

# Needs Assessment Report



Digital Incubator  
for Museums



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## Executive Summary

One of the goals of DOORS – Digital Incubator for Museums, funded the European Union’s Horizon 2020 research and innovation programme, is to develop a deeper understanding of the digital maturity, needs and challenges of small and medium-sized museums when it comes to digitalisation. This report is a summary of the learnings and findings gathered throughout the first part of the project. It focuses on the digital transformation priorities informed by the data gathered within the project, shining a light on challenges in building frameworks for digital change management, capacity building, resource allocation toward digital projects, measurement & comprehension processes and adapting value chains towards digital business models.

The report includes data from the survey conducted by the DOORS team, in which 286 museum partitioners took part (with 86,7% of responses from small or medium-size museums) answering questions with specific foci (e.g. Role of Digital, Digital Skills & Staff, Digital Tools, Data & Audience Research, Impact of Digital or Digital Strategies). Further, this report also includes data from expert interviews as conducted in DOORS’ Sparkle Report, research done by the consortium looking into the ingredients for healthier (digital) partnerships, the possibilities and challenges of collaborative processes, the prerequisites for the (re)development of business and revenues models through inspiring stories of institutional creativity, courage, and vulnerability. DOORS has also extracted findings from the incubation programme and the subsequent evaluations from the 40 participating museums directly, as well as the self-reflection exercise done by participating institutions.

While the findings are substantial, we acknowledge the need for follow-up research to expand our understanding and build schemes that support small and medium sized museums in their digital transformation endeavours.

# 1. Introduction

## 1.1 About DOORS

Initiated by Ars Electronica, MUSEUM BOOSTER and Ecsite, the **DOORS - Digital Incubator for Museums**' raison d'être is to give small and medium-sized museums across Europe the opportunity to lead the digital transformation of the sector.

The project seeks to reduce the digitalization gap by creating a space for small institutions to express their needs and by offering them access to knowledge, resources, expertise and an incubation and skill-building programme.

For the duration of two-year, experts from the museum sector, the creative and tech industry and the consortium work to reach several objectives:

- Identify and assess the digital needs of the European museum community.
- Engage 40 museums and cultural organization tandems in a unique incubation programme.
- Create an incubator for museums to kick start their digital transformation and enable the development and implementation of pilot projects together with experienced technical partners.
- Foster collaborations and exchanges between museums, creative and tech industry experts and cross-fertilization with other sectors.

DOORS comes at a time when attitudes towards the digitalization of the sector are changing. Cultural institutions are continuously developing new content distribution and online entertainment formats. The closures imposed by the recent health crisis have accelerated the pace of changes and brought to the fore a question already much debated among museum professionals: how to create cultural offerings that reflect the ways in which the public consumes and engages with knowledge and information?

Under the umbrella of the European Commission's research programme Horizon 2020 and the challenge '*Europe in a changing world – Inclusive, innovative and reflective societies*' that focuses on digital transformation, DOORS seeks to address these urgent issues whilst acknowledging obstacles are disproportionately found within small and medium-sized museums with limited resources.

## 1.2 About this Report

The present needs assessment report aims to draw, if only partial, conclusions with regards to the needs, challenges, and opportunities small and medium-sized museums encounter in their engagement with digital technologies. More specifically, it looks into how digital skills and literacies are understood, developed, and deployed to elevate the museums' digital maturity and literacy.

The report is grounded in data collected from desk-based research, surveys, analysis from a wide range of experts, self-reflections and evaluation reports, the ongoing incubation programme, and a series of discussions and interviews with different stakeholders conducted as research for the DOORS' SPARKLE Report<sup>1</sup>.

<sup>1</sup> Tykhonova, O.; Kucheruk, O.; Carabela, A. M. (2022). *DOORS Sparkle report*. Available from: <https://ars.electronica.art/doors/files/2022/05/DOORS-Sparkle-report.pdf>

## 2. The Data Basis

### Introduction

After executing the first phase of the incubation programme, DOORS is ready to introduce the Needs Assessment Report. This report is the result of prospection, discussions, reflections, and analysis based on the data and inputs obtained prior to and during this first chapter of the DOORS incubation programme.

The collection of information for this report has been possible thanks to the experience and responses of the programme participants, the involvement of respondents to several internal and external surveys, our mentors and technical advisors' generosity in sharing opinions and inputs, the content of the diverse workshops carried out and the work done by others in similar reports.

The following sections in Chapter 2 are an overview of the data sources and analysis we used to draw the conclusions in Chapter 3.

### 2.1 Survey

In January 2022, DOORS launched a diagnostics survey to better understand the digital maturity levels and the needs of small and medium-sized museums. The targeted respondents of this survey were practitioners in the museum sector, with a focus on those working in small and medium-sized organizations.

The purpose of this survey was to provide answers to questions related to the digital transformation, on three different layers:

- What is the current status-quo in terms of digital transformation in small and medium-sized museums?
- What are the current digital strategies and plans of small and medium-sized museums?
- What aspects are perceived as necessary to bring these plans to life?

The survey was divided into **11 sections (mapping parameters)**.

1. General Info
2. Role of Digital
3. People / Staff
4. Specific Tools

5. UX (User Experience Design)
6. Data and Audience Research
7. Impact of Digital
8. COVID Effects
9. Strategic Plans (Planned Implementation & KPIs)
10. Enablers & Barriers
11. Network & Support

## Sample

### Size

The survey received **286 responses** (176 complete responses, 110 partial) with 86,7% coming from small (<49 FTE<sup>2</sup>), and medium-sized (<99 FTE) museums.

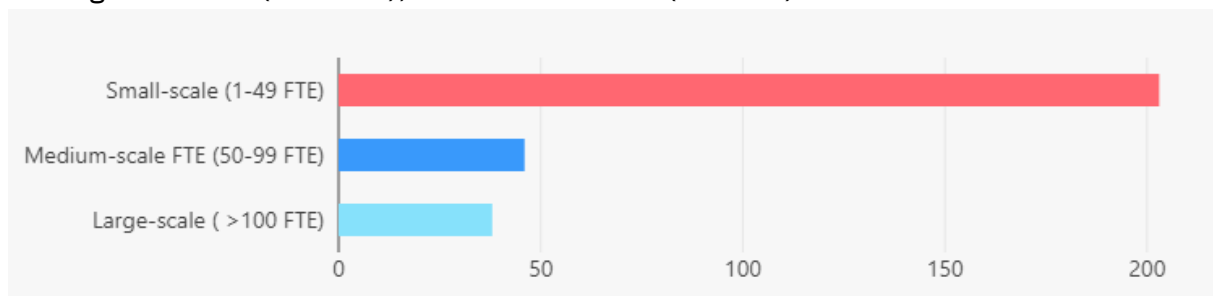


Figure 1: Sample Information - Size of museums' teams (based on full time employment)

### Countries and areas

The survey was shared within 113 museum networks, national associations, and sector representation organizations. DOORS provided the recipients with background information and asked them to reshare the survey, in conjunction with the open call for the first stage of the incubation programme. As such, a substantial coverage of countries was reached with 49 different nationalities:

Country	Responses	Percentage
Afghanistan	6	2,10%
Albania	3	1,05%
Argentina	1	0,35%
Australia	1	0,35%
Austria	17	5,94%
Bangladesh	1	0,35%
Barbados	1	0,35%
Belgium	10	3,50%

<sup>2</sup> FTE = Full-time equivalent





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Bosnia and Herzegovina	1	0,35%
Brunei	2	0,70%
Bulgaria	24	8,39%
Cambodia	1	0,35%
Croatia	4	1,40%
Cyprus	1	0,35%
Czechia	5	1,75%
Denmark	24	8,39%
Estonia	8	2,80%
Finland	3	1,05%
France	3	1,05%
Germany	14	4,90%
Greece	7	2,45%
Hungary	5	1,75%
India	1	0,35%
Iran	1	0,35%
Ireland	4	1,40%
Israel	2	0,70%
Italy	14	4,90%
Japan	1	0,35%
Latvia	2	0,70%
Lithuania	10	3,50%
Luxembourg	1	0,35%
Mexico	1	0,35%
Moldova	1	0,35%
Monaco	1	0,35%
Netherlands	7	2,45%
North Macedonia	1	0,35%
Norway	3	1,05%
Portugal	8	2,80%
Romania	18	6,29%
Serbia	1	0,35%
Slovakia	8	2,80%
Slovenia	16	5,59%
Spain	9	3,15%
Sweden	8	2,80%
Tonga	1	0,35%
Turkey	19	6,64%
Ukraine	2	0,70%
United Kingdom	3	1,05%
United States	1	0,35%
<b>TOTAL</b>	<b>286</b>	<b>100,00%</b>

Figure 2: Sample Information - Locations of museums who responded to the survey

The majority of the institutions (82,2%) who responded were in urban settings with 32,4% of museums located in capital cities, while only 17,8% of museums described their location as rural or multi-site, but generally rural.

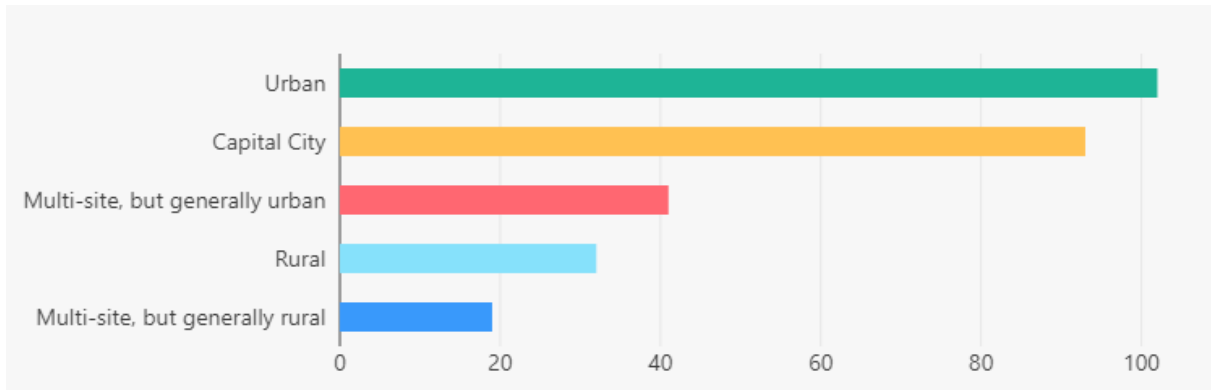


Figure 3: Sample Information - Area of responding museums

#### Type of institution and departments

As the chart below shows, most of the respondents belong to history and archaeology museums (27,2%), followed by art (18,8%) and multidisciplinary museums (12,2%).

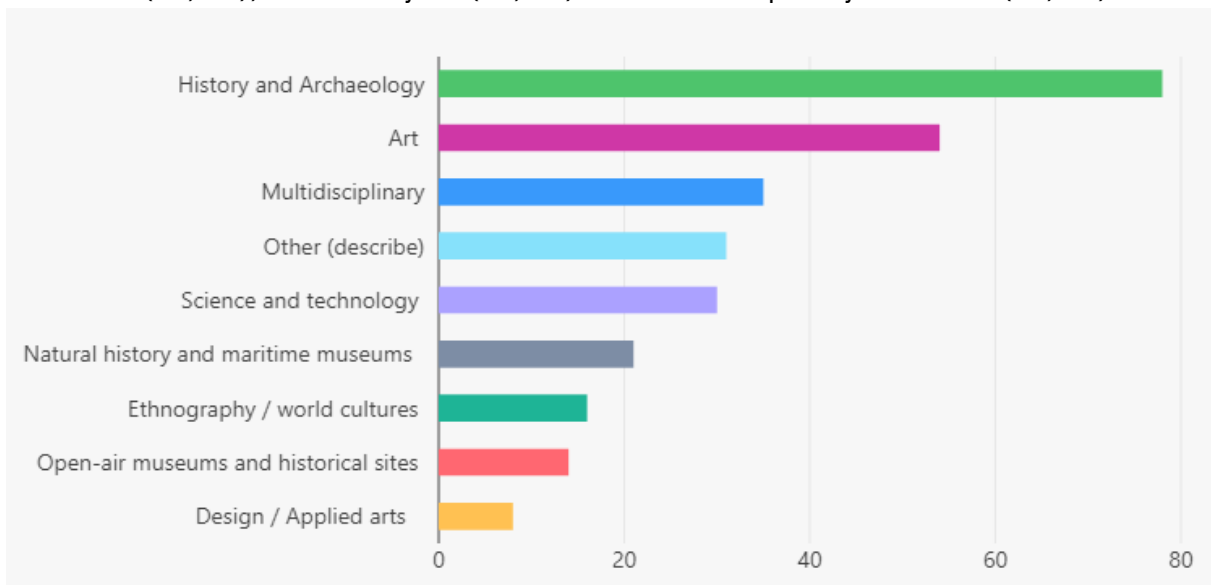


Figure 4: Sample Information - Museum sector/focus of responders



A large majority (67,6%) were publicly funded institutions.

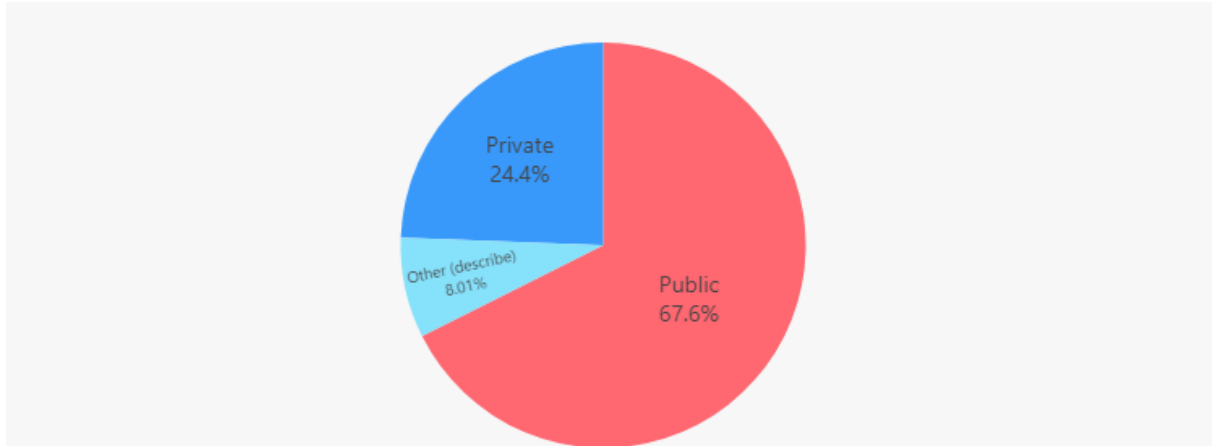


Figure 5: Sample Information - Ownership of museum responders

In terms of the departmental distribution, most respondents were CEOs or museum directors (19,9%), followed by employees in the curatorial and exhibition management department (17,8%), and practitioners in the museum's collection, conservation, archives, library, and research team members (15,7%).

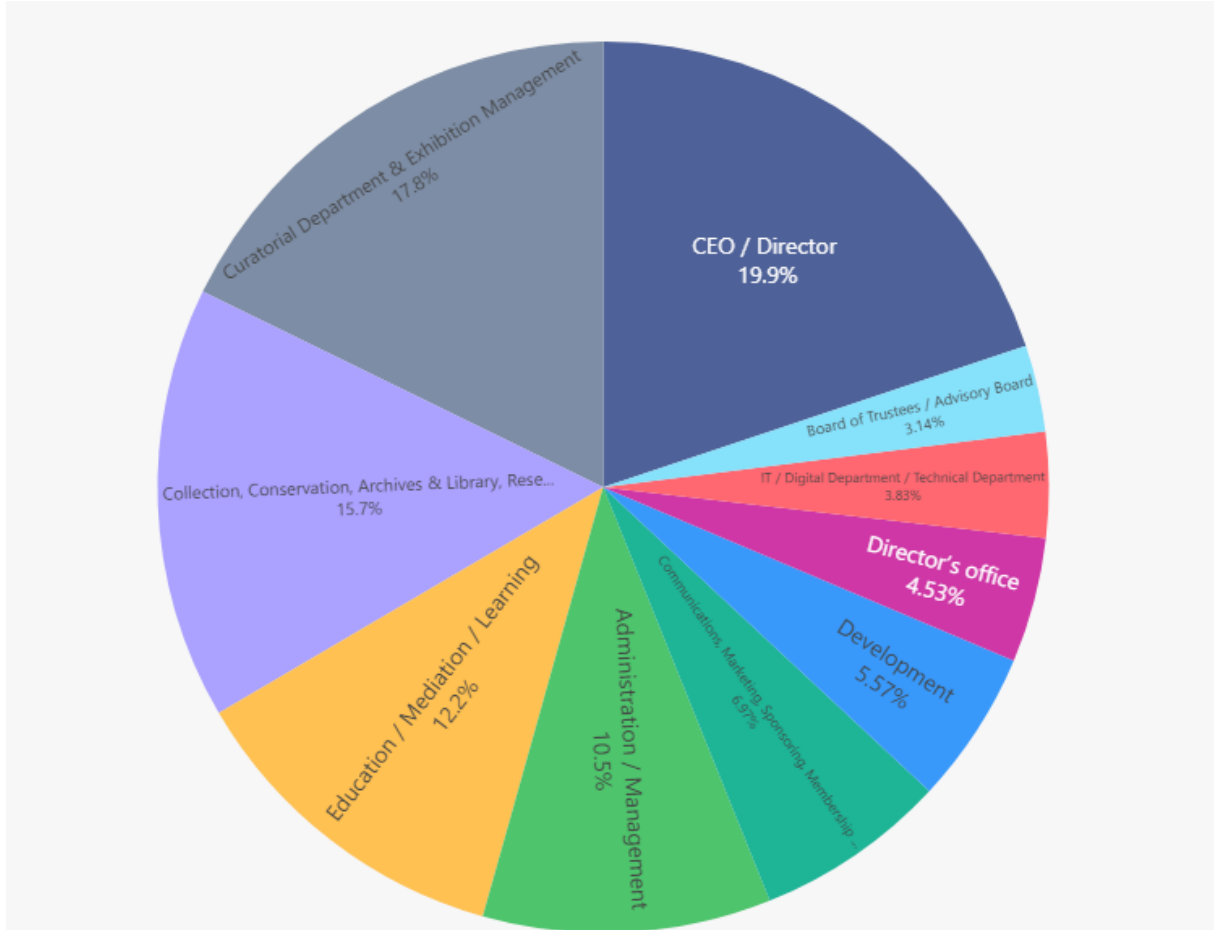


Figure 6: Sample Information - Museum departments responders belong to

### DOORS' involvement

Most institutions who responded planned to apply (at the stage of the survey) or had already applied for the DOORS incubation programme.

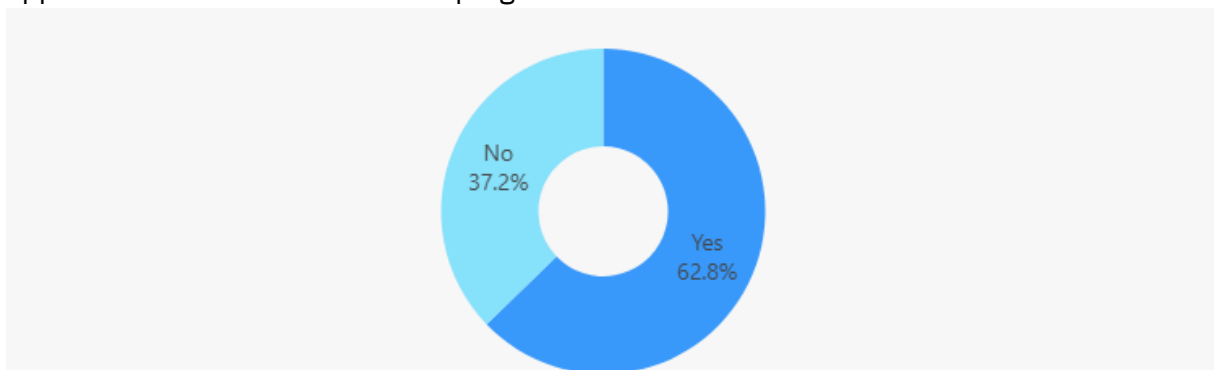


Figure 7: Sample Information - Percentage of responding museums who applied for DOORS'

When asked how they expect DOORS to benefit their organisation, the most common response was “introducing more digital working & collaboration culture and build capacity in the use of digital tools” (22,8%). It was closely followed, by “learning from the practice of other institutions” (18,8%), “staying competitive and relevant” (18,8%) and “raise awareness about the implications and expectations concerning a about digital transformation” (13,2%).

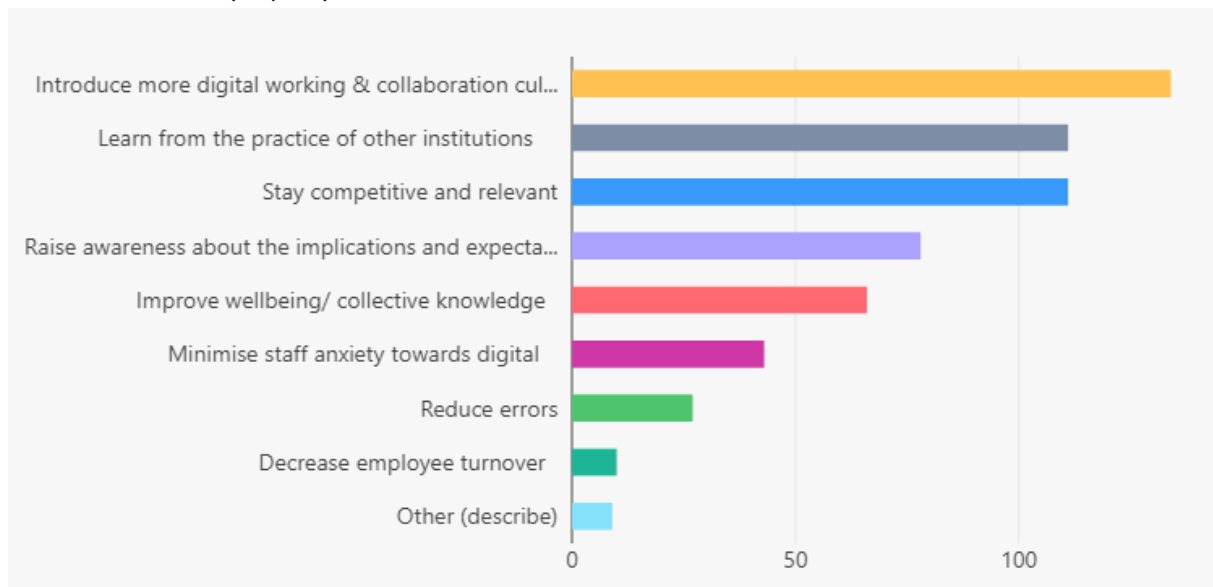


Figure 8: Expectations on DOORS' program

### Digital activities

Figure 9: Digital activities the survey respondents are already undertakingThe graph below shows the types of activities museums are already undertaking in the field of digital (204 survey responders answered this question):



Figure 9: Digital activities the survey respondents are already undertaking

## 2.2 Self-Reflection Reports

DOORS designed a **Self-Reflection Tool (SRT)** to assess the Digital Maturity of museums and organisations. Self-Reflection Tools are essential devices that support organisations and their people in understanding crucial elements in areas such as management, skills, processes, challenges, prospects, etc. Most importantly, Self-Reflections Tools are helpful in facilitating plans of action, based on a realistic overview of an organisation backed by meaningful data, and tuned to change.

In our tool, we propose a reflective process as the basis for mapping out the steps for any digital transformation. These steps covered the different aspects, from digital skills and organisational strategies, innovation, and the audience ecosystem (online and pre-visit user journeys, onsite audience journeys, and the onsite and online user experience) to mindsets and attitudes toward digital - to help museums **anticipate their needs and potential obstacles along the entire pilot implementation journey.**

The tool was not designed to audit and rate organisations' digital maturity but to help museums analyse more accurately aspects within their organisation and identify their strengths and weaknesses before setting out to implement their digital pilots in the second stage of the incubation programme.

Each museum was asked to write a **5-10 page report assessing their status quo and needs** with an eye to their digital pilot implementation, defining necessary preparatory steps, benchmarking & defining key performance indicators, as well as adjustments to institutional frameworks.

The DOORS SRT draws elements from a variety of other resources and tools and is divided into five areas of interest each containing a set of questions. Each question is followed by an elucidatory text that suggests a particular angle to create opportunities for meaningful individual reflection or team discussions. The categories/questions are:

### 1) Strategy. (2 questions)

- Does your organisation have a digital strategy?
- How has your organisation identified the biggest challenges to digital maturity?  
Describe the process.

### 2) Organisation. (2 questions)

- Is there a dedicated person or department overseeing digital maturity?

- Has your organisation recognized and cultivated a set of values and culture when it comes to digital development? Is your organisation considering the issues of identity, diversity and inclusion in its quest for digital maturity?

**3) Skills.** (2 questions)

- Does your organisation value digital literacy and provides training opportunities for digital skills enhancement?
- Does your organisation promote the acquisition of digital skills in the community?

**4) Innovation.** (1 question)

- Does your organisation support digital innovation?

**5) Openness.** (1 question)

- Does your organisation support openness through synergies with external stakeholders and communities and do digital tools play a role in this endeavour?

The three possible answers (enabled, consistent, integrated) served as a starting point with the option given to respondents to introduce a fourth category if considered to be more descriptive of their context.

To ensure adequate support for museums throughout the pilot implementation processes, we have summarised and analysed the essential findings of these reports and we are sharing them anonymously in Chapter 3.

## 2.3 Incubation Programme

Following an open call, DOORS involved 40 museums in a **shared learning incubation programme**. This first stage of the incubation programme aimed to support participating museums in refining their initial pilot proposals and to create a general framework for implementing them by addressing important questions such as:

- how are digital skills currently being supplied and developed?
- what are the changes needed at an organisational level for digital skills to be further accelerated?
- what digital skills and literacy are needed to promote further changes?

Museums were also supported in reassessing the innovation area of their pilot and introduced to actors in the tech and creative sectors to ensure fruitful cross-sector collaborations during the implementation stage.

The design of the first stage was based on the **needs assessment** the DOORS team carried out prior to the start of the programme and consultations with members of the Orbit (a



selected group of museum experts with an advisory role in the project). From April to June 2022, we organised 3 two-day workshops tackling topics like digital strategies and digital maturity, comprehending audiences, possibilities for and relevance of new revenue models. Additionally, we hosted group mentoring sessions focused on media and digital production, and presentations by digital solutions providers to help museums identify the most suitable partners and efficiently allocate and exploit resources with sustainability in mind.

The first stage of the incubation programme aimed to instigate a shift in thinking about digital in a strategic and coordinated manner, that cut through overwhelming opportunities and ever-growing complexities and, crucially, offered support in pinpointing a focus. Consequently, a broader institutional approach was prioritised over centralised one.

The workshops facilitated by Dr Lauren Vargas on **Digital Maturity Self-Assessment** - which introduced evaluation areas like governance, management, metrics, processes, community, and tools/technology - gave participants a chance to go through in-depth assessments and evaluations of their institutions. Practitioners were invited to reflect on how their institutions' function – in terms of collaboration, approach to challenges, making space for innovation, communication etc. - and how they encourage critical thinking, informed decision-making, continuous capacity building and organisational adaptation.

The Workshop facilitated by Audience Agency encouraged museums to reflect on their **relationship with audiences** – how they track, describe, and analyse digital engagement, how they respond to the learnings and/or direct audience feedback and how they integrate it into the development of new content.

These self-reflection exercises in digital maturity and responsiveness to audiences provided the museums with a roadmap for a digital transformation and the scaffolding for 'building' the 'museum of the future'. It also prepared the participants for filling out the self-reflection report at the end of the first phase of the incubation programme.

The first stage was a learning curve for both the pilots and the DOORS team. It allowed us to get a better understanding of the contexts in which museums operate (with museums from 27 different countries). It also gave us a first-hand account of the digitalisation efforts and the obstacles encountered in these institutions and a glimpse at the general excitement within the museum workforce when it came to digitalisation. We gained valuable insights that will guide us in planning the second stage.

In developing the content for the **second stage of the incubation programme** (November 2022 to July 2023), we will also consider the learnings and conclusions drawn from the initial



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survey, as well as the self-reflection exercise and the evaluation form that participants filled out following the first stage. We seek to align the content of the sessions and their distribution throughout the duration of the programme with the stages of implementation the pilots will find themselves at.

### 3. DOORS' Needs Assessment Findings

The culture and heritage sector is becoming increasingly aware of how the digital shift changes the delivery of institutional work, the organisational setting and team structures.<sup>3</sup> There is also a growing recognition that there is more to digital than skills and that, as Ross Parry puts it, “digital’ has changed the idiom of ‘museum’”.<sup>4</sup>

Thus, any strategy intended to create a shift in thinking and allow visions for the future to take shape, must be preceded by a look into the institutional status-quo, zooming into skills development practices, existing digital infrastructures and the drivers of change.

#### **Organisational Frameworks and Digital Tools**

Successful development and deployment of digital skills and literacy for museum teams cannot happen without organisational conditions in place:

- Resources, processes and technical infrastructure
- Supportive leadership that fosters an internal culture conducive to digital skills and literacy-building
- The space for staff to pursue their digital development
- The space for honest discussion about the challenges

The lag in digitalisation in the museum sector compared to other sectors, means the investments in digital infrastructures needed are significant. As a result, “digital first” becomes too costly for museums and is often a reason for the lack of funding. Consequently, the digital products are often side products often deemed unappealing by visitors. The findings of King, Stark, and Cooke back this observation: “[F]unding is one of the key challenges identified by respondents, and it leads us on to questions about economic value. It is clear that money is scarce and what there is, our findings suggest, is often wasted through under-funding of a project, not providing longer-term support and/or channelling dedicating funding toward the wrong areas.”<sup>18</sup>

<sup>3</sup> Tallon, L. (2017). Digital is More Than a Department, it is a Collective Responsibility. *The Met*. Published 24 October 2017. Available from: <https://www.metmuseum.org/blogs/now-at-the-met/2017/digital-future-at-the-met>

<sup>4</sup> Parry, R. (2007). *Re-coding the Museum: Digital heritage and the technologies of change*. London and New York: Routledge.



This is also mirrored in our survey and the responders' assessments on the barriers to integrate digital tools within their museums. 38% stated that their difficulties in accessing external funding for digital projects would have significant impact, while even 51% claimed that the overall lack of funding to be allocated to digital projects is their overall biggest barrier (out of 16 pre-defined barrier parameters in our survey; 0=no impact, 1=minor impact, 2=moderate impact, 3=significant impact).

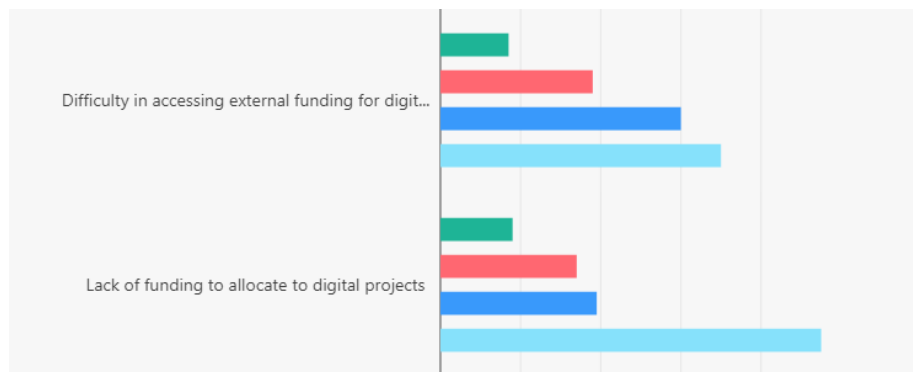


Figure 10: Assessment of survey respondents on impact of various parameters on integration of digital tools

While access to digital tools and technical infrastructures can only be solved with substantial funding, a few preparatory steps can be taken by institutions. DOORS has placed particular emphasis on opening the discussion between museums and the tech and creative sectors as a way to bring practitioners up to speed on the technologies available and their features and help them identify those suitable for their digital pilots.

Too often, digitalisation is driven by a fascination with tools and technologies. We thus, see a need for cross-sectoral exchange toward the development of tools and solutions that serve museums.

65% of survey respondents claimed to use digital tools to “engage more extensively and deeply with existing audiences”, 63% to “improve accessibility”, 59% to “improve visibility of digital contents and digital distribution channels we are developing” and 58% to “understand our audience and their perception of us”.



Figure 11: Response to question “Over the course of the following three years, what areas would you like to see significant positive impact from your museum’s use of digital technology and tools?”

In contrast, when being asked about the factual impact of digital tools in the previous three years, less than 1 in 3 survey respondents thought they had a positive impact on the “understanding of audiences and their perception on the museums”. The reasons for this discrepancy between the intended use and the perceived low impact can be the failure to define goals and subsequently, track and measure digital activities.

## **Effective Leadership – Enabling a Culture of Change**

Agents of change are a powerful way to kickstart change and sustain it within an organisation.<sup>5</sup> To act as an effective agent of change, leadership must not only be digitally literate - in the broader sense, where digital literacy is “more about digital confidence and understanding than digital skills”<sup>6</sup> -, but also use soft skills to create space for open and honest discussions, nurture confidence and support staff so that change becomes desirable rather than feared.

Most respondents to our survey perceive senior leadership as knowledgeable and supportive of digital endeavours.

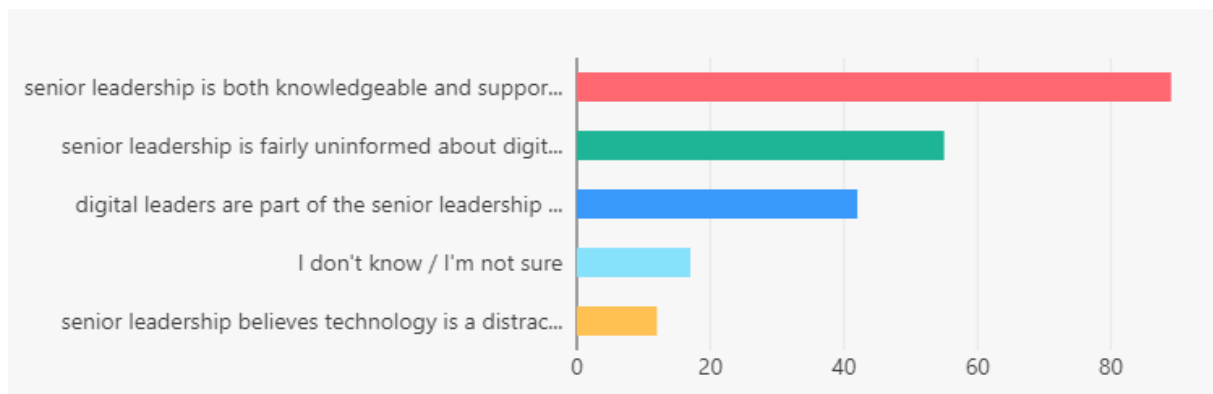


Figure 12: Assessment of the survey respondents on their leadership's attitude towards digital projects

Similarly, a report published by the Knights Foundation in 2020 concluded that: “Leadership self-reports high support for digital. Just under half of the institutions reported museum leadership is knowledgeable and supportive of digital projects. Across all museums, 11% say digital leaders are a part of senior leadership teams, but that drops to 9% for art museums. One caveat: the individuals filling out this survey were more likely to be leadership, and therefore more likely to rate themselves as knowledgeable and supportive.”<sup>7</sup> This was also the case for our survey Figure 6.

One of the responses to our evaluation survey pointed out an interesting fact. In response to the question "How can we improve the Incubation Programme? What do you find crucial for

<sup>5</sup> Finnis, J.; Kennedy, A. (2020). *The Digital Transformation Agenda and GLAMs. A Quick Scan Report for Europeana*. Culture24. Available from: <https://pro.europeana.eu/post/the-digital-transformation-agenda-and-glams-culture24-findings-and-outcomes>

<sup>6</sup> Finnis, Kennedy, 2020.

<sup>7</sup> Knight Foundation (2020). *Digital Readiness and Innovation in Museums. A Baseline National Survey*. Available from: <https://knightfoundation.org/reports/digital-readiness-and-innovation-in-museums/>

its relevance as a shared learning endeavour and as a support structure for an individual institution?”, the respondent said:

“One of the biggest divides I noticed during the program was the way it was used by more and less empowered organization representatives (in terms of leadership support and authority they had available to actually act upon gained insights) - perhaps there would need to be a segment for leadership to attend?”

Perhaps capacity building programmes need to address the leadership of cultural institutions too, for while they might not be directly involved in the implementation, they do play a key role in preparing an organisation to take on digital.

### ***Upskilling the Workforce***

As digital outputs provide new ways to engage with audiences (through education programmes and learning resources), present objects (producing digital replicas and representations of objects) and facilitate interaction with objects, the need to support the workforce in developing their digital skills and ensure future innovation will only grow.

The ever-shifting digital landscape puts forth new digital literacy demands and has already brought about changes in the roles within museum teams. Museums now know they must focus on identifying the skills needed in the current context, as well as anticipate the skills needed to address upcoming changes.

Approaching digital skills as a self-sustaining ‘ecosystem’ that can ensure sustainability and adaptability to rapidly changing labour markets and broader, more complex educational, economic and political contexts that impact work conditions<sup>8</sup> can be most beneficial. In shaping this ecosystem, all its four elements - deployment, demand, supply and development<sup>9</sup> - must be assessed on a regular basis.

<sup>8</sup> Finegold, D. (1999). Creating Self-sustaining, High-skill Ecosystems. *Oxford Review of Economic Policy*, 15, 1, 60-81.

<sup>9</sup> **Deployment** defines how skills are utilised and practised within specific contexts, - i.e. how skills are put to work, what for and by whom -, and the influence of the structures around those roles. **Demand** is concerned with recognising what skills are needed in the ecosystem and what may be needed in the future to address the changing context. **Supply** is the ‘nourishment’ of the system (Finegold, 1999) with a focus on recruitment (extending skills, expertise and knowledge through new staff) and staff retention strategies. **Development** is focused on how skills, competencies and expertise are nurtured within a context going beyond training interventions (both formal and informal).

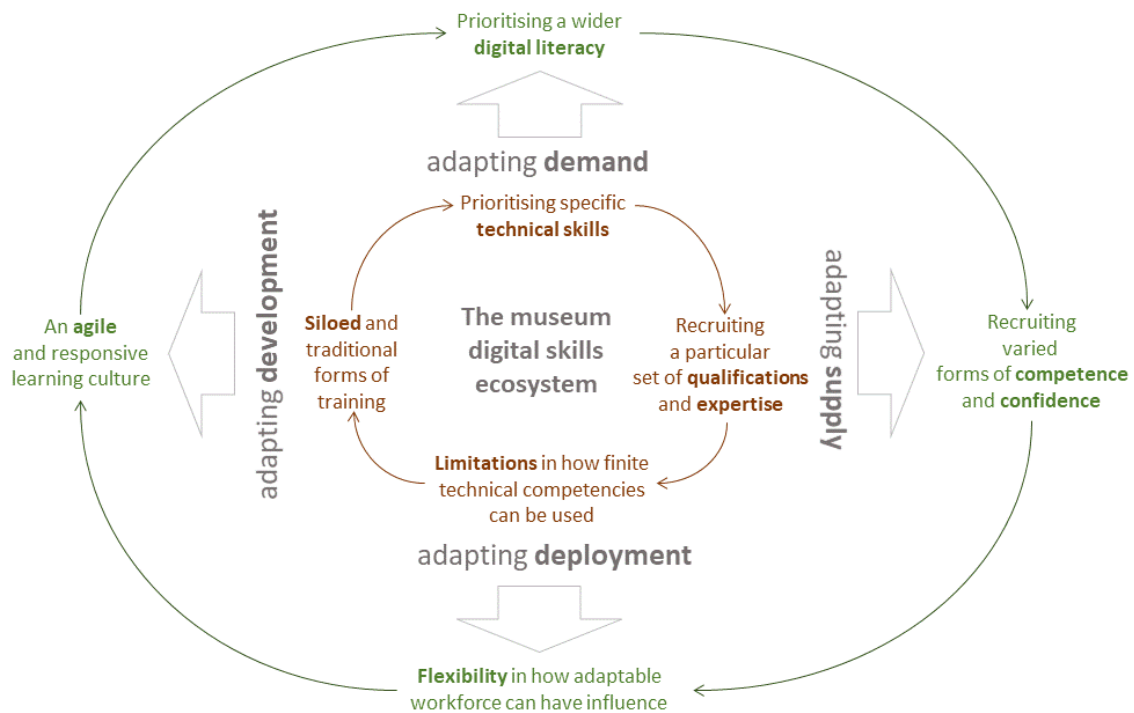


Figure 13: Balancing The Museum Digital Skills Ecosystem<sup>7</sup>

An understanding of the skills ecosystem and the ability to work within one are often lacking in small and medium-sized museums. In-house training is limited by insufficient resources and, if it does happen, it is only at a departmental or individual level. The mechanisms for further dissemination are underdeveloped and/or underprioritized. Museum professionals from the DOORS cohort reported that much of the upskilling happens individually, outside working hours, and is mostly achieved through informal knowledge exchange and peer-to-peer learning.

68% of survey responders assessed “digital content management and editorial” as most important digital skill, followed by “social media”, “data management and analysis”, “web/app development” and “digital design, interface design”. Only 13% of responders considered “e-commerce”, “product management” (18%) or “intellectual property and rights management” (20%) as most important skills.





Figure 14: Assessment by survey responders of important skills for museums

While “digital content management and editorial” and “social media” skills are considered both important and better served, this is not the case for more specialised skills such as “data management & analysis”, “web/app development” and “digital design, interface design”. The latter were assessed as basic or rather under-served in our survey:

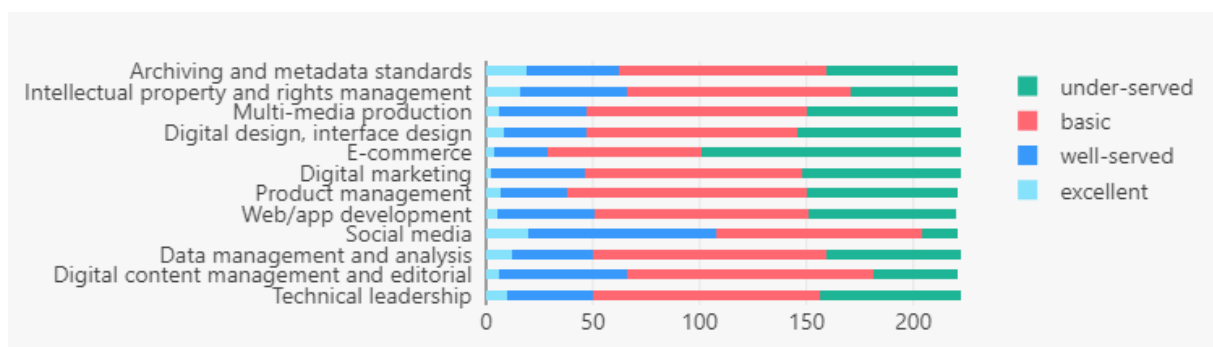


Figure 15: Survey responses to question “Please rate how well the skills and capabilities listed below are currently served within your museum?” (1=underserved, dramatically lacking or deficit; 2=basic; 3=advanced)

Although the need to upskill and re-skill in response to digitalisation is recognised throughout the sector, paradoxically, capacity building often depends on project-based funding, temporary or singular sectoral (pan-European, national, regional or sector-specific) initiatives and formats. Across museums in the DOORS cohort, training and development happened on

ad-hoc basis, often in response to a particular occasion/function (such as a project). None of the museums in the cohort reported undertaking an organisational assessment of digital skills needs. As a first step, small and medium-sized museums need to explore the changes needed at an organisational level to facilitate continuous developed of digital skills in the long term.

We believe such a pro-active approach to designing capacity building frameworks must follow some essential steps:

- Acknowledging the need for organisational change that prioritises capacity building.
- Formulating long-term strategies that define the priorities and goals of capacity building (informed by current needs and foreseen future needs).
- Drafting plans of action that map out the implementation of capacity building programmes and track their evolution.
- Developing additional systems to support staff in building their digital skills and literacy effectively (guidance, tools and resources).

Moreover, these frameworks need to be:

- Values-led and aligned with the organisational missions;
- Person-centred, nuanced and contextualised (connecting the acquisition of digital skills with everyday practices and setting);
- Led by staff needs rather than technologies or other external drivers.

The complexity of such frameworks shows that it would be unrealistic to expect an initial digital skills and literacy framework to cover all different possible contexts. Therefore, such a framework needs have an inbuild dynamism that allows it to respond to contextual differences. In designing their frameworks, museums must strike a balance between the tendency of any institutional frameworks towards universality and the highly situated and contextualised nature of digital skills and literacy.

However, given the insufficient resources in small and medium-sized museums, sometimes more creative, less resource-intensive strategies to support the staff in upskilling might have to be deployed. It is already the case that professional networks, publicly available resources and partnerships within funded projects are essential to the development of digital skills and activities within small museums. A majority of survey responders stated to use a diverse range of website and resources to get information on museum management. The importance of these resources could not be overstated.

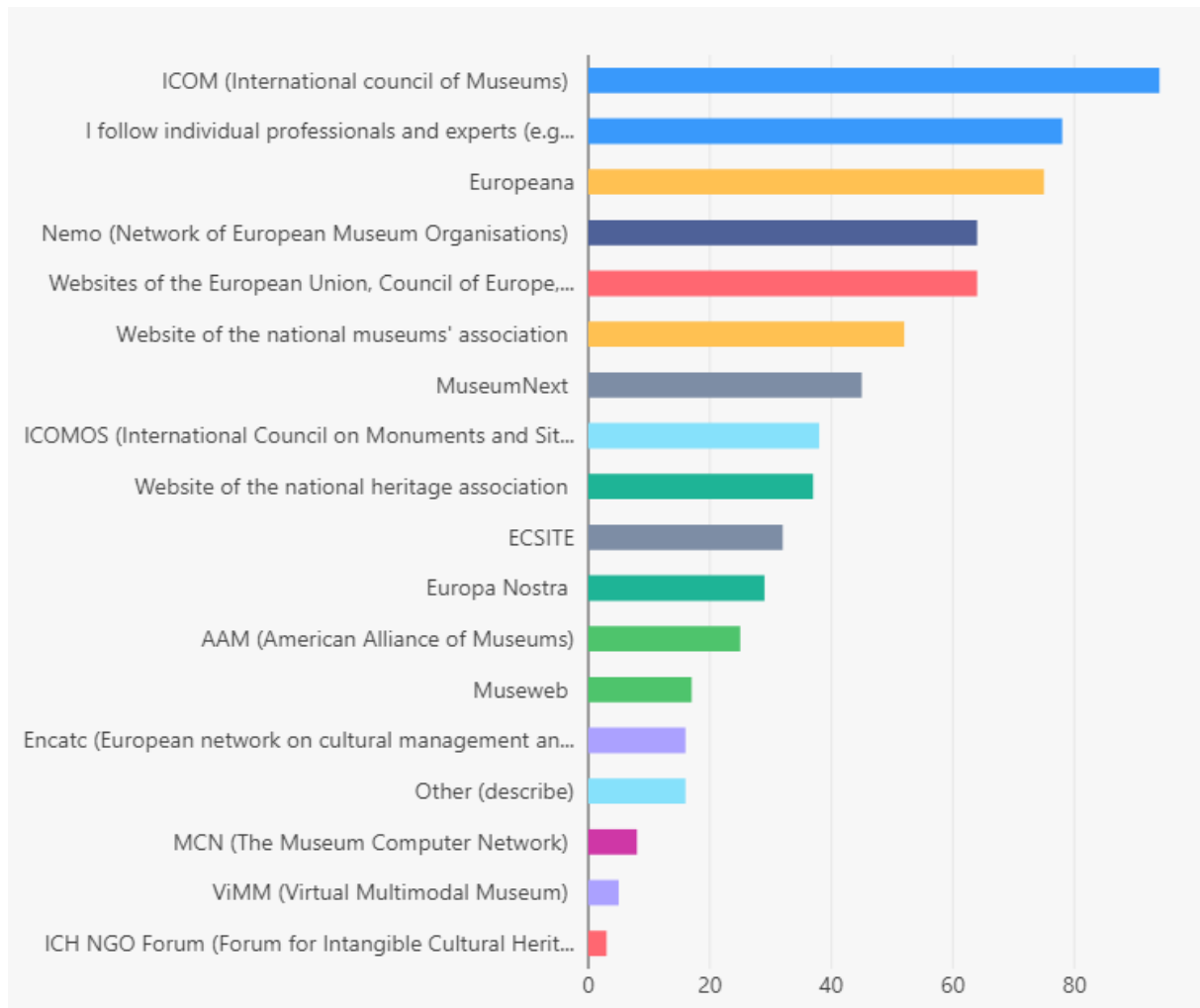


Figure 16: Websites and platforms used to get information on museum management

Furthermore, the development of digital skills could be set to take place within collaborative frameworks that bridge departments and allows for knowledge exchange (for example, cross-departmental working groups) even when that is within the context of a one-off project.

### Attracting Digitally Skilled Workforce

The shallow resource pool in small and medium-sized museums means that they rarely have a dedicated team for digital. As such, there are rarely roles dedicated to digital activities, which leads to the common issue of a less specialised workforce within small organisations compared to larger ones. In small museums, the reality is that digital tasks that would ideally be distributed across several digital roles, are undertaken as appendixes to non-digital tasks.

41,7% of respondents to our survey claimed that there is no specific department or person coordinating digital activities within their organisation:

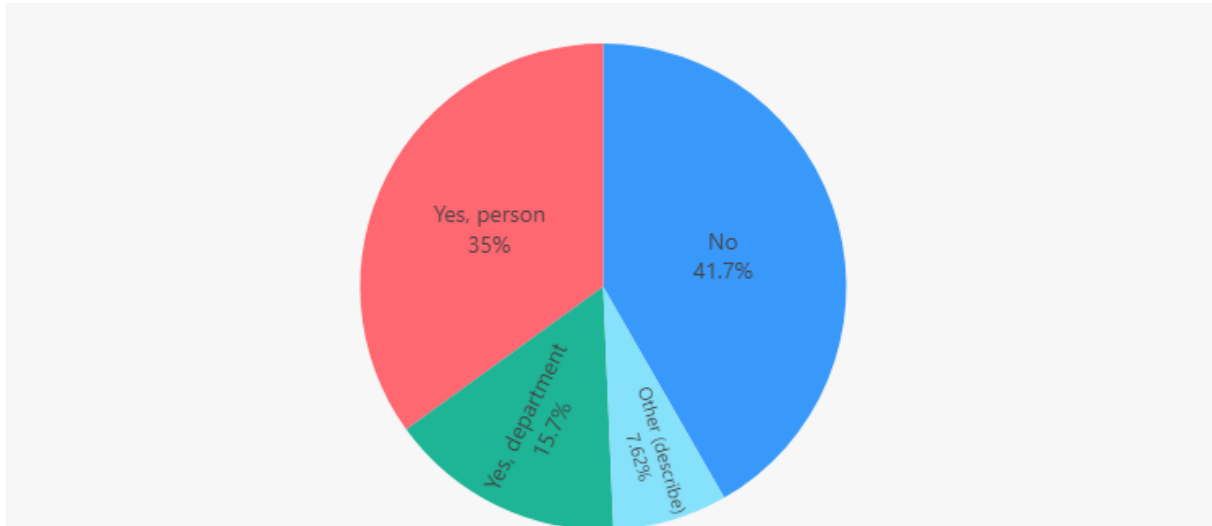


Figure 17: Responders' answers to "Is there a specific department or a person who coordinates digital activities within your organisation?"

Digital has become integrated into the job roles focused on collections, marketing and communication, education and learning as well as enveloped into a curatorship portfolio. It is broadly recognised that more and more roles have changed and continue to change to incorporate tasks that require digital skills. However, rarely do such skills or tasks make their way into the official job description(s).

An issue that inevitably arises is the museum's ability to attract skilled staff. For these capabilities to be improved, the sector needs to address remuneration (salaries commensurate with other sectors), available career pathways and further upskilling opportunities, and staff retention strategies.

### ***Dedicated Teams and Resources: The Backbone of Digital Strategies***

One key observation drawn from the survey is that many small and medium sized museums do not have dedicated departments or teams to address digital transformation or to implement their digital agenda (if existing) – see ***Fehler! Verweisquelle konnte nicht gefunden werden..***

Similar results have been highlighted by the Knights Foundation Report from October 2020, which showed that dedicated digital staffing is severely limited, particularly in small museums, whereas “medium-size institutions (\$5–20 million annual budget) were twice as likely to report digital development teams in-house as smaller institutions.”<sup>10</sup>

One reason for this is that often, digital projects require cross-departmental efforts, and many existing departments have to be involved in these processes (e.g. technical department, museum curators, museum guides). This is especially true for smaller institutions with limited staff.

The SRT reports also show that the limits in funds (that would finance staff) are the most frequently invoked practical reason for the lack of strategic digital development. This translates into frustration at not being able to dedicate time and resources to digital strategies:

- *“To a certain extent all employees are part of the digital process, but so far there is no clear strategy or structure in it. This got painfully obvious when we joined all the DOORS workshops”.*
- *“Being a public institution with limited funds, we don't have an opportunity to create an IT (not even a dedicated marketing) department with people who would take care of digital duties. The DOORS programme helped us to see more possibilities to digitize the internal processes”.*
- *“Officially there isn't a designated person responsible for digital enhancement throughout the Museum. However, due to the nature of the working environment and certain staff's background, there are various people responsible for specific digital tools and equipment. For example, the museum photographer is in charge of several IT, visual and photographic equipment (tablets, cameras, media players, etc.). However, no systematic digital development has been carried out. Rather, such developments have been aimed at equipment maintenance according to financial capabilities”.*

The survey also indicated that when small and medium-sized museums do have digital departments (e.g. “Digital Collection”, “VR Department”, “Digital Communication”) they still lack overall digital coordination units or staff. Dedicated resources for implementing digitalisation strategies and activities can prevent isolated technology-led developments in museums and improve the coordination of digital projects across relevant departments. If

<sup>10</sup> Knight Foundation, 2020.

not a department, a dedicated staff function in the museum management could be one possible approach to professionalize digital transformation processes; one of its tasks would undoubtedly be to harmonize the activities different departments undertake in digitalisation projects.

Time pressure and lack of guidance can often make those tasked with the digital transformation feel insecure about its implementation. Programmes like DOORS can significantly increase the sense of self-reliance of museum staff through access to knowledge, expertise and opportunities to enhance one's skill set.

Moreover, being part of a network can help practitioners keep up to date on trends and developments in the field, and not feel isolated in their digital journeys. The importance of such networks for museum practitioners became evident in the responses to one of the questions in our survey, where it was invoked as the main benefit expected from the incubation programme.

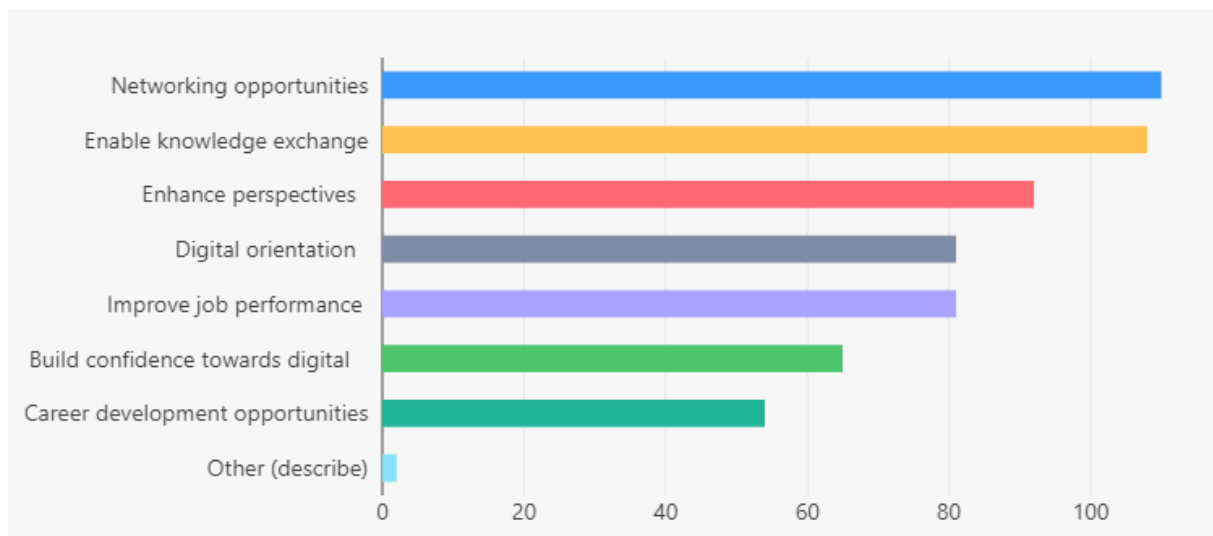


Figure 18: Responses to question “How do you expect DOORS to benefit you personally?” for those who applied to the program

Moreover, our survey shows that most museums (58%) regard partnerships with other organisations who share their knowledge as most beneficial to helping them develop digital skills across business models. 49% of museums also stated that training sessions delivered by external training suppliers would be highly beneficial to advance this domain:

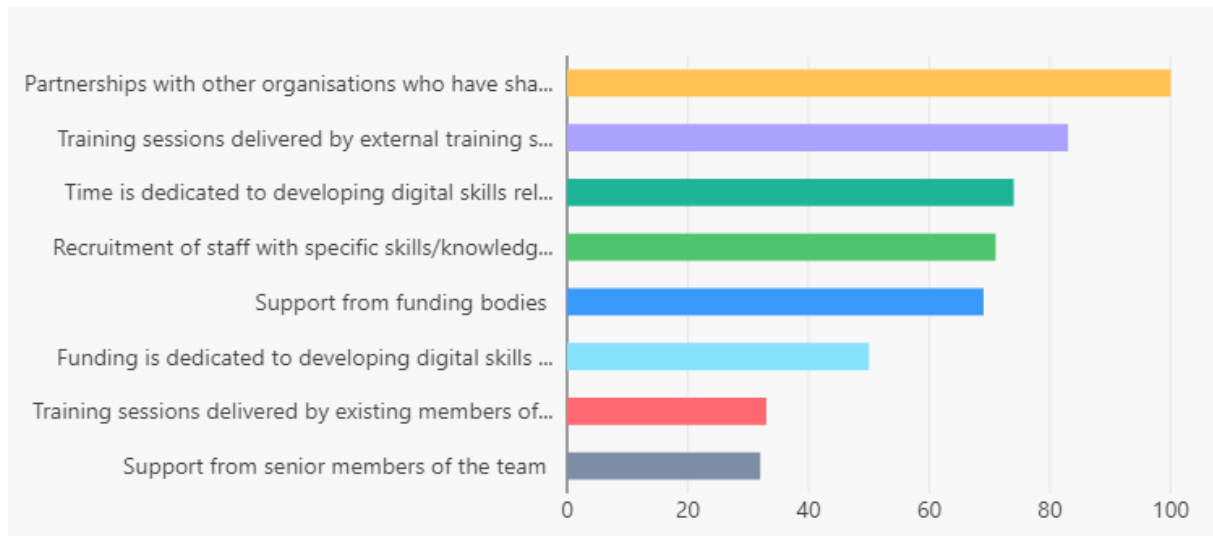


Figure 19: Survey responses on the most helpful factors to advance digital skills across business models

The success of DOORS and any other project in building digital self-confidence must be measured against the long-term impact of the programme. Only if participants succeed in “bringing home” their newly gained knowledge and skills, introducing a truly new perspective on digital transformation, passing them on to other staff or using them in their day to day, will the museum benefit in the long-run and the projects like ours can be deemed beneficial.

For these types of projects to reverberate, it is crucial that museums are open to a fundamental shift in their conceptual design. As one of the museums put it in their Self-Reflection-Report: “This is the cornerstone of the digital strategy - interoperability and digital as a normal part of everything”.

However, during the incubation programme we have noticed resistance to this that did not only come from a particular mindset, but rather from a lack of resources. Most participants feedbacked that the incubation programme, while helpful and inspiring, was also time consuming. Moreover, 80% of survey responders claimed that their digital budget is not big enough to match their ambition. Even participants with dedicated digital teams feedbacked that “to make a qualitative leap, additional funding is needed”.

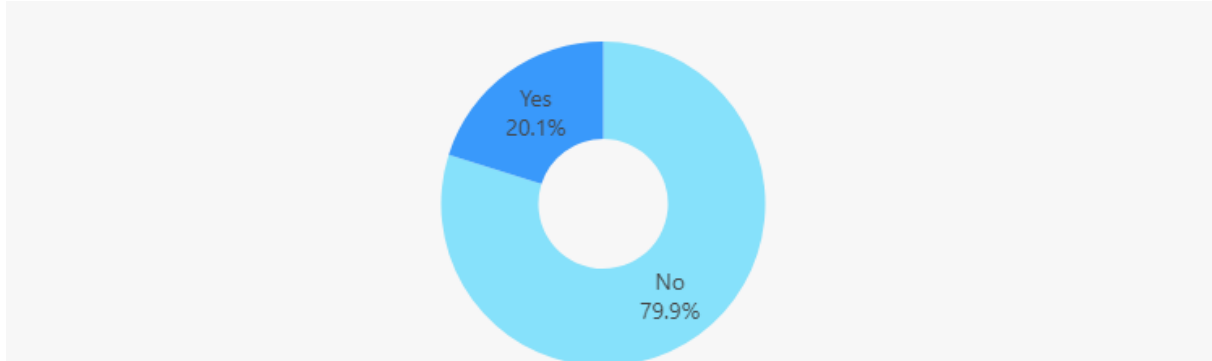


Figure 20: Museum responses on budget sufficiency for digital ambition

### Tracking and Digital Strategy Alignment

We learned from the survey that tracking and measuring of digital activities is still very much underdeveloped and, even more problematically, not anchored in the decision-making processes of museums. 28% of responders state not to have defined goals or KPIs (Key-Performance-Indicators), 21,5% have some defined goals, but no KPIs and do not regularly measure comprehensive outcomes, 11,3% regularly measure specific outcomes, but have no defined goals and 18,3% could not answer this question.

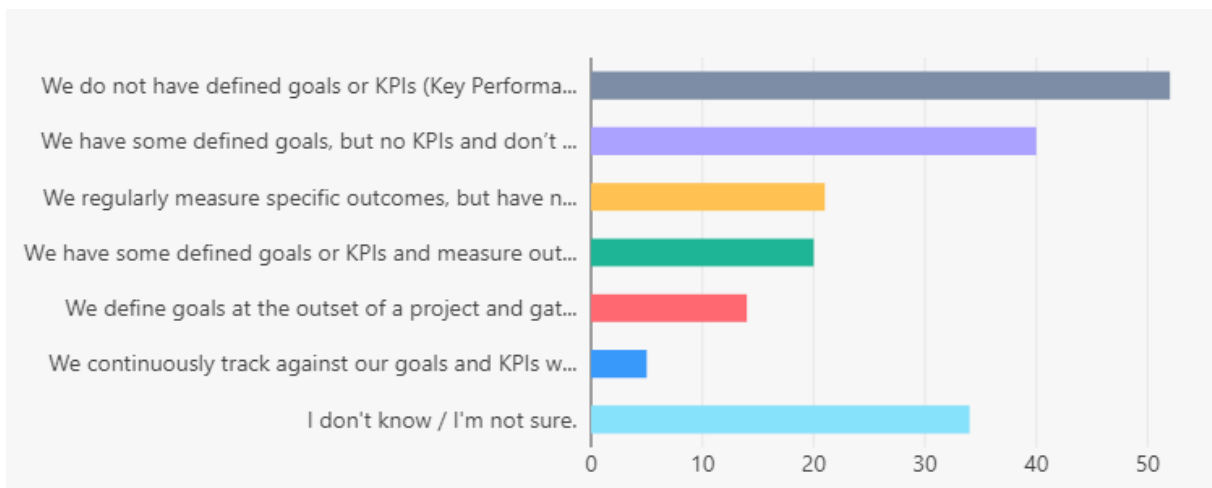


Figure 21: Museum responses on measurement strategies of outcomes/impacts of digital projects against set goals



This is not just particular to the institutions that responded to our survey. In their 2020 report, the Knights Foundation found that 41% of museums do not have any defined goals, KPIs or outcome measures for digital projects, and another 37% do so only on an ad hoc basis.<sup>11</sup>

Even among those who define goals and KPIs, a significant part (26,5%) take little to no action if digital KPIs are not met.

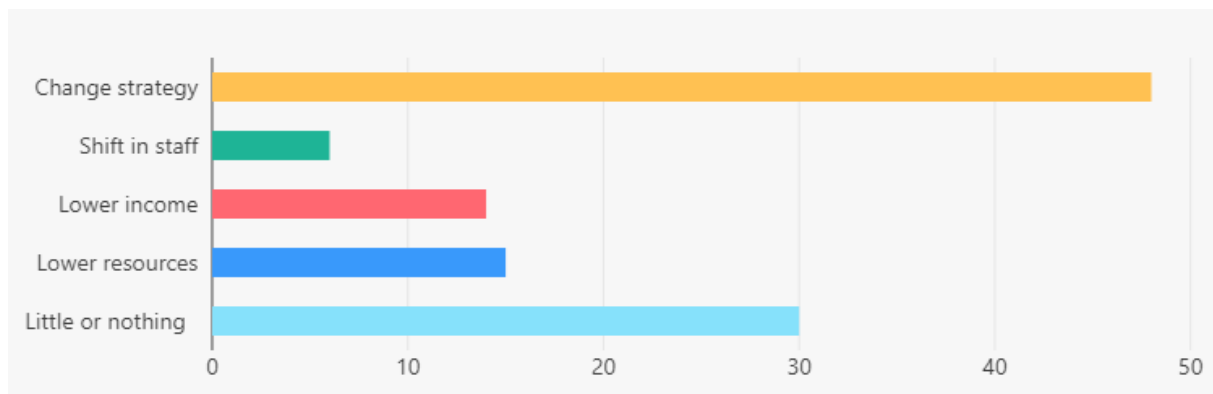


Figure 22: Museum responses on consequences of not meeting digital KPIs

The failure to act or ground decision-making in data is highly connected to insufficient planning for digital projects and practices. 35,5% of responders answered that planning is primarily done by individuals or individual departments, is isolated and project-based. 31,2% said that planning starts to bridge across areas and focus on museum-wide efforts though still dependent on project-based funding. Only 7,9% of responders reported more elaborate digital planning involving multiple agents and sufficiently funded on an ongoing basis.

The collection and analysis of data can inform museums not only about the performance of current projects but can be a solid basis for defining a direction and formulating a vision for the future that makes digital strategies an integral part of the overall institutional strategy. The lack of processes in place to firstly, define the indicators of an impactful project and, secondly, to measure that impact can result in the failure to understand the impact of any digital activities and respond accordingly.

In practical terms, this can mean a failure to understand current audiences, an inability to identify potential new audiences and produce more inclusive content that appeals to diverse audiences. At the same time, it can leave digital projects without a basis on which to argue

<sup>11</sup> Knight Foundation, 2020.

their continuation and further funding and it can leave teams unable to build a case for the necessity of further investment in capacity development programmes.

The responses to our survey showed that museum practitioners acknowledge the importance of measuring impact for the improvement of their services and understanding their impact on audiences:



Figure 23: Museum responses on what they would like to measure their digital impact for

Yet most continue to be laggard in defining goals and tracking their progress. We believe museums need capacity building and training programmes that prepare their staff to critically reflect on KPIs, respond with further actions, and not least, introduce them to digital tools and their applications. Professionalisation programs for small and medium sized museums on impact measurement, forecasting, benchmarking and assessment are necessary for the sustainability of any digital endeavour.

### **Operational and Often Neglected Groundwork**

Museums often invoke visitor experience, audience diversification and expansion as their primary drivers for innovation and the integration of new technologies:

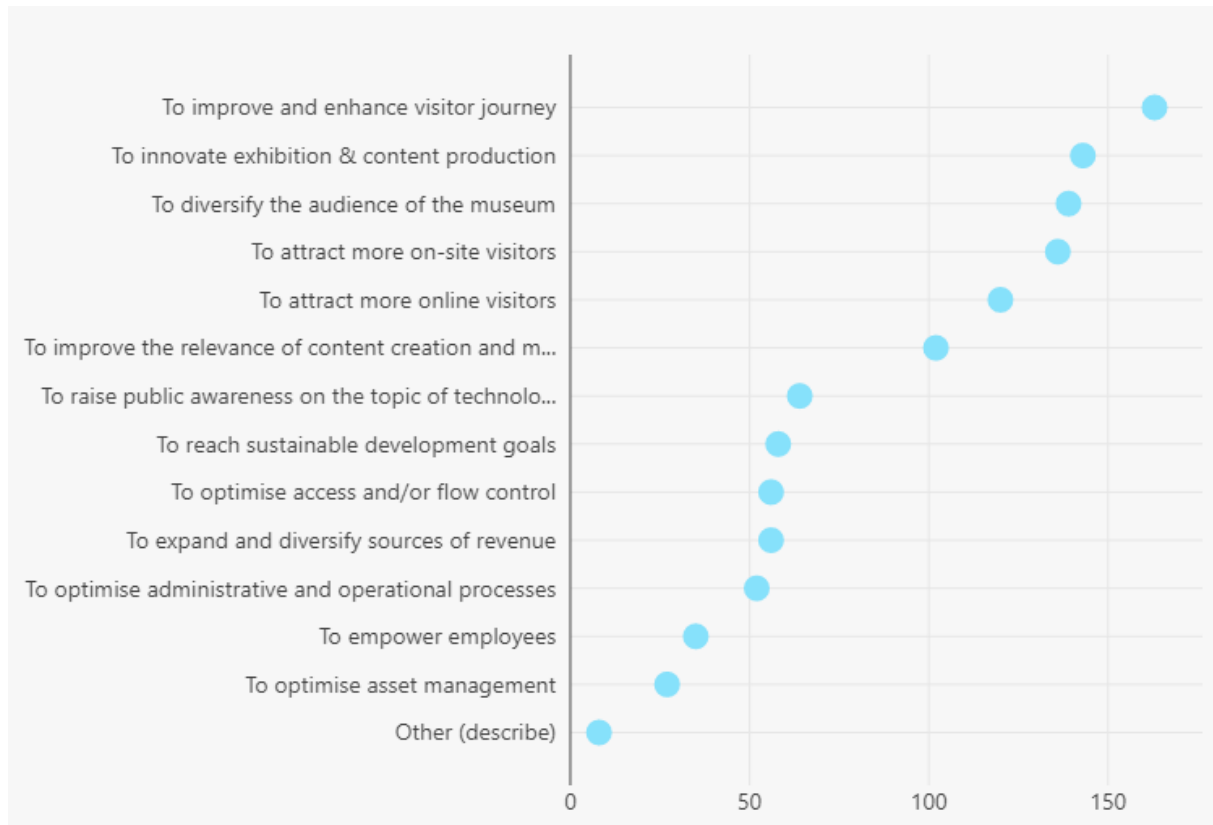


Figure 24: Museum responses on their primary motivation to apply new technologies and innovative processes during the last 3 years

Optimization of operational processes, human resource development and expansion/diversification of revenue sources were assessed among the least relevant innovation motors. There is a failure to see these actions as part of an ecosystem that requires simultaneous development of all its elements if it is to be sustainable.

What's more when these fundamental elements are neglected, even drivers of innovation regarded as important – visitor experience – suffer. For example, the implementation of audience facing activities must be accompanied by goals-driven data collection and analysis processes that then inform further action, if it is not to remain a stab in the dark. One of the benefits of digital technologies is the wealth of information they can provide on understanding who your audiences are, their visit behaviour, motivations, their needs, and

expectations. An understanding of the audiences rooted in data analysis is an essential first step in creating more compelling content for existing audiences and being able to infer other potential audience segments they can appeal to. Yet, as we have seen in the previous section, tracking and measuring processes are rarely in place.

Our assumption is that this is not always due to a lack of understanding of the importance of using data to assess the impact, but more often a lack of skills to use digital tools and make sense of the data provided, combined with the neglected groundwork for adjusting operational processes, setting skills development programmes and envisioning potential revenue sources.

### ***New Value Chains***

Creating digital-friendly cultures within organisations, supporting and sustaining digital capacity-building programmes, and implementing impact tracking and measuring processes are all part of the groundwork we think is needed for new and sustainable business models in the cultural sector. In the 2016 Digital Transformation in Museums report Axiell suggested that digitalisation in museums is not about simply installing an app or a digital service, but about digitalising their cultural services and re-designing relationships with museum audiences.<sup>12</sup>

The digital nature of cultural offers imposes a redefinition of value chains and a need for new value and business models.<sup>13</sup> Therefore, a central assessment question of DOORS is how digital strategies and values can help museums adapt and reinvent themselves in order to strengthen their performance, reach their audiences and develop new ones, and ultimately develop sustainable financial models.<sup>14</sup>

The above-sketched, crucial groundwork in data collection and analysis is also an enabler for new value chains. It helps museums understand where their untapped potential lies. However, this positive effect will only take place if museums do not stop at collecting and

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<sup>12</sup> Axiell Archives Libraries Museums (2016). *Digital Transformation in the Museum Industry. Museums Report 2016*. Available from: <https://www.axiell.com.cdn.triggerfish.cloud/uploads/2019/04/digital-transformation-in-the-museum-industry.pdf>

<sup>13</sup> Bertacchini, E.; Morando, F. (2013). The future of museums in the digital age: New models for access to and use of digital collections. *International Journal of Arts Management*, 15(2), 60-72.

<sup>14</sup> Museums Australia (2013). *Museums and sustainability. Guidelines for policy and practice in museums and galleries*. Available from: [https://www.amaga.org.au/sites/default/files/uploaded-content/website-content/SubmissionsPolicies/museums\\_and\\_sustainability\\_policy\\_2003-2012\\_to\\_be\\_updated.pdf](https://www.amaga.org.au/sites/default/files/uploaded-content/website-content/SubmissionsPolicies/museums_and_sustainability_policy_2003-2012_to_be_updated.pdf)

analysing the data, but also draw conclusions and let the learnings shape their overall strategy.

As Thierry Baujard (Jury Member, DOORS – Digital Incubator for Museums) notes, “digitalisation does not mean straight increase of revenue or change of model”. Museums must develop entirely new business models, instead of simply adding new online or hybrid revenue streams, models that factor in both costs and ROI from digitalisation.

In recent decades (and in particular in response to the global pandemic), museums have increasingly started to sell digital content, offer compelling storytelling and educational experiences through either memberships or single payments.

“Throughout the pandemic, museums have used digital platforms to launch fundraising appeals to avert insolvency or support online programming. Engaging with supporters in such ways presents opportunities to build monetisable digital communities. This can be understood as an extension of traditional museum membership schemes, which typically incentivise repeat in-person visits through perks like free exhibition entry. Subscription platforms such as Patreon bring together geographically dispersed communities around digital content creation. Patrons receive perks like exclusive access to content or involvement in the material created and are motivated by a sense of belonging to a community.”<sup>15</sup>

NEMO found in their survey on the impact of the COVID-19 situation on museums in Europe that 4 out of 5 museums increased their digital services during the pandemic to reach new or existing audiences, with nearly half of respondents stating their museum is now providing one or more new online services.<sup>16</sup>

A similar picture is shown by our survey regarding online services specifically aimed at serving digital revenue streams with a minority (37%) of respondents having not been able or did not intend to tap into these types of services, while others supplying a broad range of online activities in the past two years:

<sup>15</sup> Larkin, J.; Burtenshaw, P. (2021). *Museums and New Business Models*. ICOM international council of museums. Available from: <https://icom.museum/en/news/museums-new-business-models/>

<sup>16</sup> Network of European Museum Organisations (2020). *Survey on the impact of the COVID-19 situation on museums in Europe*. Available from: [https://www.nemo.org/fileadmin/Dateien/public/NEMO\\_documents/NEMO\\_COVID19\\_Report\\_12.05.2020.pdf](https://www.nemo.org/fileadmin/Dateien/public/NEMO_documents/NEMO_COVID19_Report_12.05.2020.pdf)

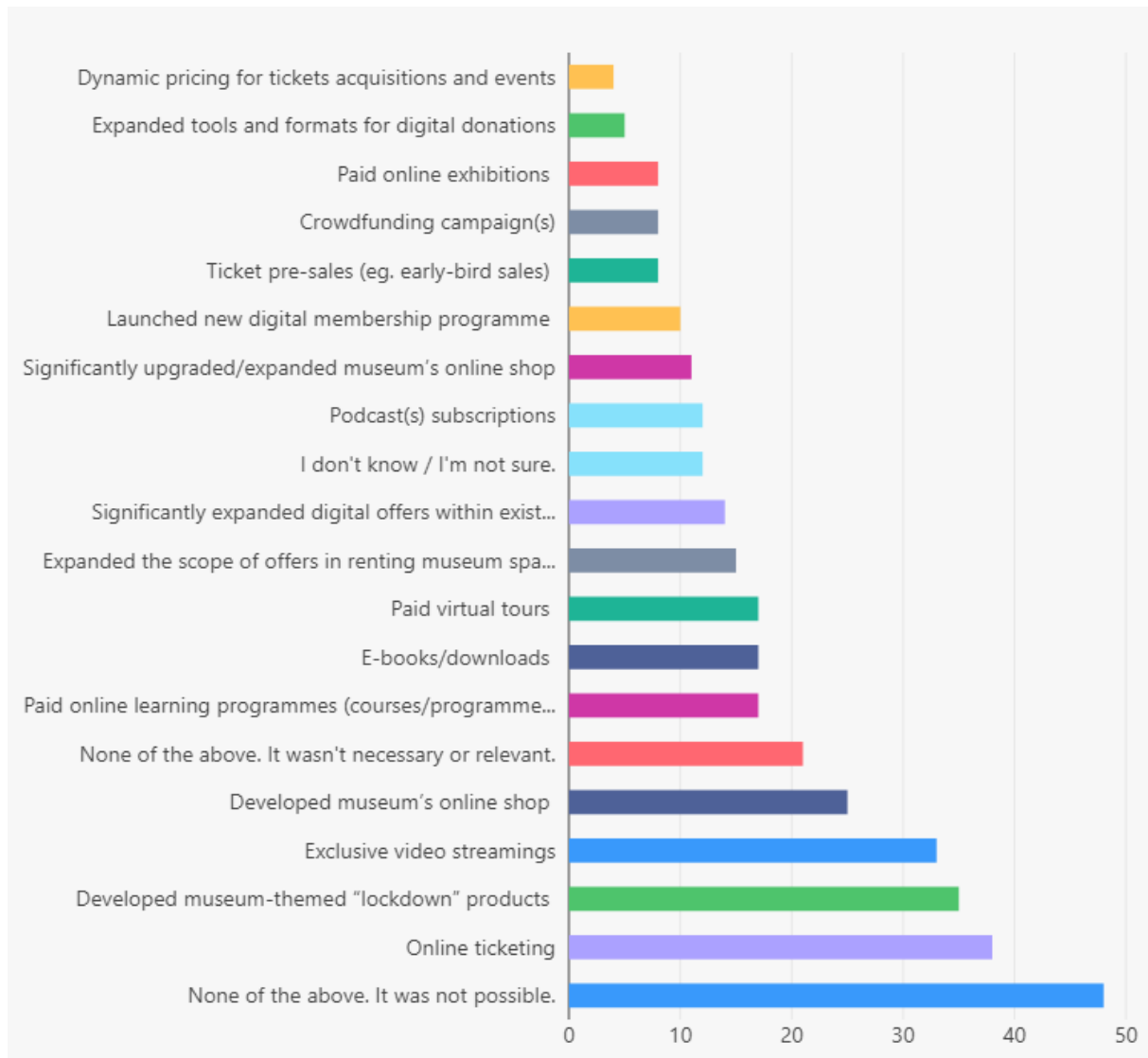


Figure 25: Museum responses on digital revenue streams which have been carried out in the organisation during the last two years

During the pandemic, retailing often was the only commercial activity to continue within museums, although in a limited capacity. This has meant that many museums had to grapple with the complexities of e-commerce. The potential of retailing to help museums create connections with visitors has long been known. In addition, e-commerce presents opportunities to develop sustained relationships with external audiences.<sup>17</sup>

<sup>17</sup> Larkin, Burtenshaw, 2021.

While, during the pandemic museums were adept at producing culturally themed products pertinent to the conditions of lockdown (for example, jigsaw puzzles and face masks), they again fell behind when it came to collecting, analysing and responding to the data available.

As shown by Figure 25, dynamic pricing is one of the main untapped revenue streams. We believe that there is a lot of potential there yet to be understood. Dynamic pricing can help museums understand the fluctuating patterns of an exhibitions allowing them to subsequently take action to stimulate demand. This would mean prices decreasing with demand to incentivise people to visit, and increasing when demand is higher to extract value. This changes the way audiences behave, as those sensitive to price start to seek cheaper tickets, and distributes the audience more evenly across the week. It also gives museums the chance to react to the in-market performance of the show in a flexible, supple way.<sup>18</sup>

### New Definitions of Value

Examples from the [DOORS' Sparkle Report](#)<sup>19</sup> also demonstrate how in particular European museums are developing entirely new value chains based on previously secondary or not-monetised services. These “alternative business models” show a variety of innovative ways to monetise activities in museums beyond those drawn directly from the private sector (such as up-scaling or cross-selling options) reflecting still the cultural identity of these partitioners. “While still mainly relying on major gifts, admission fees, and membership dues, grants, and other subsidies, cultural institutions are learning that they are not barred from exploring other revenue streams. If done in ways that propel a museum’s mission, monetising internal expertise or other assets can be tremendously fruitful and beneficial across the board.”<sup>20</sup>

A narrow concept of value and of business models seem to be common in the museum sector. The former is typically limited to economic value, while the latter falls prey to a lack of skills. In a shared effort, the museum sector needs to redefine the meaning of value and business models for their particular contexts, adding a wholesome perspective on the value chain and integrating a “community first” approach.

<sup>18</sup> Michaels, C. (2017). Museum business models in the digital economy. *nesta blog*, published 20 June 2017. Available from: <https://www.nesta.org.uk/blog/museum-business-models-in-the-digital-economy/>

<sup>19</sup> Tykhonova, Kucheruk, Carabela, 2022.

<sup>20</sup> Cieccko, B. (2019). Museopreneur: How museums are leaping into new business models with entrepreneurial spirit. *Museum Magazine*, 5/6 2019. Available from: <https://www.aam-us.org/2019/05/01/museopreneur-how-museums-are-leaping-into-new-business-models-with-entrepreneurial-spirit/>

## Business Development Skills

There is significant room for development. While a few museums rate their insufficient digital skill level sufficiently advanced as a reason for not pursuing new revenue streams, there are those who struggle to justify investment in digital, and issues relating to other aspects of museums, e.g. physical infrastructure (the proverbial “leaking roof”) are likely to be deemed “more urgent” than the development of a sensible and sustainable digital strategy.

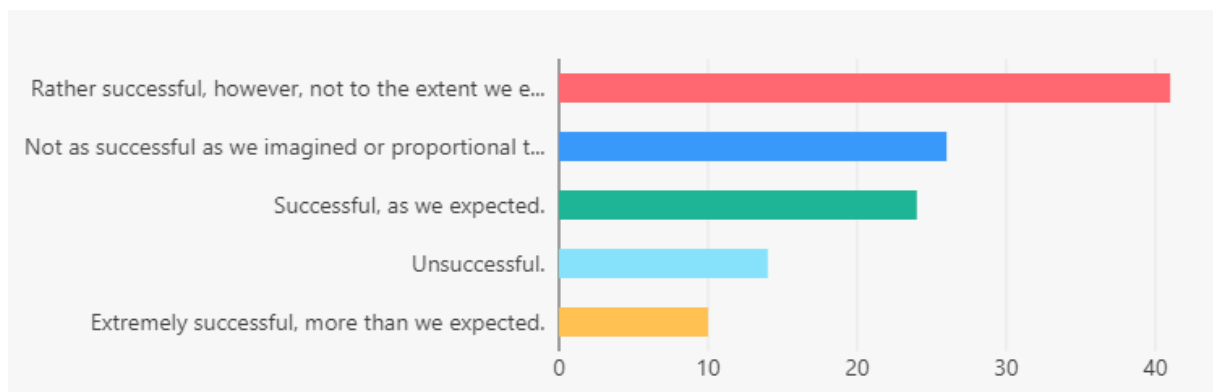


Figure 26: Museum responses on their personal evaluation, how successful they were in increasing digital revenue

Further, survey respondents in their own self-assessments evidently identified “Business Models” as the most underserved digital skill area (1=underserved, dramatically lacking or deficit; 2=basic; 3=advanced).

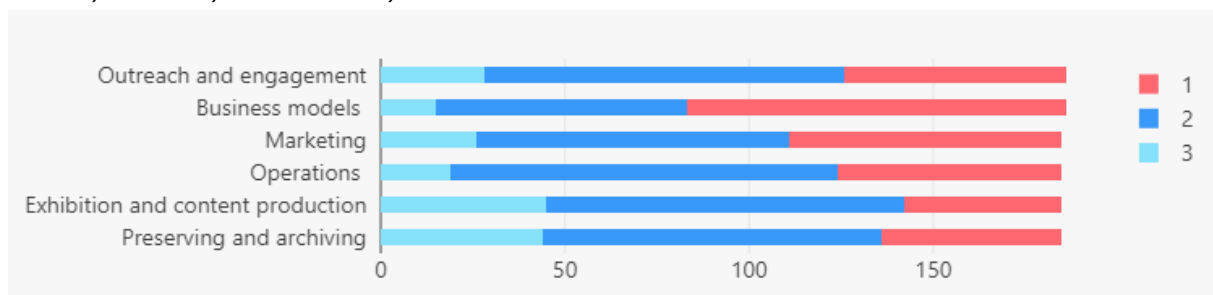


Figure 27: Museum responses on how advanced they assess their organisation's digital skill levels compared to peers



## ***The Digital Transformation Calls for Diversity, Inclusion and Equity***

As digital goes on to blur physical borders and globalisation changes the demographics of our societies – and, implicitly, those of the audiences of cultural institutions - the discussion about diversity, inclusion and equity in any institution that serves a public must be brought to the table.

We believe that matters of diversity and inclusion are not only an issue of moral and social justice, but also an issue that needs to be addressed in the context of globalisation if museums are to remain relevant institutions, representative of the social, cultural and political contexts in which they operate.

As Haitham Eid notes:

“The lack of diversity in museum audiences is not only unjustified and deeply problematic, it also can be seen as ethically and morally challenging. Although museums have tried to overcome this issue, the progress has been extremely slow. As a result, many museums, especially those that are not in tourist destinations, have probably suffered a degree of alienation, stagnation, and lack of relevance.”<sup>21</sup>

For decades, the private sector has responded to the extensive research in the field of human resources by taking an interest in the ‘business case’ for diversity, i.e. the economic potential of diverse teams.<sup>22</sup> Though the ‘business case’ may appear to be based solely on economic grounds, this is only the end result of having diverse and inclusive teams. Diversity and inclusion ultimately bring economic value by driving innovation and jolting “us into cognitive action in ways that homogeneity simply does not”<sup>23</sup> In this form, the value of diverse and inclusive teams for museums becomes undeniable. This is true, particularly nowadays, when demand for innovation and creativity in the museum sector is higher than ever, as a result of the competition with on-demand content, and increasingly diverse demographics to which museums must appeal. Inclusive and diverse teams thus, comes to mean inclusive and

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<sup>21</sup> Eid, H. (2018). *Connecting the dots: The impact of diversity in the museum workforce on innovation, relevance, and audience Engagement*. Museums and the Web 2018 (MW 2018), Vancouver. Available from: <https://mw18.mwconf.org/paper/connecting-the-dots-the-impact-of-diversity-in-the-museum-workforce-on-innovation-relevance-and-audience-engagement/>

<sup>22</sup> Sandell, R. (2000). The strategic significance of workforce diversity in museums. *International Journal of Heritage Studies*, 6(3), 213-230.

<sup>23</sup> Levine, S. R.; Thought Leaders (2020). Diversity Confirmed To Boost Innovation And Financial Results. *Forbes*. Published 15 January 2020. Available from: <https://www.forbes.com/sites/forbesinsights/2020/01/15/diversity-confirmed-to-boost-innovation-and-financial-results/?sh=762e2ddec4a6>

diverse programmes, that in turn appeal to increasingly diverse communities they aim to serve.

Efforts to diversify the workforce in the museum sector, such as affirmative (US)/positive (UK) action have been both celebrated and heavily criticised. Indeed, if these actions are to promote pluralism rather than assimilation<sup>24</sup>, then plans to diversify the workforce within cultural institutions, must be accompanied by inclusion efforts, "the process by which the employer makes its organizational culture, policies, and environment conducive to all employees to achieve their fullest potential."<sup>25</sup>

Though the European context has a different history of migration resulting in different demographics, the issues of inclusion of people from minority backgrounds is just as burning here, though perhaps much less discussed.

We believe, museums need to be at the forefront of change and demand inclusion, diversity and equity support programmes at a sector level if they are to stay relevant. Throughout our programme, we address these issues and encourage museums in the incubation programme to reflect on their practices when it comes to matters of diversity, equity and inclusion. We know that opening the conversation and drawing conclusions from this self-reflection is only the first step that eventually needs to translate into action.

<sup>24</sup> Sandell, 2000.

<sup>25</sup> Eid, 2018.

## 4. Conclusion

The report highlights the must-haves that precede any digital journey, as well as organisational and sector-level changes that can make this journey easier for museums. All the changes require a long-term commitment rather than a one-off effort. Just as well, because digital is here to stay, making the sustainability of any digital transformation a must. The more time invested in the initial set up for the new digital normal, the more likely organisations are to sustain these efforts. Afterall, “Strategy, not technology, drives digital transformation”<sup>26</sup>

Funding schemes dedicated to individual institutions can be useful in tackling issues and ease the implementation of specific projects. Indeed, 12 of the 40 museums that participated in the first stage of the incubation programme, a stage aimed at setting the scene and helping museums develop a first general understanding of the implications of digital endeavours, indicated that the programme could be improved by offering more individual support. This was understood either as a focus on the organisation and its challenges, a focus on their pilot project, or more feedback in one-to-one sessions with experts or digital solutions providers. These needs will be catered to in the second stage of the incubation programme with its dedicated focus on the implementation of the pilots.

We acknowledge that programmes geared toward individual digital projects are important to build confidence of practitioners in small and medium size museums and bridging the existing digital gap. As the Knights Foundation Digital Readiness and Innovation in Museums Report from October 2020 shows, the size of the institution is the driving factor when it comes to digital readiness<sup>27</sup>. Programs like DOORS provide funding not only directed towards the implementation of the projects, but also for their support in necessary training and upskilling activities. More than 71% of the respondent’s name infrastructural funding and 66% training as a helpful type of support for their development:

<sup>26</sup> Kane, G.C.; Palmer, D.; Nguyen Phillips, A.; Kiron, D.; Buckley, N. (2015). *Strategy, not Technology, Drives Digital Transformation. Becoming a Digitally Mature Enterprise*. MIT Sloan Management Review, Deloitte University Press. Available from: <https://sloanreview.mit.edu/projects/strategy-drives-digital-transformation/>

<sup>27</sup> Knight Foundation, 2020.

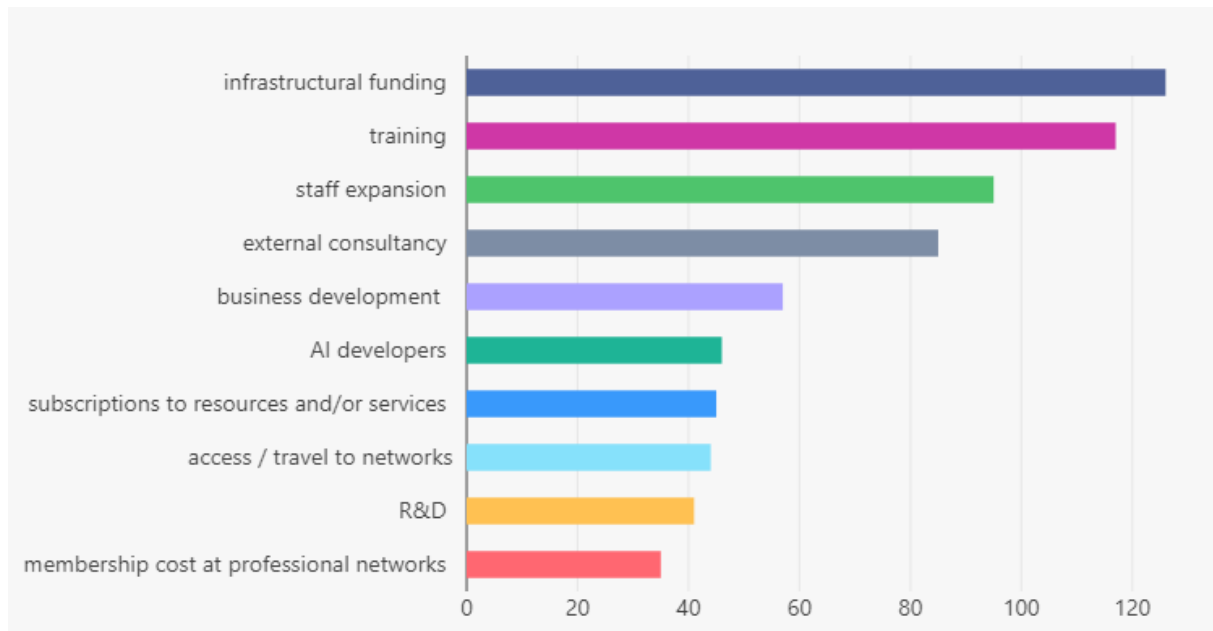


Figure 28: Museum responses on helpful types of funding

But for these funding schemes to be more effective and engender systemic change in the sector, they need to define ambitions beyond the support of individual projects in small and medium-sized institutions. For the existing digital gap to be overcome, partnerships and collaborations must be fostered, and a culture of collaboration that enables knowledge exchange and peer-to-peer learning must be embedded in the sector at large. Programmes that support and facilitate partnerships with the creative and tech sector must also be added to the agenda so we can start a long-awaited conversation.

While we believe that culture of collaboration is needed, we know that implementing it is not without its challenges. Programs like DOORS are time consuming and hard to manage in addition to the regular workload, in particular for small and medium sized museums who often lack dedicated teams and resources for digital projects. Further, nearly half of our survey responders (48,6%) stated that they do not participate in or contribute to networks and/or associations in matters of digital transformation and institutional innovation (e.g. to make oneself aware of trends, anticipate challenges better or get updates on technologies and tools):

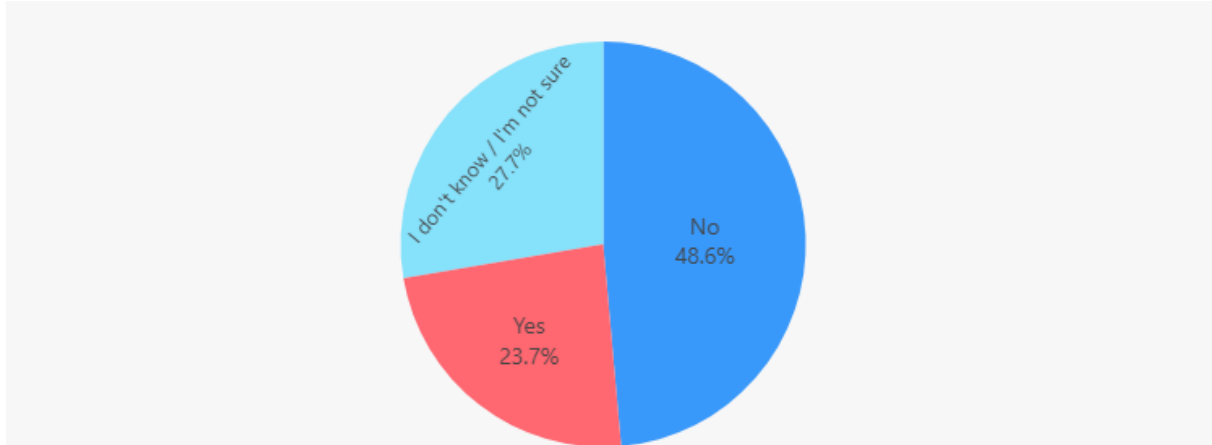


Figure 29: Museum responses on their participation in networks or associations

Yet many of them regard networking as the main benefit of programmes like ours (Figure 12).

We hope we have made the case for why strategies at an institutional level, must be complemented with strategies at a sector level. While changing leadership attitudes and building team confidence in the potential of digital and their ability to integrate it in their day-to-day are paramount, they both require sustained investment in capacity building programmes.

In addition to that, the rapid development of digital tools and the costs involved in integrating and maintaining them as part of the day-to-day activities of cultural institutions cannot be neglected. Now that museums have started doing the groundwork and are preparing for the digital transformation, it is time for policymakers and society at large to recognise the importance of keeping up the momentum and support the work done in the sector.

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