our Future?**

Museu do Amanhã in Rio de Janeiro represents one of the most fascinating examples on how museums of the 21st century can go hand in hand with society, striving to build together a better future. A new icon of the modernization of Rio de Janeiro's harbor, the museum was born in the Praça Mauá as a science museum devoted to explore, imagine, and conceive all the possibilities for constructing the future. It is an experimental space where content is presented through a narrative that combines science accuracy with the expressiveness of art, using technology as a support in interactive environments and audiovisual and gaming facilities, created from scientific studies conducted by experts and data disseminated over the world.

In the words of former mayor Eduardo Paes, at the museum opening in 2015, the museum is one of the best examples of regeneration and gentrification in Rio de Janeiro.<sup>100</sup> Ten years ago its neighborhood was one of the poorest in the city, struggling with a high crime rate. By the time of its inauguration, several public works had already been carried out, such as the demolition of obsolete access roads and the construction

<sup>100</sup> Jonathan Watts, "Museum of Tomorrow: a captivating invitation to imagine a sustainable world," *The Guardian*, December 17, 2015, accessed June 2021, <https://www.theguardian.com/world/2015/dec/17/museum-of-tomorrow-rio-de-janeiro-brazil-sustainability>.

of shopping malls and residential apartment blocks for a high-purchasing power segment. Giving its neighborhood an added allure, Museu do Amanhã was designed to attract new residents to the area.

In accordance with its mission, in March 2021 the museum inaugurated the exhibition “Coronaceno: Reflexões em tempos de pandemia.” Entirely dedicated to the Coronavirus, the show critically reflects upon the impacts of the disease on a global scale and the lifestyle changes that came after the onset.<sup>101</sup>

The Laboratório de Atividades do Amanhã (LAA), the most strategic department at the museum, focuses on modeling a transdisciplinary prototype for a more social-centered and sustainable future, using both high and low technologies. It has two main areas of research: 1) the effects and results of traditional and exponential technologies, such as artificial intelligence, the Internet of things, robotics, 3D printing, nanotechnology and biotechnology and 2) the future of work, urbanization, manufacturing, fashion and food.<sup>102</sup>

To attain its objectives, the Laboratory covers four categories: 1) Art and Technology Program, 2) Activities, 3) Scholarships and 4) Exhibitions. The Laboratory catalyzes the launching and adoption of new tools, processes and innovations to inspire visitors and participants to stop being mere consumers and become creators of their real and digital environment.

## **Museo Universitario Arte Contemporáneo (MUAC), UNAM. Mexico**

### **How to Critically Move towards the Digital World without Losing Your Way?**

The Museo Universitario Arte Contemporáneo (MUAC) is a public museum for contemporary art, located at the Cultural Center in the Universidad Nacional Autónoma de México (UNAM). Under its collection, art works produced by artists based in Mexico no earlier than 1952,

<sup>101</sup> The exhibition brings together art installations, scientific data and up-to-date news, and has been divided into the following sections: Essentials, From a virus to a pandemic, Transformed societies, A Memorial for the Absent, Science is the protagonist and Culture is the way. “Temporary exhibition: Coronaceno - Reflections in times of pandemic,” Museu do Amanhã, accessed on July 7, 2021, <https://museudoamanha.org.br/pt-br/exposicao-temporaria-do-museu-do-amanha-coronaceno-reflexoes-em-tempos-de-pandemia..>

<sup>102</sup> “Laboratório de Atividades do Amanhã - Um lugar para experimentar,” Museu do Amanhã, accessed July 7 2021, <https://museudoamanha.org.br/pt-br/laboratorio-de-atividades-do-amanha>.

—the year in which the University’s main campus was inaugurated—are conserved and studied.

In 2017, MUAC and Movistar Foundation in Mexico partnered to launch the project “Digital Museum International Conference.” The objective was to have a critical and global map of museums in the digital field and to draw from it a realistic plan of action for Latin America. It was the first time that a LAC museum undertook the task of integrally understanding the virtual sphere as parallel to physical experience. Ever since, MUAC has led the generation of innovative digital content in the region, taking care of the users’ needs from a digital mediation perspective.

During the pandemic, MUAC has most successfully engaged with its audience by attentively listening to its social demands, while creating a native web program based on its collections and educational activities. We must particularly mention # MuacDondeEstés<sup>103</sup>, an ambitious digital program and social network campaign covering diverse content such as podcasts, academic activities, courses, talks, tutorials, and children’s activities. It also included virtual exhibitions like “Room 10,” a streaming hub suited for video art or projects like “The sand outside the clock. Memorial to the victims of COVID-19” by Rafael Lozano Hemmer; “*Diarias global*” by feminist artist Lorena Wolfffer; “Images and revolution: the graphic of 68”; or “Seropositive file,” on the HIV crisis<sup>104</sup>. Finally, Second Canvas, a multimedia-experience-viewer designed by the Spanish company Mad Pixel, combining super-high resolution images with interactive narration that allow users to explore a selection of works from the MUAC collection in great detail, learning their context, symbolism and technique<sup>105</sup>.

Likewise, MUAC hosted the second edition of #MuseoDigital in 2020.<sup>106</sup> For this edition, it was conceived as an interactive online forum in which museum professionals exchanged experiences, concerns and insights on the implications of the reality imposed by the pandemic, and on the new role of museums aiding to build citizenship and a cultural rights agenda from a democratic and inclusive perspective.

<sup>103</sup> “#MUACDondeEstés,” MUAC, accessed July 4 2021, <https://muac.unam.mx/actividades>.

<sup>104</sup> “Exposiciones,” MUAC, accessed July 4 2021, <https://muac.unam.mx/exposiciones>.

<sup>105</sup> “Second Canvas,” MUAC, accessed July 4 2021, <https://muac.unam.mx/second-canvas>.

<sup>106</sup> “Museo digital,” MUAC, accessed July 4 2021, <https://muac.unam.mx/museo-digital/>.

## Museo Interactivo de Economía (MIDE). Mexico

### How to Go from a Local Museum to a Global and Hyper-connected One?

MIDE is the first museum in the world dedicated entirely to economics. “MIDE Digital” is a digital application detached from its website and conceived as a metaverse -that is, a “meta universe”- where all users actively engage in economic activities. Designed as a laboratory for the dissemination of economy, it can be accessed anywhere and anytime,<sup>107</sup> giving their users a comprehensive vision of economics. Its experiences tailored for digital environments, like games, interactive temporary exhibitions, quizzes, chatbots, and the like, promote critical thinking and participatory awareness, encouraging decision-making based on reliable information. The platform shows MIDE’s passion for communication and education supporting a hyper-connected and constantly changing society, from a contemporary approach.

The platform is divided into four sections: First a collection based on fundamental financial education topics like comprehensive well-being, basic principles of economics, financial decision-making and sustainable development. Then, an interactive laboratory with fun and educational activities; a section of current relevant news on economy, customized according to users’ profiles; and, finally, an academic section aimed at providing teachers with educational content for their lessons.

This is how, based on examples from everyday life and in a fun way, MIDE brings its visitors closer to understanding how the world works in our days.

Silvia Singer director of the museum states, “One of our greatest satisfactions is that when our visitors end their visit they are convinced that their daily life is really related to economy. They are more aware of what is happening daily in Mexico and in the world.”<sup>108</sup>

<sup>107</sup> To learn more about the project we recommend listening to the *Región Naranja* podcast, “¿Cómo te imaginas un museo digital?,” with Silvia Singer, director of MIDE and Trinidad Zaldívar, head of the IDB’s Creativity and Culture Unit: “How do you imagine a digital museum?,” *Región Naranja*, Inter-American Development Bank, Spreaker, June 7, 2021, <https://www.spreaker.com/user/naranjamediapodcasts/test-museos-digitales>.

<sup>108</sup> “Silvia Singer, directora del Museo Interactivo de Economía,” *Imagen Radio*, July 13 2012, <https://www.imagenradio.com.mx/silvia-singer-directora-museo-interactivo-de-economia>.

## Archivo Digital de Arte Peruano (ARCHI). Peru

### How Can You Build a Sustainable Online Collection and Even Make Profits?

ARCHI is a platform dedicated to documenting and disseminating Peruvian cultural heritage in the most complete and representative possible way, preserving it and making it accessible to a wider audience. The project, launched by the Museo de Arte de Lima (MALI)<sup>109</sup> and the Daniel Giannoni Photographic Archive, in partnership with the Ministry of Culture of Peru, gathers images from different art expressions, tangible culture, and Peruvian architecture during different times of its national history, from pre-Hispanic times to contemporary Peru. Low resolution images can be retrieved and used by students, teachers, researchers and the general public free of charge, for educational and research purposes, but for commercial use copyright authorization is required.

ARCHI is conceived as an ongoing project continuously open to add new archives through alliances with both individuals and institutions. Digital images may be purchased for publications, catalogs, exhibitions, magazines and merchandising.<sup>110</sup>

Launching and developing ARCHI has been possible thanks to the sponsorship of the Swiss Federal Office of Culture and the Swiss Embassy in Lima. Since it was launched in 2020, ARCHI has been visited by more than 106 thousand users, most of them through desktop computers in Peru; 73% of their visitors are regular ones, a mostly school-aged (from 18 to 24) audience.<sup>111</sup>

<sup>109</sup> On MALI's digital project renovation, see the panel "La transformación digital de la cultura en el MALI," from the *Foro Cultura En Digital. Transformación digital en las instituciones*, hosted in May 2021 at Fundación Telefónica. At the panel were Natalia Majluf, art historian, curator and former director of MALI, José Carlos Mariátegui, curator and culture and technology entrepreneur, and Lucía García de Polavieja, manager of cultural projects and the corporate volunteering section at Fundación Telefónica Perú. "Culture in Digital Forum: The digital transformation of culture in MALI | #CulturaEnDigital," Espacio Fundación Telefónica Madrid, May 26, 2021, <https://www.youtube.com/watch?v=aZ958xhuHLO&t=2005s>.

<sup>110</sup> Regarding the commercialization of images, in 2020, 261 images were purchased by users for different purposes. The total amount of income was more than \$5.5000. (According to Natalia Majluf, email to author, June 10, 2021).

<sup>111</sup> Information available at "ARCHI. Digital Analytics Dashboard," accessed July 9 2021, <https://datastudio.google.com/u/0/reporting/1e3bcb60-42f4-4783-83e1-9e0c39f-89be4/page/jrljB>.

## Animal Crossing and Museums. Global

### How can Museums Connect with the Video Gaming World?

Animal Crossing is a series of social simulation video games for Nintendo Switch Online created by Katsuya Eguchi and Hisashi Nogami in which players live in a town inhabited by anthropomorphic animals, carrying out different activities and interacting with each other through avatars, like in any other social network. Some museums around the world have begun taking part in this virtual environment through their heritage collections, which can be collected by players and exhibited in the galleries of a generic museum building, included in all games of the Animal Crossing franchise except in Animal Forest.

In the game, the museum is conceived as a place to collect and display all the collectibles that players have found, including fish, deep-sea creatures, insects, fossils, paintings, and sculptures. All these items can be donated to the museum, through its curator, an owl named Blathers, stationed at the entrance hall. Once donated, the objects are immediately displayed at their corresponding exhibition.

The Digital Department of the Metropolitan Museum of New York has made available its entire collection of more than 406,000 open access images, helping to easily render them into the virtual museums of the Animal Crossing franchise.<sup>112</sup> Likewise, the Museo Nacional Thyssen-Bornemisza in Madrid has launched, for the Animal Crossing Players, New Horizons, a selection of works from its collection by artists like Holbein, Carpaccio, Caravaggio, Rubens, Goya, Manet or Cézanne.<sup>113</sup> Players will be able to download and save those images using QR codes, which can then be transported into their own islands through an app called NookLink.

<sup>112</sup> “Own a Van Gogh ... in Animal Crossing, with The Met’s New Share Tool,” The Met, April 27 2020, <https://www.metmuseum.org/blogs/collection-insights/2020/animal-crossing-new-horizons-qr-code>.

<sup>113</sup> “El Thyssen en Animal Crossing,” educaTHYSSEN, accessed April 30 2021, <https://www.educathyssen.org/laboratorios/educacion-digital/thyssen-animal-crossing>.

## El Prado on the Web. Spain

### Can a Museum Turn into an Intelligent Online Encyclopedia?

“El Prado on the Web” is the website of the digital transformation of the Museo Nacional del Prado.<sup>114</sup> The project merges the museum’s databases into different digital management systems: inventories of art works, bibliographic files, information from the Communication and Marketing departments, as well as archives and other specific projects from different departments. To achieve this, a unified and searchable Knowledge Graph was built using a Semantic Digital Model.<sup>115</sup> In this way, there is an improvement in the documentation, editing, communication, and publishing processes. The first use of the Graph is to have a web interface where all internal and external information on the works from El Prado’s collection is collected.

The Prado Graph was developed by GNOSS (RIAM I + L Lab), a leading Spanish company in the Semantic Web field, which builds “Knowledge Graphs,” exploiting them by applying semantic technology through machine learning and artificial intelligence.

A Knowledge Graph can understand any fact about people, places and all kinds of objects, as well as the links between these entities. It is a way to link and reunite information meaningfully, by making it ready for human query and search, with the objective of building a smarter Web. The Prado Knowledge Graph concentrates heterogeneous information hosted in different systems, bringing it together with the information produced by users on the platform. Knowledge graphs are intended to answer any kind of question about people, organizations, places, topics, projects, events, concepts and ideas integrated into digital assets.

According to the developer, “true innovation occurs amid the chaotic intersection of ideas [...] when different themes, concepts, people, and places merge into each other, taking advantage of the new potential of machines, showing us diverse perspectives while making us smarter.”<sup>116</sup>

The museum also launched a timeline based on artificial intelligence providing works and artists with their historical and cultural framework, where users can find extra information about them. El Prado partnered

<sup>114</sup> “Museo Nacional del Prado,” accessed July 4 2021, <https://www.museodelprado.es>.

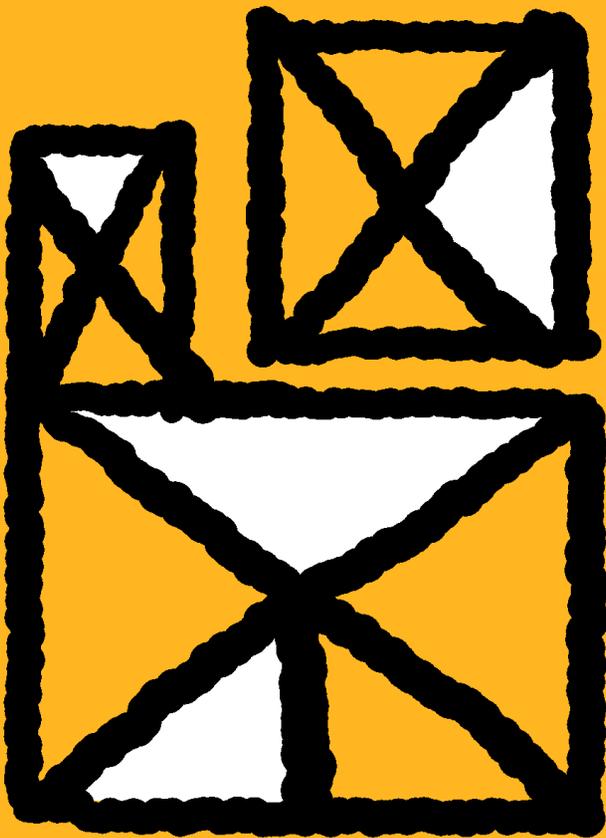
<sup>115</sup> “El Prado en la Web,” Gness, accessed July 9 2021, <https://www.gness.com/recursos/el-prado-en-la-web/9eec685b-4453-4955-b208-98c2ed9ddc74>.

<sup>116</sup> “Grafos de conocimiento,” Gness, accessed July 9 2021, <https://www.gness.com/grafos-de-conocimiento>.

with Telefónica to develop a system that relates works from its collection with historical, scientific and cultural events that took place in their own time. “This tool can help us understand the world in which these paintings were created and at the same time understand the world of today,” says Javier Solana, president of the Royal Board of the Museum.<sup>117</sup>

117 Silvia Hernando, “El Prado crea una herramienta ‘online’ para poner sus obras en contexto,” *El País*, October 8 2019, accessed June 2021, [https://elpais.com/cultura/2019/10/08/actualidad/1570547695\\_020637.html](https://elpais.com/cultura/2019/10/08/actualidad/1570547695_020637.html).

# 4. Final Observations



A museum is much more than an exhibition space, it is also a space for true advocacy, not only because it is part of the block chain in a specific territory, but mainly because of its ability to mobilize people in relation to their memory, their heritage, and their place in the world.

—**Mônica Barcelos**, coordinator of the Ibermuseos Technical Unit

We need to foster a strategic logic of hybrid scenarios between the digital and the face-to-face, so that we can easily move from one scenario to the other.

—**Eugenia Lindo**, Director of the Museo de Arte de El Salvador

Almost two years after the pandemic's onset, LAC museums have undergone a series of events and have learned from them, seemingly having greater clarity about their strengths and areas of improvement. A hybrid model may be a major trend for the field in the future.

This research has yielded different conclusions and insights suitable to face museums challenges. We have identified principles, trends, ramifications, and possible ways of thinking about their mission as museums, and how their role as places for social transformation, digital innovation, critical thinking, education, as well as sources of economic growth can be consolidated in the region.<sup>118</sup>

## Trends

### 1. Museums Are Living and Inclusive Spaces

**1. 1 Museums are living spaces.** Museums are physical and virtual spaces that foster a sense of community and encourage creativity. They must embrace constant transformation, adaptation and moving, as living spaces for social cohesion. They must not be elitist places.

**1. 2 Museums are accessible and inclusive for everyone without exceptions.** Museums of today, and even more in the future, must be committed to promote cultural rights, accessibility, and equity, diversity and inclusion agenda. They must guarantee, to all individuals and communities in society (without distinction as to race, class, ethnicity, gender, sexual orientation, religion, language, immigration status, or any type of disability or temporary disabilities, and as to any other human condition) access to culture, science and entertainment. Everyone must be represented and taken into consideration in their programming, in terms of creativity and content production.

**1. 3 Museums are more than mere buildings or collections; they are their communities.** The paradigm of the museum as an architectural-designed building housing, displaying and preserving a collection is far behind us. Today, museums transcend their walls to step into the streets, participating in public debates through social media. Audiences are taking center stage and they must be asked directly what do they want, what do they

<sup>118</sup> Some of our conclusions echo Jason Farago's article "10 Ways for Museums to Survive and Thrive in a Post-Covid World," *The New York Times*, May 21 2021, accessed June 2021 <https://www.nytimes.com/2021/05/21/arts/pandemic-museums-ideas.html>.

need and how can museums collaborate with them in building citizenship. The museum's future social relevance depends on it.

**1. 4 Museums are networking platforms.** Museums relevance is partly based on being able to function as public forums and hubs interconnecting fields and social agendas. Museums are places from where it is possible to establish programs and weave inter-institutional alliances with universities, governments, hospitals, foundations, companies and organizations from all productive sectors, including, of course, tourism and creative industries.

**1.5 A museum is not a school, but it contributes to education.** The pandemic has made clear that their mission is connected to non-formal education. In this fact lies a missed opportunity that digitization has made evident for educational systems. Education can be transversal to all museums areas and departments, and not only the task of those areas destined to mediation, public programs, outreach activities or educational services.

**1. 6 Museums do not produce just exhibitions.** There is a need to think comprehensively about their work and strengthen their educational, community and outreach programs (conferences, courses, publications, podcasts, residence projects, and film screenings) to fulfill their role in education and in their community.

## **2. Museums in the Digital Sphere**

**2. 1 Breaking physical boundaries and how to engage digital audiences.** The digital world, social networks and information technologies were strengthened during the pandemic and museums transcended their boundaries, their neighboring communities, local inhabitants and tourists, reaching remote corners with a limited cultural offer. This enabled museums to become accessible and inclusive for all people without exceptions, while dealing with technical and technological barriers, poor infrastructure, and language and inclusion deficits that have historically prevented the participation of both individuals and whole segments of the population.

**2. 2 Creating native digital content for remote audiences.** To reach digital users, museums must create content from a different non face-to-face perspective. Using novel language and dynamic and interactive formats they can convey their work and mission in creative ways, and even expand their programming and offerings. Old and new technologies are means to support mediation and digital interaction strategies,

promoting 21st century skills<sup>119</sup> and opening channels of dialogue to listen to their audiences.

**2. 3 Digital skills training for their staff.** The process of digital transformation affecting museums as a whole has become more urgent after the pandemic. There is a demand for digital skills training opportunities across the entire organization, in areas such as digital curatorship, museum innovation, digital communication strategies, and other key competences for museums in the 21st century.

### 3. Museums and Digital Tools

**3. 1 Data intelligence.** One of the main advantages of digital technology is the automated processing of data and data intelligence that allow museums to better understand the impact of their programs, as well as the interests and the behavior of their audiences. Museums in LAC so far have made limited or no use of these new tools that will allow them to better understand their audiences, improving the way they communicate with them, and responding to their true needs. The generation of audience measurement and monitoring systems will be crucial at all levels.

**3. 2 The Semantic Web and digitization policies under international standards.** Through sustainable digital collections and repositories, properly digitized, cataloged and preserved under international standards, museums in our region will be at the forefront of world information systems and will be part of the so-called Semantic Web (technologies that generate machine-readable data, under specialized search protocols and metadata harvesting).

**3. 3 Low-tech versus high-tech.** The digital world feeds not only on cutting-edge technological experiences. There are low-cost alternatives: from social networks or open source software and OS, compatible with computers, tablets and smartphones used by most of the population in LAC. Rather than investing in expensive equipment or software, subject to technological obsolescence, museums have the opportunity to specialize in producing native digital experiences for ordinary platforms,

<sup>119</sup> 21st century Skills are: creativity, innovation, critical thinking, problem solving, communication, collaboration, analytical thinking, self-direction, perseverance and persistence. See: “¿Cuáles son las habilidades del siglo XXI?,” Edacom. Tecnología educativa, December 11 2019, accessed June 2021, <https://blog.edacom.mx/cuales-son-habilidades-siglo-21>.

languages and devices. More than technological sophistication, audiences are looking for faster, more direct, and interactive content.

#### **4. Museums: New Management and Business Models**

##### **4.1 Digital technologies and opportunities to monetize the digital offer.**

Online ticketing, e-commerce strategies, virtual tours and digital memberships, marketing of copyrighted images and other content for digital audiences, can help museums strengthen their income-generating processes. Business models based on the generation of digital content are likely to proliferate in the near future, as it is now common in other regions of the world. This requires a hybrid museum approach under a whole new reality that needs to be envisioned and designed.<sup>120</sup>

##### **4.2 The revival of permanent collections and deconstructed flagship programs.**

Revisiting their collections and institutional programs from a new and original perspective is an opportunity that museums must embrace. Strategies like recontextualization of their own identity, remaking content and past successful activities, and combining the old with the new will allow museums to remain true to their identity, while generating a new offer with a local accent.

##### **4.3 Shared management platforms.**

The migration of museums into the digital age involves processes such as the generation of robust digital repositories, the production of expensive museological projects, and other technological endeavors. Sharing financial, material and human resources among themselves, may be a more affordable way for museums to approach this process. Inter-institutional collaboration and co-production is a feasible alternative for digital renewal ensuring a sustainable future for the field. New organizational models must be considered, taking advantage of access in new technologies. Communication and exchange during the pandemic may help build alliances among institutions on the basis of what has been learned, jointly managing the implementation of new solutions and experimenting with the innovation needed to make the leap into the 21st century at last.

<sup>120</sup> See the guiding principles for hybrid-friendly, cross-functional work culture by the American Alliance of Museums: Emily Stoller-Patterson y Tricia Robson, "Adapting to a Hybrid Reality: Accelerating a Digital Methodology and Mindset at Your Institution," American Alliance of Museums, Accessed June 30 2021, <https://www.aam-us.org/2021/06/30/adapting-to-a-hybrid-reality-accelerating-a-digital-methodology-and-mindset-at-your-institution/>.

**4. 4 Museums need public policy support and access to financing.** Each government must develop legal and fiscal frameworks to strengthen the activity of museums and promote their economic sustainability in two ways: first, ensuring the availability of public funds, and second, fostering the sponsorship of both individuals and private institutions through tax incentive regulations, promoting philanthropy and patronage. Likewise, in the face of moments of structural crisis, such as the COVID-19 pandemic, rescue funds at regional and national level would be something desirable.

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## Interviews

Barcelos, Mônica (coordinator of the Technical Unit at Ibermuseos). Interview by Luis Vargas Santiago. February 19, 2021. Video.

Castilla, Américo (director of FundaciónTyPA in Argentina). Interview by Luis Vargas Santiago. March 23, 2021. Video.

Díaz Costanzo, Guadalupe (director of the Centro Cultural de la Ciencia in Argentina). Interview by Luis Vargas Santiago. February 17, 2021. Video.

Espejo Ayca, Elvira (director of the Museo Nacional de Etnografía y Folklore in Bolivia). Interview by Luis Vargas Santiago. March 16, 2021. Video.

García, Koldo (co-founder of Mad Pixel and director of Second Canvas). Interview by Luis Vargas Santiago. February 17, 2021. Video.

Lindo, Eugenia (director of the Museo de Arte de El Salvador). Interview by Luis Vargas Santiago. February 17, 2021. Video.

Mariátegui, José Carlos (founder of Alta Tecnología Andina). Interview by Luis Vargas Santiago. February 19, 2021. Video.

Singer, Silvia (executive director of the Museo Interactivo de Economía in Mexico). Interview by Luis Vargas Santiago. March 2, 2021. Video.

## Quantitative Research

Aura / SIMO. "Quantitative study for the Series 'Art, Culture and New Technologies in Latin America and the Caribbean'." Mexico City: 2021.

# 6. Glossary

## **3D Printing**

Process by which three-dimensional objects are printed by superposition of successive layers of any given material.

## **A**

### **Artificial Intelligence**

Combination of algorithms that replicates human intelligence, performed by machines.

### **Augmented Reality**

Technological interface that allows users to see and interact with digital items, in a physical reality context.

## **C**

### **Chatbots**

Technological tool based on Artificial Intelligence that simulates human conversations.

### **Critical museology / New museology**

Field of study that deconstructs the concept of museums, analyzing their relationship with their audiences from a constructivist point of view.

### **Cryptocurrency**

Digital currency based on blockchain technology used for digital transactions.

### **Curatorial Practices**

Series of activities including the study, contextualizing and construction of a narrative for art works within a museum or exhibition.

## **D**

### **Digital Divide**

Unequal access to technologies among social groups.

### **Digital Museum**

Virtual space where museum users have remote access to different contents designed for a digital interface. It is not a replica of the face-to-face museum but an expanded version of it.

## **Digitization**

The Process of transforming analogue information or objects into digital formats.

## **E**

### **E-commerce**

Exchange of goods and services carried out electronically or online.

## **H**

### **High-tech**

Also called cutting edge technology. It comprises the most recent technological advances.

### **Hub**

Online space where entities of different nature converge to promote collaborative work and co-creation.

### **Hybrid Museum**

Type of museum that runs and depends both on physical and digital processes.

## **I**

### **Information and Communication Technologies (ICTs)**

Set of resources and tools related to the processing, storage and transmission of information.

## **L**

### **Low-tech**

Also known as low-cost technology. Accessible, sustainable and affordable technological tools. It can also mean basic or old-dated technology.

## **M**

### **Machine Learning**

Development of digital automated systems derived from Artificial Intelligence that allows them to sort data and learn from that process.

**N****NFT digital art**

Art sold and collected in digital environments. They are unique and unrepeatable cryptographic pieces built with blockchain technology.

**O****Open source**

Free Software or coding for public use or modification.

**P****Patronage**

Financial aid, support or sponsorship provided to an institution to carry out its mission.

**Q****QR Code**

Code that stores information in a matrix of dots or two-dimensional bars. QR stands for Quick Response.

**S****Semantic Web**

Extension of the web where information is collected and discriminated by automatized and machine learning processes

**Smartphone**

Mobile device that has advanced digital functions like those of a computer.

**Startup**

Company in the first stages of operations, usually related somehow to technology.

**Streaming**

Multimedia technology that allows watching recorded or live content on digital platforms.

**V****Virtual Reality**

Technological interface that creates an immersive virtual environment out of simulated scenes or places.

**Virtual Visit/ Tour**

Virtual environment tour through the interaction with digital devices.

# 7. Table of Projects Discussed

Company / project	Country	Type of project	Pages
American Alliance of Museums	United States	Conglomerate of Museums	13, 44
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Daniel Giannoni Photographic Archive	Peru	Archive	40, 53
Aura	México	Cultural consultancy	45
Inter-American Bank for Development	International	International Organization	9
Banco do Brasil	Brazil	Cultural Center	10
Colboletos	Colombia	Digital platform	46
Colección de Arte del Banco de la República	Colombia	Art Museum	45
International Council of Museums (ICOM)	International	Conglomerate of Museums	13
Difusión Cultural, UNAM	Mexico	Cultural Center	27
Fundação Iberê Camargo	Brazil	Historical Museum	41
Telefónica	Mexico	Foundation	27, 56
Fundación TyPA	Argentina	Foundation	29
National Gallery of London	England	Museum of Art	45
Gnoss ( Riam I + L Lab)	Spain	Technology company	55
Google Arts & Culture	United States	Digital platform	41
Ibermuseos	Iberoamerican Countries	Conglomerate of museums	14, 28
Inhotim	Brazil	Museum of Science and Arts	41

<b>Company / project</b>	<b>Country</b>	<b>Type of project</b>	<b>Pages</b>
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Instituto Moreira Salles	Brazil	Historical museum	41
Kichink	International	Digital platform	45
M68, Centro Cultural Universitario Tlatelolco, UNAM	Mexico	Digital platform	41
Mad Pixel	Spain	Technology company	25, 28, 51
Mide digital (MIDE)	Mexico	Digital platform	51
Museo Amparo in Puebla	Mexico	Museum of art	45
Museo de Arte Contemporáneo de Lima	Peru	Museum of art	43
Museo de Arte Contemporáneo de Monterrey (MARCO)	Mexico	Museum of art	44
Museo de Arte de El Salvador (MARTE)	El Salvador	Museum of art	25
Museo de Arte de Lima (MALI)	Peru	Museum of art	26, 44, 53
Museu de Arte de São Paulo (MASP)	Brazil	Museum of art	44
Museo de Arte Latinoamericano de Buenos Aires (MALBA)	Argentina	Museum of art	44
Museum of Modern Art of Medellín (MAMM)	Colombia	Museum of art	44, 46
Museo Nacional de Bellas Artes (MNBA)	Argentina	Museum of art	45
Museu da Imagem e do Som	Brazil	Historical	41
Museo Interactivo de Economía (MIDE)	Mexico	Interactive Museum	29, 37, 52
Museo La Tertulia	Colombia	Museum of art	46
Metropolitan Museum New York (MET)	United States	Museum of art	54
Museo Nacional de Antropología	Mexico	Museum of Anthropology	10
Museo Nacional de Etnografía y Folklore	Bolivia	Museum of Anthropology	32

<b>Company / project</b>	<b>Country</b>	<b>Type of project</b>	<b>Pages</b>
Museo Nacional de Historia (Castillo de Chapultepec)	Mexico	Museum of History	10
Museo Nacional Thyssen-Bornemisza	Spain	Museum of art	54
Museo Universitario Arte Contemporáneo (MUAC)	Mexico	Museum of art	27, 50
#MuseoDigital (MUAC project)	Mexico	Digital platform	27, 51
Museu do Amanhã	Brazil	Museum of science	49, 50
Non-Fungible Token (NFT)	International	Blockchain	47
OPEN MUSEUM	International	Digital platform	28, 36
Papalote Museo del Niño	Mexico	Interactive museum	30
Registry of Museums of Chile	Chile	Conglomerate of museums	20
Second Canvas	Mexico	Digital platform	25, 28, 51
UNESCO	International	Cooperation agency	18
USO	Mexico	Digital platform	45
Whitney Museum of American Art	United States	Museum of art	18

# 8. Acknowledgments

This publication is part of the IDB editorial series *Art, Culture and New Technology in Latin America and the Caribbean*, which aims at identifying the impact of digitization and the adoption of technology in the cultural and creative industries in LAC, and how innovation, social cohesion and change can be catalyzed by it. We hope it will contribute to understanding the potential of new technologies and strengthen the museum sector in the region.

The Inter-American Development Bank and Aura wish to thank the three hundred organizations and professionals who kindly agreed to take part in our survey, as well as the different stakeholders who gave us generous interviews for this research; We specifically wish to thank: Mônica Barcelos, Américo Castilla, Guadalupe Díaz Costanzo, Elvira Espejo Ayca, Koldo García, Eugenia Lindo, José Carlos Mariátegui and Silvia Singer. We are also in debt with Cristian Valencia, Ana Garduño, and Paula Duarte for their support in the making of this publication.

