SPARKLE

report

D□□RS Digital Incubator for Museums

DOORS

Digital Incubator for Museums

DOORS is a two-stage incubation programme for small and medium-sized museums initiated by Ars Electronica, MUSEUM BOOSTER and Ecsite.

Under the umbrella of the European Commission's research program Horizon 2020, we seek to give small and medium-sized museums across Europe an opportunity to steer the direction of the sector's digital transformation.

The challenges of digitalisation are disproportionately found within small museums where the technologies and expertise to launch and sustain digital strategies are usually unattainable. We want to reduce the digitalisation gap by creating the space for small institutions to voice their needs and offering them access to knowledge, resources, expertise and an incubation programme.

We are also committed to finding meaningful ways to incorporate diversity, accessibility, and inclusion strategies both at an institutional, as well as a project level. DOORS also adheres to the greater sustainability goals of the EU Green Deal and will stress the importance of implementing green digital solutions.

ARS ELECTRONICA
Art, Technology & Society

MUSEUM BOOSTER

ecsite
EUROPEAN NETWORK
SCIENCE CENTRES & MUSEUMS

DOORS Digital Incubator for Museums

"The only constant is change".

In the anxious times of drastic and sometimes irreversible changes and events the world is living through these years, the words of Heróclito de Efeso become more relevant than ever.

Museums today need to be dynamic, adaptive, tolerant and active in the emerging social, political, natural and digital environments. The speed of change is only accelerating with the already dizzying speed of technological advancement. Digital technologies have shown their potential to bring previously inaccessible insights to museums: predict how many people will step through the doors of an institution, analyse how resources are allocated and where the potential for optimisation lies, approach visitor satisfaction, and enable new levels of accessibility and personalisation of offers. The available wealth of data helps re-approach institutional operation from the standpoint of efficiency and sustainability, respond to evolving needs, challenges and opportunities, be them on the visitor side, or at the internal operational level.

The opportunities and expectations for boosted capacities are mesmerising. But there is no "one size fits all" set of technologies. While digitalisation has indeed a lot to offer to the museum sector, it still remains undiscovered for some institutions and an unaffordable range of opportunities for many, perceived with controversy, as online cannibalising the onsite. It also brings ethical and legal framework questions, such as data governance models or GDPR compliant company processes. The support of the European Commission's Horizon 2020 programme, within which DOORS has been conceived and is funded, is an acknowledgement of the urgency and scope of the challenges museums are facing. So as we set out on this research journey, we ask ourselves, how can we support museums in creating transformative processes, people and technology, rather than remain mesmerised by the shiny things?

Why a report?

A report is a format to document our research, and a familiar one to both museum practitioners and stakeholders in the sector. With the Sparkles Report we aim to look into ingredients for healthier partnerships, the possibilities and challenges of collaborative processes, the prerequisites for the (re)development of business and revenue models through inspiring stories of institutional creativity, courage and vulnerability. In adopting this format, we decided to develop the report as a dynamic tool and a satellite to the DOORS Incubation Programme, rather than a static deliverable.

Working in a field where no two institutions are alike, we abolish the wording "best practise". Rather than looking for superlatives, we focus on cases that bring "sparkles" of inspiration and learning and maybe even trigger a bit of discomfort as they go too far off the business-as-usual track. Sparkles – the cases we highlight - bring examples of how to understand digital as an enabler, rather than the driver of institutional innovation, thus avoiding technology-only reforms. Learnings are derived both from what may be deemed as success stories and "wrong-turns" taken, as well as experimental and iterative projects yet in-the-making.

We focus on two domains in the Sparkles report: Innovating audience analysis and engagement and New content distribution and revenue models.

When we talk about museums specifically, innovation doesn't necessarily mean new. It's easy to forget that innovation, transformation and change feels very uncomfortable for a lot of people. When you're navigating uncharted waters, and there's no map to follow, no received wisdom, the ability to recover from mistakes and resilience are crucial to ultimately building a viable project or initiative. In order to experiment one definitely needs courage. The broad spectrum of learnings from the Sparkles - the good, the bad and the ugly from their practice and individual journeys - reminds us that everything's impossible until somebody

does it. And when trying something out, it is also OK to make mistakes and learn from them. The importance of having a growth mindset versus a fixed mindset cannot be overestimated.

We follow the principle we recommend ourselves. We took an agile approach to the development of the DOORS Incubation Programme, iterating and adapting as we deliver it. Incubation is the shared risk-taking endeavour and we equally learn with and from museums. As our research journey begins with looking into cases, talking to international colleagues, practitioners and researchers, we allow form to follow content. This enables us to be responsive to the needs and progress of museums and allows us to incorporate opportunities as they arise. We consider this approach to be appropriate and empowering for our core aim – to produce a more enduring impact of the Incubation programme.

Underpinning much of the discussions, reports and successful examples of transformation is collaboration - seen as a key enabler of qualitative change. As a sector we need to acknowledge that we are struggling to take collective advantage of digital. As Seb Chan has beautifully put it, "'digital transformation' is not a state change from caterpillar to butterfly, but a continual organisational change process. In the cultural sector, this change will only flourish as a collective, pan-institutional action. Singular institutional actions have their limits – especially as so much of digital opportunity requires a different way of thinking at scale, as well as different approaches to 'infrastructure.'" [1]

Addressing challenges with peers allows us to better identify where the most pressing needs are, to develop more and better opportunities to learn from each other, to develop and adopt shared standards and approach resources and infrastructure in a more transparent, shared and sustainable way. With Sparkles we aim to illustrate how digitalisation can be organically in-built in the general developmental strategy of institutions, instead of being consigned to isolated endeavours and investments. As Oonagh Murphy has rightfully pointed out, it takes a confident institution to recognise that whilst digital technologies are quickly becoming imperative to contemporary museum management and practice, these technologies must advance a museum's strategic and business plans if they are to truly add value to the work of museums. [2]

We believe in people-centred museology, recognising that communities and individuals critically shape how we create, collect, conserve and share collections. Bringing in cases and highlighting practitioners across geographies and fields of expertise, we hope to help museum professionals find more like-minded peers. We look towards those who work at the intersection of culture, design, and tech, and who not only care about qualitative change within the museum sector, but also walk the talk. Within the structure of the report, we will not only feature institutional cases - Sparkles, but also invite practitioners and researchers to contribute with personal statements and findings. You will find these under the title "Highlighted by".

This initial edition of the Sparkle report is only a start and is rather an invitation to join the conversation. As the DOORS Incubation Programme will be getting inhabited with pilots in both of its phases, contributions by the invited experts and mentors, inspiration sessions as well as the dialogues between museums and digital solutions providers, more Sparkles will appear. The full Sparkle case-card deck will be published after the wrap up of the Incubation Programme in 2023.

We invite you to come for inspiration, join the discussion and leave with the insights.

So stay tuned!

1.   https://www.artshub.com.au/news/career-advice/stop-being-reactive-digital-mentorship-is-about-strategic-investment-2488493/
2.   Oonagh Murphy (2018) Coworking Spaces, Accelerators and Incubators: Emerging Forms of Museum Practice in an Increasingly Digital World, Museum International,70(1-2), pp. 62-75.

Approaching and Engaging Audiences

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Approaching content distribution and revenue models

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Approaching and Engaging Audiences

Cultural institutions are all fighting for relevance in an often indifferent world. Following Nina Simon, a substantial question to ask ourselves is how can we matter more to more people? No doubt, the audience-centered paradigm is here to stay. It requires museum staff to honour multiple voices and multiple sources of knowledge, to meet the variety of needs that come with a more diverse public and design new "entry points". This indeed implies to move beyond mere subject expertise: from offering clear and interesting labels tailored to audience interests, to different levels of access and flexible pricing. Smartification of audience experience is a hot topic and technology has a lot to offer. Sometimes even overwhelmingly a lot, given design and implementation approaches in the creative industry around co-designing and implementing consumer data and AI-enhanced experiences. Every interaction can now become a data point and the volume of user data within the field is growing exponentially. However the resources and capacities of institutions - are not.

De-siloing institutional intelligence in terms of data, comprehension of audiences and their behaviour as well as institutional performance is essential. Eventually, designing a good experience serves not only the visitors, but also helps museums in achieving their goals, including business ones (e.g. raising a membership, sponsorship or donation bar). We need to understand when and where in the visitor journey, we should be presenting different calls to action: When best to collect visitor data? What offers to launch and how to place them? When to encourage visitors to become members?
A major question is how to allow a broad scope of visitors to connect on their own terms and ensure the museum's sensitivity to audience needs? How do we move from a once in a lifetime wow effect to more committed and sustainable relationships with our audiences?

D D R S

Innovating Audience Analysis and Engagement

Whilst 'audience development' is commonly invoked as an important part of any cultural organisation's strategy and is also frequently now required in many fundraising applications, its meaning is still wide-ranging and therefore frequently mis-understood. It has also suffered in recent years from a focus on initiatives or projects that are short term in focus and impact.

What is clear though, is that a successful arts, cultural or heritage organisation, requires a holistic, long-term strategy for the involvement of the public – visitors, audiences, participants, users – whichever term we want to use – as a fundamental element, indeed one could say it should be part of a vision, mission and purpose, not an added extra. If it had not been clear before, the Covid-19 pandemic brought this into focus, with the realisation that cultural organisations, including museums of course, do not exist without a public. It is not a question of 'lowest common denominator', 'dumbing down' or other accusations thrown at audience development, but of understanding that audiences are inextricably part of what we are trying to do. For this reason, The Audience Agency often refers to the idea of audience development helping to deliver the triple bottom line of artistic, social and business objectives for cultural organisations.

Audience Analysis

This need therefore presupposes other considerations. One of the most important is to understand the level and nature of public engagement. Without this, we are only in the business of guesswork and assumptions which in turn could be based on prejudices and biases. Understanding can come from a wide range of sources and methodologies; it doesn't have to be about 'doing a survey'.
At the macro level there are many programmes and studies which provide excellent starting points for knowledge, what for cultural organisations we might call 'secondary data' - not having to be produced by the organisation itself. The quantity and quality of this data can vary enormously, but there are mega studies like the European Union's own assessment of cultural participation, which might be a bit blunt but has several standard measures that are measured year on year.

It could be debated just how far this map (below) is describing what it purports to measure, but even if it only reveals that participation might mean different things in different countries, by being consistent in its approach to questioning it makes benchmarking possible. Such studies also have great value when wanting to look at difficult concepts such as what 'feeling European' might involve. This was useful for example, for The Audience Agency's evaluation of Galway 2020 European Capital of Culture in assessing its impact on 'Europeanness' – see for an overview of some of these factors here.

Cultural participation during the previous 12 months, 2015
(%, share of population aged ≥16 years)
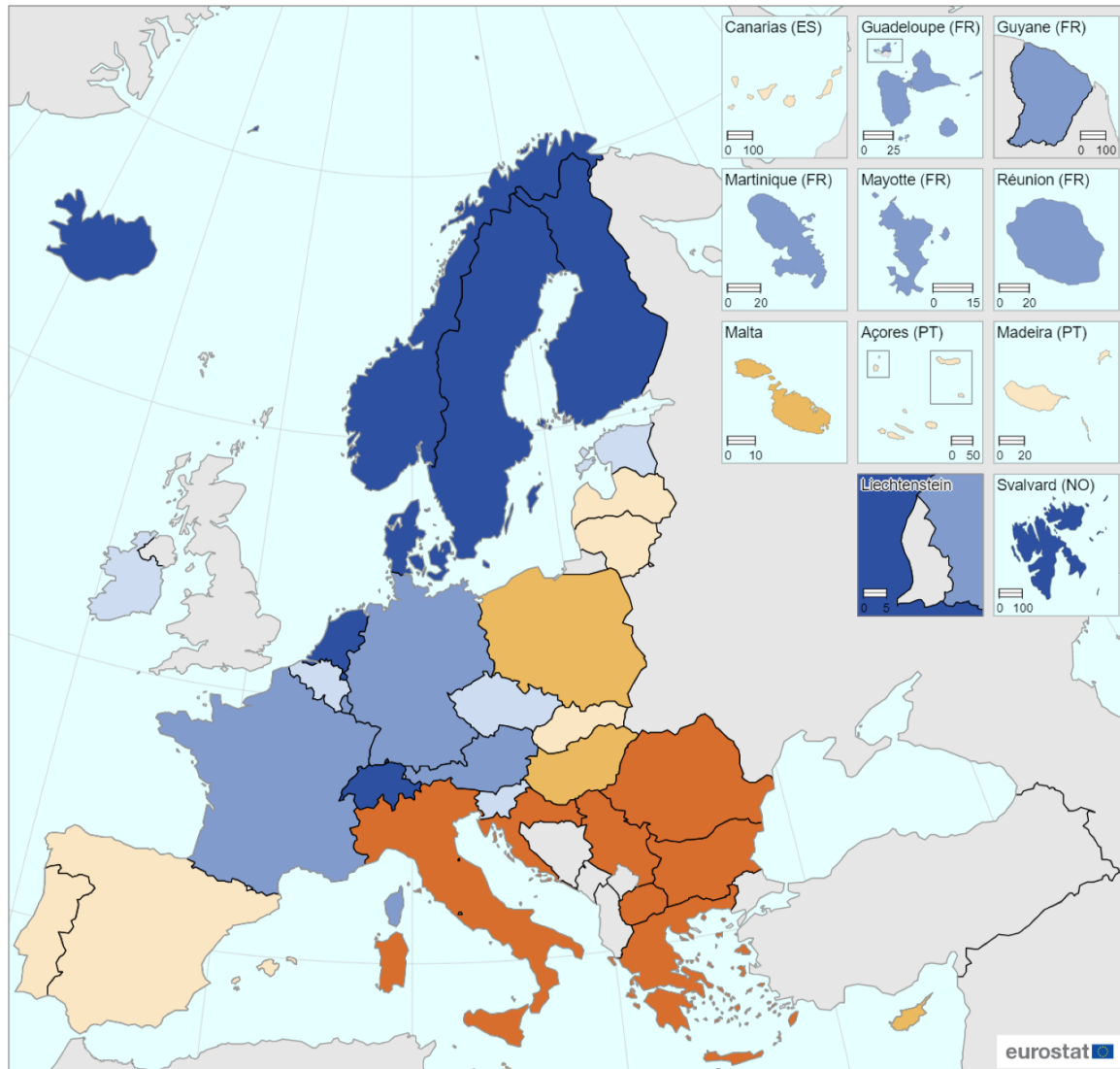
(%, share of population aged ≥16 years)

Administrative boundaries: © EuroGeographics © UN–FAO © Turkstat
Cartography: Eurostat – IMAGE, 03/2021

EU = 63

- < 48
- 48 - < 56
- 56 - < 64
- 64 - < 72
- 72 - < 80
- ≥ 80
- Data not available

Note: EU: estimate. Ireland and Poland: low reliability
Source: Eurostat (online data code: ilc_scp03)

In some countries, there is also useful research conducted at a national level. In the UK the Taking Part and Active Lives surveys have tracked the level and nature of engagement in a wide range of areas (including leisure, sport and entertainment). As well as being useful in its own right, it also informs The Audience Agency's national profiling system which uses this, as well as national household data and its own research through Audience Finder, to produce 'Audience Spectrum'.

Profiling and Segmentation

[Audience Spectrum](#) is a segmentation system based on several factors. Especially important is the frequency and likelihood to engage as well as the sort of cultural experience people would like. There are ten segments and whilst demographics are parts of these profiles, they are not the primary ways of grouping the population. This is important, because it takes us away from considering our visitors only in terms of 'blunt' demographics such as age.

Occasionally, The Audience Agency conducts its own large scale research, as in the case of the Covid-19 Cultural Participation Monitor. This was undertaken in collaboration with the Centre for Cultural Value at Leeds University and was a national population survey of the UK, commissioned to understand the effect of Covid-19 on attitudes to attending culture and many associated factors. Carried out over the course of two years it provided insight of how opinions and attitudes were changing, as well as providing further knowledge about views more generally. It also produced some interesting 'myth-busting' results such as about digital and online engagement and pointed to some alarming findings such as the increase in inequality of cultural engagement during the pandemic – with the differences between high and low engagers being further exaggerated. The study is outlined [here](#) with full downloadable reports available.

From Secondary to Primary Research

How far it is possible use this sort of data and analysis varies between region and country but secondary data can be used to inform work, research or to provide benchmarks before diving into our own primary research.

It's important to avoid being overawed by the idea of visitor research. Rigour and robustness are important, but there are also small scale, often qualitative methods that can be used (as described in the ACED process below). At heart is the obvious though easily overlooked point, that research should be informed by what we want to know and can usefully use once we have the knowledge.

Over the last three years, The Audience Agency has led the evaluation of Galway 2020 European Capital of Culture available here: It is a long and detailed report but certain principles should be evident.

1. The outlining of the original and adapted (due to Covid) outcomes of the initiative and the way that evaluation is linked to this
2. A variety of methodologies employed to gain a rounded view
3. Respect for those involved, using anonymity and privacy as a core principle, and representing the view of people accurately and with integrity.
4. Using the results to inform conclusion and recommendations.

On this subject, the Centre for Cultural Value, in conjunction with leading evaluators, has produced a set of 'Evaluation Principles' outlined here. It demonstrates that evaluation should be

- Beneficial: committed to learning and/or change, ethical and applicable.
- Robust: rigorous, open-minded, proportionate.
- People-centred: empathetic, many voiced, socially engaged.
- Connected: transparent, aware, shared.

Recently, The Audience Agency has found it useful to explore different ways of understanding audiences, linking it to testing and trialling particular ideas. Through action research and more specifically, using user-centred design thinking as a basis for looking at audience development, it is possible to develop a dynamic approach to both analysis and engagement, as explored in more detail below.

Audience Engagement

As noted at the beginning of this text, one of the important issues we need to confront is to move beyond short term initiatives to develop a more holistic, long term perspective. In two European projects, Connecting Audiences and Adeste+ a consortium of organisations from around Europe explored new ways of encouraging audience engagement, looking particularly at those parts of the audience that are usually less engaged.

The Connecting Audiences Erasmus+ led by Deusto University in Bilbao matched higher education institutions with knowledge/research partners such as The Audience Agency. As well as bringing students and practitioners together in innovative internship based education modules, it used action research as a basis for investigating and improving practice. These were usually smaller 'prototypes' which could be tested in a lower risk way, which could then be either altered, scaled up or discarded. At its essence is the idea of 'learning by doing' but requires feedback and reflection to be built into its heart. An important further output of the project were a number of recommendations for university programmes based on cultural management.

Adeste+, which involved many of the same core partners and also brought in 'artistic' partners (alongside research/knowledge and policy organisations) took these ideas on a stage. Following on from earlier and other initiatives such as the original Adeste initiative (2013-2016) and BeSpectactive which explored the relationship between audience and participant, the partnership believed it was vital to look at connected aspects of audience development which were often ignored, for example leadership, organisational change and taking a wider institutional approach to the public. Given that it also took place during the Covid-19 pandemic, it was also influenced by the need to consider more fundamental factors linked to participation and the place of culture in society more generally.

At the heart of Adeste+ was the development of a process called 'Audience Centred Experience Design'. This is based on models such as 'Design Thinking', organisational change theories and influenced by modern approaches such as Agile Management.

Audience Centred Experience Design aims to elicit long term change by:

- Considering the complete experience of audiences
- Focusing on the change that cultural organisations need to make
- Orientating the whole organisation around the audience experience
- Working in cross-disciplinary teams using a range of skills and competencies
- Encouraging 'non-linear' thinking and ideation
- Testing, experimenting and evaluating before scaling up
- Creating a way of working which embeds this approach on an ongoing basis

It leads an organisation through three overall phases – Get Ready, Experiment and Keep Going – which include eight stages within:

- Prepare
- Unfreeze
- Empathise
- Define
- Ideate
- Prototype
- Commit
- Embed

One of its crucial elements is a focus on understanding with much more depth, as part of the empathise stage, different groups. This goes beyond looking at the potential relationship with the organisation (though that is part of it) and descriptive research of the audience to consider the real whole lives of those people. Using exercises such as persona building, user journey mapping and 'how might we?' ideating, it is then possible to develop a prototype that can be tested, evaluated and eventually implemented and embedded in an organisation's ongoing work.

There is a special website that has been created as part of Adeste+ that provides a guide to the way in which this process can be undertaken. It is in continual development and is being modified according to feedback and ongoing experimentation. This can be found here.

The Audience Agency
The UK national charity for public engagement with arts, museums and heritage, increasing the reach, relevance and resilience of the sector.

the audience agency

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Who | Institutional Profile

Institution	Museum of New Zealand Te Papa Tongarewa
Location	Wellington, New Zealand
Short Description	Te Papa is New Zealand's national museum, entrusted with the acquisition, care and management of collections across art, history, culture and the natural environment.
Ownership	State (Autonomous Crown Entity)
Size	350 - 400 FTEs 2019/2020 Financial Year 1,1 million visits to Museum

Approach to Digital	Adrian Kingston, Head of Digital Channels *"Te Papa sees digital channels as a core component of a holistic multi-channel programme serving our audiences, wherever they are. Following <u>the mana tāonga principle</u>, we strive to make our collections and research as accessible as possible, within appropriate cultural practice, because the collections are tied to the people and communities they come from. We are currently investing more in learning about our digital audiences across New Zealand and the Pacific, and their barriers, preferences and needs. We're focusing on reaching people and communities "beyond the walls", but in a way that is integrated with the rest of our audience-facing programme. We are starting to ask "what channels would work best for our audiences for this subject?", rather than just thinking exhibition-first. A strong focus for digital and non-digital programming is to provide platforms for communities to have their own <u>voice</u>, and tell their own <u>stories</u>."*

What | Case

Project Title	Audience Impact Model (<u>AIM</u>)
Timeframe	Developed in 2018

Concept & Approach	**Concept & Approach** While collecting and developing a toolset to help the team ensure Te Papa was making the right experiences, for the right audience, with the correct amount of resources, it was noted there was a significant gap in the tools related to measuring success. The team was looking for a better measure of success than page views, impressions, sessions (well-known as "vanity metrics", or as <u>Adam Moriarty</u> of Auckland War Memorial Museum calls them, "<u>big dumb numbers</u>"). According to the team, by itself, even revenue can not be considered a meaningful measure of success for a cultural organisation. It was discovered that while there were measures for businesses and start-ups in other industries, there didn't appear to be

anything that could be consistently applied to museum digital experiences that genuinely put the audience first.

Looking at the models from other sectors, Te Papa´s team noted a common pattern of a spectrum that started with initial light, immediate, attraction moving to something deeper over time, from shallow to deep engagement, from a value exchange of minimal effort through to maximum impact. Based on this, the team developed a similar spectrum of initial engagement, reaction, personal connection, learning, empathy through to actual, tangible, impactful change. Of course, being a spectrum model, the team does not expect to be able to get all the visitors who engage (Level 1), through the rest of the levels. For many reasons - museum fatigue, visiting with family groups, limited time, lack of interest in the subject and so on -, the number of impacted users will drop off. Te Papa´s team notes that this is a normal factor of visitor engagement. However, understanding what type of audiences expected to reach each step (and realistically, how many visitors will reach each step), can help better design for the desired impact.

Involved parties
AIM is now used across many parts of Te Papa´s audience programme, exhibitions, online, public programmes. It is used throughout programme development. Subject experts (curators, public programmes specialists, concept developers, digital producers) work with the Audience Insights team to draft the initial AIM targets. This is used as part of an early proposal that goes to a programme governance group. It is then used throughout experience design,testing, and development. Evaluation data gathering is undertaken by a number of parties, depending on the type of information available. For example, museum hosts pass on observational information, Public Programmes Specialists gather survey data at the event, Research Assistants gather data through surveys and interviews with visitors, Digital Channels teams gather online analytics and survey data, and various people reach out to their relevant networks for follow up surveys and feedback. The Audience Insights team collects, analyses and synthesises all the data. By spreading the data collection out to a number of people who are in the right place at the right time, Te Papa is able to gather more real life stories. According to Te Papa´s team, using a tool like AIM is an organisational investment, and requires effort, but by being creative and efficient in managing the full process, the organisation can better understand current performance and audience expectations, and inform future experiences and programmes.

Benefits & Impact	Adrian Kingston, Head of Digital Channels

Adrian Kingston, Head of Digital Channels

"While AIM was originally developed for digital experiences, we quickly discovered that due to it's simplicity, flexibility and audience focus, it could work for setting targets for and evaluating all kinds of audience-facing products, or even digitisation and research projects. It's a tool that sets a shared understanding of desired audience goals, and the required measurement methodologies, very early on. It is also a useful tool for checking the experience design throughout various stages of the development process, asking "do we have something in here that is likely to achieve that goal for our audience?". Conducting user testing (with real people) against these goals throughout the design process would be beneficial. And finally it is used for post-launch, and ongoing evaluations; "Did we actually meet the goals we set at the start of the development process? What are our audiences saying, doing?"

Beyond being useful for individual experiences, AIM also allows for making prioritisation decisions across the programme. For example, every audience facing experience proposed for the programme at Te Papa must have a high level AIM template completed before it can be approved. After approval, as part of the early development process, a more detailed AIM must be completed.

By applying the same goal setting and evaluation tool across all audience facing experiences, it allows us to evaluate your overall programme success, across all your audience facing channels; online, exhibitions, public programmes, education programmes, publishing, and so on. It also allows you to programme a range of experiences that have different impact goals. Some experiences can be quick, easy, engaging and fun, and don't have to have extensive learning or ongoing impact. Others will be designed to have a much greater impact for more people. Some will be comparatively low in terms of people engaging, but very high in reaching high levels of impact for that group. A successful, varied programme can be visualised using AIM.

	An additional benefit of AIM is it allows you to set goals for different types of groups. As we move even further into co-created, or community led experiences, we can set goals for "general" audiences, audiences from specific communities, and the community members you are actually working with. The process of creating an experience can be as impactful, or even more so, than attending one. *AIM allows you to combine the simpler qualitative measures, with actual human focussed stories of impact. By moving away from just analytics, or even simple satisfaction measures (though these are of course still important), to gathering real stories of connection, insight and impact, not only do you have a better understanding of success, that can also feed into the development of future experiences, you also have much richer human based story-telling opportunities for your governance groups, funders and communities."*
Limits & Drawbacks	Adrian Kingston, Head of Digital Channels *"AIM provides transparency regarding the audience impact goals you are designing for in an experience, i.e. it puts the audience first. This can be challenging for some within the sector who are less audience focused and rather more technology-first, subject-matter or personal expertise driven. For some it can be a challenge to break out of their own passions to focus on organisational and audience goals. Others can sometimes set unrealistic goals because they want to reach the highest limits available in the tool, "Oh of course my exhibition is going to have national impact!". However, AIM targets are designed to be developed collaboratively by those in the experience team, and has prompts within the structure that forces the team to consider, "what would that impact actually look like, what would an impacted visitor say? How will you know that, how will you measure it?" Those prompts generally allow museum staff to be aspirational, but ultimately, realistic. We have discovered however, it does take a few attempts of real life runs through an experience lifecycle, all the way through to final evaluation, for an organisation and it's staff to get a good understanding of how to use AIM.* *A big change for organisations moving into using a tool like AIM, is being comfortable that not every level in the model is completely, empirically measurable. It is unlikely to be auditable that exactly 1% of total visitors to an exhibition later changed their behaviour as intended. We do need to have enough evidence to indicate there is a strong indication the organisation was successful in encouraging the desired impact, but it must be understood that after Level 4 (Simple Learning), it gets progressively harder to prove exact numbers. However, this is tempered by the fact that over the last decade or so, many private, charitable, local, state, and national funders are expecting understanding of the impact of their funding, more than just pure numbers. For example, New Zealand's Treasury Department has moved away from bottom line targets, to instead considering the impact of government spending on living standards and wellbeing of New Zealanders, focussing on four "capitals": Natural, Social, Human, and eventually, Financial and Physical capital."*
Future Prospects	Te Papa is constantly learning and trying new ways of reaching out to its audiences to hear stories of applied insight and impact. According to the team, measuring impact at the various stages of the spectrum is likely to take a few different ways of gathering evaluative data. Evaluating post-visit impact, when you have lost direct contact with the individual or group, is the most difficult. However, this is when the higher impact, further down the AIM spectrum, is more likely to happen. One main way Te Papa is experimenting is more proactively using its established networks. Often, although the museum may have lost direct contact with the audience after an experience, there are known networks it can reach out to where those people are. Schools, community groups, subject interest groups and clubs. The team brings an example of reaching out to the local tattooing practitioners to see what they'd heard from their clients about a recent Sāmoan tattooing exhibition and if it had any impact on them, and their tattoo decision making. As the institution highlights, it can no longer assume asking its visitors as they leave what the impact was, it needs to go where they end up to actually start their impact journeys.
Key Take-Aways	Samuele de Stefani, Head of Audience Insights, Te Papa *"I have been using AIM for more than two years now, and sometimes I still feel that I am quite far from grasping its full potential.* *The Audience Impact Model is a brilliant and very useful tool that helps our organisation to critically reflect on its own ambitions and practices. It places impact at the centre of the*

narrative, it encourages us to adopt an audience perspective, and it also pushes our knowledge forward by measuring visitors' response within and beyond our physical walls. By raising the voice of our visitors, it constantly reminds us that we are creating experiences for people.

As a user, I particularly appreciate the simplicity and the flexibility of the model. On the one hand, AIM can be applied strategically to outline the immediate and overarching goals of a project, as well as to identify specific measures of success. On the other hand, it makes us accountable of our work, as it is designed to be employed as an evaluation tool.

I usually like to describe AIM as a language, something that needs to be constantly practised and shared in order to be absorbed and employed with confident fluidity. Also, as a language, it transfers culture, values, and identity. For us at Te Papa, AIM is a way to get closer to our audiences, understand our visitors, and ultimately achieve our mission of 'changing hearts, minds, and lives'."

Attention	Reaction	Connection	Insight			Action		
Attention caught	Immediate response	Personal connection	Simple learning	Applied personal learning	Applied empathic learning	Personal action	Group/ community impact	National impact
1	2	3	4	5	6	7	8	9
How many people are going to walk in, see the experience, click something, attend an expert panel, buy a book? *(visitor entrances, clicks, page views, sessions)*	*How many people (% of level one) are going to have an immediate response, joy, fear, awe*	*How many people are going to have a personal connection to the experience?* *What kinds of things might they say?*	*How many people might learn something simple from the experience?* *What kinds of things might they say?*	*How many people might be able to apply that new learning to their lives in a small way?* *What kinds of things? What might the say?*	*How many people might learn something new that they can apply when thinking about, or dealing with others?* *What might the say?*	*How many people will do something new, a significant change in their life, new creativity, research, as a result of the experience?* *What kinds of things?*	*How many people will do something as a result of the experience that will impact of a community or a group/* *What kinds of things?*	*What national impact might this experience have, e.g. policy change, economic return* *What might that be?*

Fig.1. Hight level explanation of AIM. [Full AIM template and instructions](#).

Fig 2. Hypothetical example of different experiences with different impact spectrum goals across a programme.

Mediation

They always say time changes things, but you actually have to change them yourself.
Andy Warhol

With today's museum practice in full transformation, the need for reconceptualising institutional identities and configurations is pressing, taking into account the plurality of visions, responsibilities, expectations, and, not to the least extent, of opportunities. Our expectations of museums and the role they assume within society have become substantially different from what they were even in the recent past. Museums increasingly take manifold roles, stretching into areas of wellbeing, education, urban development, to name just a few. Pilot practices on the boundaries of museums as repositories of objects and as interfaces for meaningful social experiences (beyond didactics or a glossy touristic add-on) are emerging. They open up a multitude of inquiries and formats to be experimented with and elaborated on. As learning is not a one-way street leading from those teaching to those learning, these are oftentimes fragile explorations of dialogue and co-creation. It is a relationship full of mutual exploration, findings and learning effects.

In order to continue catalysing powerful moments of empathy, curiosity and connection, museums must find ways to incorporate comprehensive diversity, equity, accessibility, and inclusion into who, how, when, where, and why they tell stories. Technology allows to amplify the message and widen the outreach, becoming more adaptive to the individual and more interactive, diversifying languages, formats and topics. It is also instrumental in strategic terms to optimise costs. But technology is not a magic wand in itself. What should not be overlooked is that sustainable shifts in approaching audiences organically lead to structural shifts in the museum itself, such as new museum roles and forms of staff collaboration.

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Who | Institutional Profile

Institution	Ars Electronica
Location	Linz, Austria
Short Description	Ars Electronica was founded in 1979 to explore the intersection of technology and society through the lense of art. While the portfolio of projects, initiatives and programs has evolved throughout the years, Ars Electronica's philosophy has remained. Its activities are always guided by the question of what new technologies mean for our lives. Together with artists, scientists, developers, designers, entrepreneurs and activists, Ars Electronica sheds light on current developments in our digital society and speculate about their manifestations in the future. Key here is the focus of humans in the center of technological development. Thus, Ars Electronica never asks what technology can or will be able to do, but always what it should do for us.
Ownership	Ars Electronica Linz GmbH & Co KG is a company of the City of Linz and consists of the operational divisions Ars Electronica Festival-Prix-Exhibitions, Ars Electronica Center, Ars Electronica Futurelab, AE Solutions and Corporate Services.
Size	Ars Electronica employs more than 200 people from all over the world who contribute their know-how and commitment to the further development of Ars Electronica's vision on a daily basis.

Approach to Digital	Karin Gabriel, Lead of Future Thinking School & Festival University: *"Ars Electronica's activities revolve around the 3 pillars of art, technology and society. Thus, digitalisation is almost second nature.* *Due to the closing of museums caused by the Covid-19 pandemic, we explored various opportunities to bring the experience of Ars Electronica to our audiences in a digital way. After figuring out the required technical setups, channels as well as skillsets, we then placed our emphasis on adapting the content delivery – this related both to the educational workshops delivered by the Future Thinking School and by the program offered by Home Delivery.* *Through trial and error, we explored various options of how to best take a guided tour through the Ars Electronica Centre virtually and still provide the viewers a unique experience. We also learnt how to prepare the content of an interactive online workshop with participants joining from various locations."*

What | Case

Project Title	[Future Thinking School](#) and [Home Delievery](#)
Timeframe	Since 2020

Concept & Approach	Ars Electronica's Future Thinking School designs and delivers innovative and interactive educational programs for professionals from private and public sector organisations as well as academia. Its programmes bring together artists, developers, technologists, and scientists to explore topics related to technological developments such as artificial intelligence, interactive technologies, sustainability, and more from a unique viewpoint – that at the intersection of science, technology and the arts. The School offers standardised as well as fully-customised, in-person and online programs. Karin Gabriel, Lead of Future Thinking School & Festival University: *"The digital revolution leaves no stone unturned. It brings forth new technologies and business models; it changes the way we live. To actively shape this revolution, we need people who understand change and can analyse complex concepts, develop new strategies, and define the future roadmap for their organisation. And this is where the Future Thinking School comes in."* Future Thinking School focuses on three primary target audiences: corporations, public sector organisations, and academia. The format dives into Ars Electronica's world of art, technology, and society through (both online and in-person) workshops that take a close look at topics like innovation and emerging technologies. The content of the workshops leans on what is showcased in the Ars Electronica Center. Topics like sustainability and digitalisation remain a common denominator for all the programmes. The goal of the project is to enhance the tech-confidence of people who are not necessarily familiar with the topics of innovation and technology. For example, Ars Electronica is currently working with Public Employment Centre (AMS) in Austria, to help women rejoin the workforce or join new professional fields. During the two-day workshops as part of the Future Thinking School, the participants explored the topic of AI (as well as other topics connected to digitalisation and new technologies) and, gain a fundamental understanding of this field, thus, building up the confidence to further explore opportunities within the field. What makes the programs of Future Thinking School unique is the access to interactive installations in the Ars Electronica Center or during the Ars Electronica Festival. These allow participants to experience and explore emerging technologies hands-on. **Business model** Future Thinking School workshops are a paid offer with a fee set based on the current market price. Fees vary depending on the type of customer, duration, degree of personalisation of the program, etc. **Project's objectives** Ars Electronica Center provides its visitors with a wide range of interactive exhibits and engaging experiences. The growing demand from primarily SMEs, public sector organisations and academia to provide more in-depth insights into specific topics exhibited has determined the Ars Electronica Center to set up the Future Thinking School. **Benchmarking** Future Thinking School's outreach stretches to universities, public sector organisations, and corporations. Interestingly, these target audiences inform and shape the program in diverse ways and sometimes provide unexpected insights. For example, at the end of 2020, the Future Thinking School's team saw increased requests for online workshops as part of the corporate Christmas celebrations and team-building events. This showed that the program was considered more as an edutainment program than a standard educational workshop; fun and entertaining alongside having educational value.

Furthermore, the engaging and insightful online programs have made the online workshops of the Future Thinking Schools appealing to clients from Austria as well as abroad. In the fall of 2021, the team hosted a seminar at the local Johannes Kepler University for law students. Thanks to its success, "Beyond Coding: New Technologies in Context" has now become part of the official curriculum as an elective for law students.

The seminar explores technological developments theoretically and practically. It covers the basics of Artificial Intelligence (AI), and topics like Autonomous Driving, AI and Creativity, Creative Robotics, Drones and Artificial Swarms, etc. Through this seminar, law students are able to develop an understanding of the potential impacts of emerging technologies on society, the economy, and related legal implications. One of the main goals was to raise awareness among students that there is not yet a valid legal framework for many transformative technological developments.

Methodology
Since every organisation has specific requirements, Future Thinking School works hand-in-hand with participants to create individual offers.
The preparation of the programme includes:
- joint coordination meeting (aimed at clarifying requirements and expectations of the participating organisation);
- programme development;
- joined detailed discussion (aimed at discussing the main topics and teaching methodologies with the participating organisation);
- involvement of participants (with the help of an online platform, the team assesses their current level of knowledge and gathers their expectations);
- final adjustments;
- program delivery (the program is conducted either online or in-person at the Future Thinking School; after the program, participants receive a summary of the key points discussed, which can be used for further internal initiatives).

Experts & Ecosystem
The Future Thinking School training programs draw on Ars Electronica's unique network of experts both external (institution's partners and contributors) and within the institution.

Ranging from artists to tech experts, the external partners contribute to the content development of the program and at times the delivery of the workshops.

[Home Delievery](#)
Ars Electronica's Home Delivery program was launched in 2020, during the pandemic as a way to bring Ars Electronica's experiences beyond the institution's walls and into visitors' homes. In its design, it translated the onsite encounters into meaningful and impactful online educational experiences.

Home Delivery comprises a wide range of online experiences, guided tours of exhibitions, excursions to Ars Electronica Labs, visits to the Machine Learning Studio, concerts with real-time visualisations, lectures, and presentations in Deep Space 8K, workshops with engineers, and talks with artists and scientists. These offers are targeted at diverse audiences, such as schools, universities and companies, as well as the general public. The Home Delivery offers can be accessed from anywhere and by anyone.

Among the challenges encountered during the program's launch was the lack of in-house expertise in live streaming and creating TV-show-like content. However, the program drew on the unique network of experts who were also engaged as speakers. Among them, Ars Electronica Center´s guides, management team members, technical teams and colleagues from various departments. Since the start of the program, as the team highlights, there has been an evolution in confidence with delivering digital content. Instead of hiring external experts, the organisation made a conscious choice to build up the skills internally. This also led to preserving the authenticity of the offer and thus, shortening the distance between the center and its visitors.

The Future Thinking School and Home Delivery informed one another and became mutually beneficial initiatives that built on the experience of launching a newly developed format online. At the same time, the Home Delivery is a one-way communication channel, whereas the Future Thinking School's concept is premised on live interaction. Another difference lies in

the business model behind the two: Home Delivery is free of charge, whereas Future Thinking School is a paid program. The latter has clear audience targets and is a carefully tailored offer. Instead, Home Delivery is widely targeted at different visitor profiles. Oftentimes, the wide outreach endeavors have brought about challenges when it came to meeting the expectations of an audience that was difficult to analyse and understand.

Both Future Thinking School and Home Delivery provided multiple insights on:
- outreach (showing that the online program is an opportunity to cater to an audience that would not be reached otherwise, due to its location or being under restrictions);
- collaboration and co-creation (of internal teams from different departments as new skill sets were required to deliver the online programs; and cooperation of external partners joining as expert speakers);
- opportunity to grow into expanding long-term offers (part of which can provide the basis of a subscription model, which, alongside the public program, can offer intimate sessions with more interaction).

Benefits & Impact	- expanding the outreach by generating content that other sectors can see as beneficial for themselves and their teams' development; - bringing different minds together (business and artists, etc.) to get different perspectives and make some topics more approachable; - diversification of audiences by providing different formats and ways of access; - rethinking the role of museums in helping build future-proof skills.
Limits & Drawbacks	Bringing different sectors together, as the concept of the Future Thinking School presupposes, oftentimes imposes a challenge of finding a common language between parties.
Future Prospects	Beauty lies in the eyes of the beholder, meaning that the appreciation of a piece of art is truly subjective. While a work of art may excite some, it may disturb and repel others. The same applies to art and museums, in general. Specific types of people are drawn to different museums and their offerings or artworks. By providing customised workshops, the Future Thinking School aims to reach out to and attract audiences, from individuals to organisations, who have not engaged with the offerings of Ars Electronica yet and may not regard themselves as "museum-" or "art-lovers." Thanks to new collaborations with public sector organisations, the Future Thinking School has recently started offering customised programs for women reentering the workforce, apprentices, and youth from socially disadvantaged backgrounds. The key focus is to allow participants without prior or limited knowledge to explore what the technological developments in a specific field, what they mean for their specific lives and what potential impacts these advancements can bring to our society, the future of work, and the future of how we interact with each other. Furthermore, the Future Thinking School plans to extend its academic reach by connecting students from various fields of studies to emerging tech and innovation. In addition to expanding the segment of individual participants, the Future Thinking School is in the process of forming a strategic partnership with a key regional player in the healthcare sector.
Key Take-Aways	Karin Gabriel, Lead of Future Thinking School & Festival University: *"Why should a kindergarten teacher be aware of Artificial Intelligence? How will deep-fake videos impact the way we consume media and build trust between each other? How will new technology developments change the tasks of an editor or a customer service agent? What impact does emerging tech have on traditional industries and business models? How do we create inclusive tech solutions?* *While emerging tech seems to be a relatively rational topic at first glance, our team has learned that it triggers emotions in all of us – from excitement to substantial fear.* *Technology developments are also never just about organisations and business models; they affect our professional and personal lives.* *And to create an inclusive future, we have to replace silo-thinking with co-creation-thinking.*

These key lessons learnt since the launch of the Future Thinking School by Ars Electronic in 2020, have guided the development and delivery of our online and in-person programs. When creating and delivering our educational workshops, we place a lot of emphasis on understanding the profile of participants and their needs before conducting the program. Furthermore, we emphasise exploring the current potential future impact of emerging technology not only on our society at large but on the lives of individual participants. This allows our participants to relate to it and to turn their oftentimes initial skepticism or fear of technological change into curiosity."

Involved Parties	Ars Electronica collaborated with various organisations and individuals for the delivery of the Home Delivery and the Future Thinking School programs. These include Cloud Flight, Grand Garage, Kunstuniversität Linz, Johannes Kepler University Linz.

Future Thinking School

Home Delivery, At home with... Emiko Ogawa

Future Thinking School, Workshop AI & Digital Humanism

Future Thinking School, Workshop AI & Digital Humanism

Home Delivery, In the MaterialLab
All Photos: Ars Electronica - Robert Bauernhansl

Home Delivery, School Program AI&You

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D ⬚ RS Digital Incubator for Museums

Who | Institutional Profile

Institution	Michigan State University's Science Gallery
Location	East Lansing, USA
Short Description	Michigan State University's (MSU) Science Gallery is a part of the international Science Gallery Network with eight locations worldwide: Dublin, London, Bengaluru, Melbourne, Rotterdam, Atlanta, and Berlin. In 2021, Science Gallery became a programmatic division of the Michigan State University Museum aimed at experimentation and innovation at the intersection of science and art.
Ownership	Public/State
Size	5 FTEs

Approach to Digital	Caroline White, Education and Learning Manager: *"Much of Science Gallery's work is intended to be experimental and short term in nature. Our approach to digital therefore, is focused on testing and engaging with new technologies, tools, and platforms to learn about the ways that particular digital engagements can enhance our visitor experience and what the opportunities, challenges, and results may be. Findings from our use of digital initiatives and tools feed into MSU Museum's digital engagement and strategy."*

What | Case

Project Title	"Future Present: Design in a Time of Urgency" exhibition and virtual mediation
Timeframe	September 2020 – December 2020

Concept & Approach	As Science Gallery´s exhibition *Future Present: Design in a Time of Urgency* was in development when the pandemic struck, the institution had to reimagine the work of its education and learning team. Part of the education and learning team, mediators are young adults, typically aged 18 to 25, that work in the gallery space and are responsible for facilitating dialogue with visitors. The conversations that occur in the gallery are fundamental to the visitors' engagement with the exhibition as well as to the mediators' personal growth and learning. From introducing the remotely controlled telepresence robots and a smartphone tour to giving the mediators the role of social media content creators, Science Gallery tested new strategies for facilitating learning in this entirely remote context. The initial challenge in working under the circumstances of the pandemic was preserving the mediator model and still allowing for the dialogue and interaction with visitors.

One of the solutions was the development of the smartphone tour which the mediators designed and implemented independently. Engaging the education team in the content production process brought the mediators' perspective into the space without them being physically there and provided an alternative medium for the exhibition content in the event that the gallery experience needed to become entirely remote. To develop the solution, the mediators were asked to pick a piece from the exhibition that they were passionate about and to create a digital story around it, in the form of infographics, videos, audio interviews, or any other content format of their choosing. The mediators´ role was not only to create the content but also to develop a content strategy for the selected piece. In addition to content production for the smartphone tour, mediators wrote blog posts about their selected works for the Science Gallery website and formed a social media team to design content for Science Gallery's Instagram. Mediators hosted "Mediator Monday" Instagram lives where the audience could learn more about the individual mediators and their experiences, view animations , and learn about individual exhibits.

To allow for more interaction in the physical gallery space – in parallel to developing the smartphone tour, Michigan State University's Science Gallery introduced telepresence robots. This allowed mediators to accompany the visitors throughout the exhibition space without being physically present. The decision was inspired by the study "Hybrid Learning in Higher Education: The Potential of Teaching and Learning with Robot-Mediated Communication" by Benjamin Gleason from Iowa State University and Christine Greenhow from Michigan State University.

Technology
The robots were provided to the institution by the Michigan State University's College of Education and the MSU Museum. Technology-wise the solution was quite simple – a display set on top of a base with wheels. With the help of the robots, visitors could see mediators, talk to them, and be accompanied by them throughout the exhibition space. In turn, mediators could navigate the robot from any location using a special dashboard and remote control. The software for the Beam telepresence robots could be downloaded from the company's website, and mediators used their laptop computers to login and take control of the robot.

Onboarding and mediation
Arriving visitors were greeted at the front desk by the gallery´s team members. Further, they were invited to take the tour with the member of education team whose virtual-physical presence via the robot technology came as a surprise.
Some of the Science Gallery team members were permanently onsite to introduce the mediators who worked via robots to visitors and take care of any technical difficulties that occured (e.g. robots being stuck, etc).

Visitor feedback
During the exhibition, Science Gallery held a survey among visitors of the exhibition. The visitors were invited to evaluate their experience with robots. The survey asked: "On a scale of 1 (extremely negative) to 5 (extremely positive), how was your experience speaking with a mediator?" The exhibition "Future Present" (which featured the telepresence robots way of mediation) showed the result of 4,45 points. Interestingly, the same question asked as part of the exhibition "Tracked and Traced," which used in-person mediation, showed a very similar result of 4,55.

Benefits & Impact	In terms of sustainability, the project proved that there is no need for a large number of robots to ensure the efficiency of mediation. MSU's Science Gallery only used 2 robots throughout the project. The institution also highlights that training costs were low. The mediator training on the control and use of the robots and the software install was conducted 1:1 between the education and learning manager and the mediators. Each session took between 10 and 30 minutes to complete.

The use of telepresence robots also raised the following topics
- the potential of this format of mediation in terms of accessibility (as it gives people who cannot be physically present a chance to experience the exhibition too);
- providing solutions for staff experience exchange (via robots, mediators from different Science Gallery Network locations could connect with each other and visitors);
- reimaging the communication with visitors (ensuring the dialogue can take place in multiple formats);

	• an opportunity for more flexibility in terms of the presence in the physical space for mediators (safety, remote work, etc.).
Limits & Drawbacks	• time to adapt to working with robots (mediators experienced minor challenges in adapting to navigate the physical space virtually via robots, getting a sense of physical distance in the space, etc.); • the difficulties with interpreting some subtle visitor reactions (reading body language, etc.) and determining when to continue to engage or when to step away; • challenges related to the reliability of the software (i.e., how often the robot would crash) and the internet connection on site.
Future Prospects	The use of telepresence robots as a way of mediation sparked some vivid discussions and exchange within the Science Gallery Network partners. The possibility of remotely exchanging mediators across Science Gallery locations (e.g. a mediator from Bengaluru using a telepresence robot to mediate a show in Melbourne) and opening the option for visitors to sign up to visit the gallery via robot. Michigan State University's TEDx program also utilized the robots to allow remote presenters to interact in an in-person networking session.
Key Take-Aways	• Collaborations between the education and communications team creates robust, engaging content that captures the story of the exhibitions. • The implementation of telepresence robots helps remote staff (or visitors) feel connected and engaged in conversation and opens opportunities for increased access to gallery spaces. • Hybrid approaches to audience engagement and dialogue in the physical gallery spaces lead to similar outcomes in terms of the quality of the visitor experience.
Involved Parties	Michigan State University

Michigan State University's Science Gallery
Photo: Montez Miller

Michigan State University's Science Gallery
Photo: Caroline White

SPARKLE
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D RS Digital Incubator for Museums

Who | Institutional Profile

Institution	Yale Peabody Museum of Natural History
Location	New Haven, Connecticut
Short Description	Yale Peabody Museum has been part of Yale and New Haven for more than 150 years. In the 19th century it was the science startup of its day. Currently the museum is going through a major renovation that will reinvent the Peabody for the 21st century and beyond, further establishing the Museum as a home for cutting-edge research, extraordinary education, and breathtaking exhibitions. The museum is to reopen in 2024.
Ownership	private non-profit organisation
Size	94,30 FTE

Approach to Digital	iDigPaleo aims to lower the bar to accessing digital collections data. The broader public has virtual access to material that is generally available to research visitors. Working with educational professionals, iDigPaleo has fine-tuned ease of access, browsability, and use of digital collections data.

What | Case

Project Title	iDigPaleo, collection digitisation and curated educational packages
Timeframe	Since 2013

Concept & Approach	iDigPaleo contains a subset of data which is also contained in iDigBio, the United States national hub for digitised collections data. There are several subsets that aggregate data related to a thematic research project (for example, insects, the Cretaceous Western Interior Seaway, the fossils of Florissant National Monument). iDigPaleo and iDigBio collaborate, but are funded independently from each other by the National Science Foundation and other sources. iDigPaleo was first developed for fossil insects in 2013 as part of a 4-year grant and has been expanded for two other projects since then. Within the project iDigPaleo, Yale Peabody Museum made the data of its natural history collection accessible to the broad public. As part of a US nation-wide initiative, the team developed a digital toolset that enables teachers and students to address key concepts in science education using collection records.

The process of collection digitisation was part of the grant programme. This project addresses the broader impacts which are essential elements of grants that promote the use of collections beyond the scientific community.

Fundamental to the project was how to help young people use the museum's collection in the same way that scientists do and in what way it can support their education.

Digitisation and the platform
The project started with the collaborative digitisation programme for the fossil-insect and entailed digitising all of the fossil insects in multiple museums and public partners. As part of it, the institution set up the portal that contains all the aggregated data including images.

An integral part of the project was data testing with educators aimed at defining what the final product should be. During the workshop, educators shared their ideas on how the platform can be optimised for use within educational activities. One of the main educators´ concerns was that they didn't have the background knowledge on how to search through the database and how to integrate the records into the classroom activities.

There were a few decisions made to align with educators´ recommendations.

1. The working group pointed at the limitations of the user experience and thus the portal´s functionality had to be expanded.

The first step was to integrate the option of filtered browsing to the platform. This way users could be guided through the records and their search could be refined. As the second step, to smooth the user experience, the institution incorporated common names (e.g. snails, moon snails) in the taxonomic level. Behind the user interface the common names are translated to scientific names to query the database.

2. Another decision made as a result of consultations with educators was the development of the curated content.

During the workshop, the educators expressed their interest in having the pre-curated galleries with accompanying activities. This stemmed from the challenge connected to the lack of the background knowledge about the collection and the difficulty for educators to generate educational content based on the collection´s items.

For example, the Florissant National Monument portal (comprised of invertebrate, vertebrate, and floral collections data) has an activity called "Introduction to Plants and Climate" that allows students to utilise leaf morphology as a proxy for paleoclimate.

Additional functions the platform obtained:
- Establishing connections between educators and students so that the activities the students are engaged with within the portal (e.g. creating item collections, etc) could be automatically visible to educators and fellow students.
- Access to data requires only an internet collection and reference materials are provided. Student accounts are linked to instructor accounts, to facilitate learning in a classroom environment.
- To do this, students register in the system providing an email address. This is used to connect the accounts of teachers with students. Tools are integrated into the accounts of registered users that allow for tagging, creating galleries, measuring digital specimens, and annotating images.

User testing
The testing of the platform was performed by the group of high school students in the Peabody after school EVOLUTIONS program, who provided user interface input. The testing helped to generate multiple questions and integrate the received feedback.

As the project evolved, the museum´s team had to look into a number of questions, particularly which format should the platform entail (web-based, Iphone- or Ipad-compatible), how much is built in the background information and more.

Benefits & Impact	• The portal provided programmed access to collections to increase engagement with the non-research community. • Since facilitating access to the physical collections for many school groups is logistically difficult, iDigPaleo allows us to share our collections virtually with ease.
Limits & Drawbacks	• according to the museum´s team, a workshop structured specifically with user interface feedback as an end goal early in the project would have been beneficial; • finding a relevant model of sustainability (e.g. data sustainability plan); • and a quickly changing landscape of data delivery means it is easy for system to become outdated.
Future Prospects	This project provided the framework for easy delivery of digitised collections data. Although it has focused on three research themes, it could be "skinned" for any suitable project or used for large-scale access to datasets, rather than subsets of data.
Key Take-Aways	Susan Butts, Ph.D. Division of Invertebrate Paleontology Yale Peabody Museum and Talia Karim, Collection Manager Invertebrate Paleontology, University of Colorado Museum of Natural History *"Museum collections are resources for everyone, not just researchers. Digitised collections can be used by school kids with the same goals as physical collections are used by researchers and can also be incorporated into cross-disciplinary studies tailored to the educational goals of the classroom."*
Involved Parties	Multiple museums were involved in the project and Whirl-i-gig developed the site. The project was funded primarily by the National Science Foundation.

Yale Peabody Museum of Natural History
Photo: Cooper-Joseph Studio

SPARKLE
case

D◫◫RS Digital Incubator for Museums

Who | Institutional Profile

Institution	experimenta
Location	Heilbronn, Germany
Short Description	experimenta Heilbronn, a non-profit limited liability company, is a world of learning and experience and the largest science centre in southern Germany. Under the motto "Experience creates knowledge – knowledge creates experience", experimenta has been bringing scientific and technological topics to audiences of all ages since 2009. On 6 500 square meters, various theme worlds, talent workshops and special exhibitions offer engaging experiences and in-depth hands-on-activities.
Ownership	Non-profit limited liability company
Size	About 200 FTE's

Approach to Digital	Speaking about the institution´s approach to digital and how it informs the overall strategy, experimenta's team highlights: *"Innovative into the future! Under this credo, we have considered current core technologies and integrated them into our digital strategy. We are not interested in bringing new technologies to experimenta at any price, but rather in using innovation and digital offerings to strengthen our visitors' experience."* *Our digital strategy does not focus on transferring experimenta into virtual space. Rather, we want to use digital content to strengthen the on-site experience and create virtual offerings that invite visitors to come and see experimenta. It's not just about creating digital content. Especially as a science center, we are concerned with teaching and learning through new technologies. The educational mission is clearly in the foreground.* *As our first and most important field of action, we have set ourselves the task of making experimenta visit a digital experience. We want to take our visitors with us and support them from the booking stage through the visit to subsequent research. The focus is not only on digital natives. We analyse inclusion issues and the view of digital immigrants, who may find it a little more difficult to use digital services."*

What | Case

Project Title	Installation remodeling and qualitative research on mediation
Timeframe	2020

Concept & Approach	In 2020, during the Covid lockdown, experimenta revised several exhibits in its permanent exhibition. To ensure that the insights from visitors' on-site experience were integrated in the project of remodeling, the institution engaged its team of explainers (mediation team) in their analysis. The entire explainers' team was invited to share their knowledge, observations and ideas in a 2-stage survey. The evaluation provided experimenta with valuable data and proved essential for the remodeling of the exhibits. A particularly important aspect was the integration of science center´s team into the institution´s decision-making process.

The remodeling concerned a larger exhibit complex called *Water landscape*, a hands-on experience where young visitors aged 4 to 10 learn about the physics of water through play and interaction. A timing and tracking study and an exit interview carried out before the evaluation proved that this exhibit complex was highly attractive and memorable for young visitors, with children spending a considerable amount of time in it. However, the appeal was not spread equally among the different exhibits. In particular one of the three parts (*Town Harbour*) proved less popular among children. Unsure about the reasons for this lack of engagement, the science center's team used the survey as a way to find the answer.

Until then, the guides and supervisors working on the floor had made their comments and observations about *Town Harbour known* only anecdotally, in personal conversations. Their experience was never studied and therefore systematic data and knowledge were missing. To improve that, 114 guides were surveyed during the center's pandemic-related closure. The survey was conducted digitally via MS Forms. It consisted of two parts. Survey 1 aimed to identify the problems and determine relevant solutions. The respondents were asked to comment on possible ways to assess the relevance of the exhibits and improve their engagement potential. Survey 2 was held after the exhibition's rebuilt. It must be mentioned that the number of guides participating in it (23) was now much smaller due to the low budget and short-term staff cuts in the course of the pandemic.

Survey 1 was in fact a questionnaire consisting of five open questions. It was distributed via email using the contact database of the explainers. It also contained graphic drafts to enable the respondents to compare the previous design with redesign ideas.

Objectives and the concept behind the project:
- problems had become apparent yet quite unsystematically – a need for reliable data emerged;
- guides had the most experience with the visitors, hence the exhibition team decided to systematically survey them during the lockdown.

Examples of the water space challenges which had to be resolved:
- there was a lot of water splashing in some places (which required constant floor wiping);
- a railway track within *Town Harbour* did not fulfill its playful purpose because it was very short and ended in the water;
- loose play elements (like cranes) constantly disappeared in the water and could no longer be used by children;
- some play elements remained completely unattended.

Results of Survey 1:
- the majority of the explainers were in favour of keeping the railway but integrating a new railway bridge as a play element;
- the majority of explainers were in favour of a fixed crane (one of the elements of the installation);
- numerous suggestions were given for improving the use of loose LEGO elements.

The final design of the installation adopted suggestions from the survey:
- a new island was installed, and a new bridge was built to ensure an attractive round course of the train;
- cranes were permanently installed;
- new storage possibilities for the lost elements were introduced;
- more appealing colours highlighting the integrative parts of *Town Harbour* were added;

Survey 2 was also carried out via MS Forms but distributed on tablets on site, after the explainers had got the chance to experience and test the changes made to the exhibits (there

were no visitors at that time due to Pandemic-related closure). Overall, 23 guides were surveyed.

Learning from the first open-ended survey, which required a huge amount of content analysis work, it was decided to now mix closed and open questions. The questionnaire prompted guides to evaluate on a bipolar Likert scale the attractiveness of new elements compared to the previous ones, generating quantitative data. However, a few open questions still left possibilities for unexpected answers, e.g., guides' recommendations for solving remaining or new issues. In addition, a meta-level was now involved in the survey: the guides were asked how useful they found the survey and how integrated it made them feel.

All the ideas generated by the respondents were communicated to and discussed with the exhibit developers. However, not all of them could be adopted and implemented, due to safety issues (e.g., the risk of children falling into the water basin). Other concerns raised, e.g., the fact that the water pressure or reels were difficult to operate by children, were approached in a further adjustment phase. The guides also highlighted the importance of personal conversations and interactions onsite, which could be taken into account for future exhibition evaluation.

In the aftermath of the project, experimenta´s team reported positively on the impact of the project.
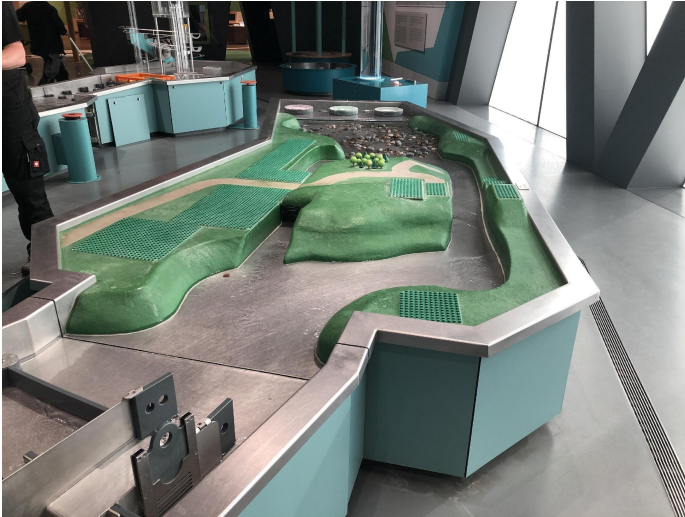
Hülya Onat-Schelleter, Visitor Guide at experimenta:

"I think it's great that we, visitor guides, are involved in exhibition development, because we are constantly in direct contact with the visitors. We see what goes down well, what is accepted and what is not. And when I'm taken seriously, I perceive the exhibits in a completely different way, I think more deeply."

Claudia Gorr, Evaluation & Research, experimenta:
"It is sensible to involve guides in the further development of our exhibitions - indisputably! But if you ask them, make sure you are open to hearing something uncomfortable or being confronted with demands that cannot be fully met. Feedback on how the findings from surveys are handled is therefore at least as important."

Benefits & Impact	- holding the survey in 2 stages (pre- and post- exhibition rebuilt) allowed for a so-called feedback loop and, thus, more insights; - the guides´ experience with exhibition content mediation provided straightforward data as well as sentiment analysis based on organic interactions with visitors; - active engagement of team members (explainers) into the process of content production and decision making proved to be insightful in terms of data and beneficial in terms of integrating explainers more into institutional processes; - being open to extensive comments and experience proved to be a constructive way of receiving information and turning it into actionable results.
Limits & Drawbacks	- challenges with the analysis of the open-ended data; - challenges in finding the right balance between the guides´ perspectives on the one hand and safety and budget related needs on the other hand.
Future Prospects	In future audience analysis endeavours, the experimenta team will consider combining both formats: online surveys and focus groups. The two approaches could complement each other and expand the findings.
Key Take-Aways	- the exhibition team's feelings were replaced by facts which made decision/making easier; - the exhibition team acknowledged that before conducting a survey, it is important to be open to the results and take the guides' opinions seriously; - the evaluation team acknowledged that survey data would ideally be complemented with open-ended focus group conversations in the future; - the survey reinforced the teams involved' belief that exhibition development is a constantly evolving process.
Involved Parties	Hüttinger Interactive Exhibitions (exhibition design)

experimenta, Town Harbour before rebuild

experimenta, Town Harbour after rebuild

experimenta, Girl at Water Landscape

What | Case

Project Title	Digital Backpack
Timeframe	31 March 2019, with the opening of the new experimenta

Concept & Approach	Visitors of experimenta receive a "digital backpack" – a digital storage space, where they can save their in-house experiences. This backpack allows visitors to collect personal souvenirs and take them home in digital format. At several interactive stations, visitors can create pictures, videos, audio tracks, documents, and game results. For example, a station with a big microscope lets visitors save the microscopic pictures they take of fingers, feathers, pencils or anything that comes to their minds. These pictures can be saved in the digital backpack. A station called selfie-spot records a video of the visitor while wind blows in their face and around them. This video can be saved on demand. A station where visitors can compose their own songs, records them into the digital backpack. Documents of citizen science projects, links to science news or results of a so-called talent search, where visitors compare themselves against others in search of their talents, can also be deposited in the digital backpack. All these items can be stored through an RFID wristband and taken home through a secure user account. Many interactive stations prompt visitors to save their work into the digital backpack. The content of the backpack can be viewed and printed at the visitor stations in the foyer or at home.
Benefits & Impact	The digital backpack was developed to enhance the visitor and post-visit experience when the backpack can be "unpacked" with family or friends who stayed at home.
Limits & Drawbacks	According to experimenta´s team, the digital backpack is complex; therefore, changes on one side could create unwanted changes on the other, if not properly thought through. Setting up the digital backpack, while adhering strictly to German and European privacy laws, was a challenge. It made registration for a secure user account cumbersome. The institution needed to make an effort to explain the digital backpack and its functionalities to its visitors. It was not at all self-explanatory. In the beginning, there were visitors who lost their data, because they didn't know how to use the digital backpack.
Future Prospects	● the team behind the project is still trying to make the digital backpack a bit more user-friendly for people who use it for the first time; ● experimenta is finishing a video informing its visitors about the digital backpack to help with the communication.
Key Take-Aways	Friederike Wawerka, Exhibit Development at experimenta: *"The great thing about the digital backpack is that I can take something home with me from the experimenta visit. Pictures or videos that I put creative work into are saved and I can show them to friends and family."* The case is exemplary, since it allows people to collect the objects that they like – as a Pinterest, in a way. Proceeding with the exploration of the possibilities, usability, UX design will bring this project even further.
Involved Parties	Milla & Partner (design) InSynergie (multimedia solutions)

Screen 1 (Welcome yvonne!)

Welcome yvonne!

You are logged in with your visitor account and linked to an email address.

Visitor account

Log out

| All | Pictures | Videos | Documents | Management | Share | ✕ |

Enter your search item... ✕

Mini World
at 08/04/2022 10:18

Mini World
at 08/04/2022 10:17

Talent Search Evaluation
at 08/04/2022 10:14

Stereo Images
at 16/10/2021 12:34

Article Vaccines II
at 23/01/2020 14:33

Your visits

All
⋮
Now
⋮
April
⋮
2021
⋮
2020
⋮
2019

DE EN

Help

Screen 2 (Welcome Anja!)

Welcome Anja!

You are logged in with your visitor account and linked to an email address.

Visitor account

Log out

| All | Pictures | Videos | Audio | Documents | Management | Share | ✕ |

Enter your search item... ✕

Talent Search Evaluation
at 08/04/2022 15:04

Mini World
at 08/04/2022 14:44

SELFIE SPOT
at 08/04/2022 14:55

Musictable
at 08/04/2022 14:51

Your visits

All
⋮
Now
⋮
April
⋮
February
⋮
2021
⋮
2020

DE EN

Help

experimenta, Two digital backpacks with different entries

34

Crowdsourcing

If we agree that two minds are better than one when it comes to solving problems, then museums should not overlook crowdsourcing when approaching the needs and challenges public institutions are facing. Turning a question over to a wide and diverse talent pool can provide access to unexpected ideas, suggestions for a new approach or service, or for a new solution to a challenging problem. Crowdsourcing involves seeking knowledge or services from a large body of people, engaging a 'crowd' for a common goal — often innovation, problem solving, or efficiency. It touches across all social and business interactions. Thanks to our growing connectivity, it is now easier than ever to collectively contribute to a project or cause.

Crowdsourcing has been around for already a while and is changing the way we work, hire, research, make and market. It can take a lot of different forms. A great common example is online reviews. Governments are applying crowdsourcing to empower citizens and give a greater voice to the people. In science and health care, crowdsourcing contributes to democratisation of problem-solving and acceleration of innovation.

Particularly the breadth and diversity of social media offer huge potential for crowdsourcing. Businesses look to social media platforms to gather ideas for new products and services as well as to drive engagement with customers. For example, Google's Crowdsourcing app lets its users contribute solutions and fixes to common problems with Google products and services. Many companies use dedicated crowdsourcing sites like 99designs or Fiverr to find solutions to niche tasks like graphic design, proofreading or software testing. Crowdsourcing can also take the form of idea competitions such as Ideas for Action, a forum for students and young professionals to submit solutions to global innovation challenges or hackathons. Perhaps the most prominent example of crowdsourcing is Wikipedia. And let's not forget that crowdfunding is also a type of crowdsourcing where individuals pledge money toward an idea at the concept or pre-production stage.

Crowdsourcing

What is worth bearing in mind is that to be effective, a crowdsourcing project needs a well-defined scope - exact explanation of what is required in terms of a suggested idea or solution. It also needs to be decided in advance, whether you want to target a large group of people or a specific one with highly-developed skills and experience. A specialised crowdsourcing platform can help to structure this process and guide interactions between the organisation seeking input, and those looking to provide it.

Overall, Crowdsourcing offers a lot of advantages, such as lower costs, greater speed and diversity, media coverage, enhanced brand visibility and marketing. Moreover, it offers a framework for people to feel connected to organisations and initiatives around particular causes, building a community of contributors. Crowdsourcing can be helpful for museums, particularly when designing public campaigns, approaching knowledge production and mobilising resources.

D D R S

SPARKLE
case

D   RS Digital Incubator for Museums

Who | Institutional Profile

Institution	Australian Museum
Location	Sydney, Australia
Short Description	More than a leading Sydney attraction, the Australian Museum is a hub of information, resources and research. The Museum´s vision encompasses being a leading voice for the richness of life, the Earth and culture in Australia and the Pacific, transforming the conversation around climate change, the environment and wildlife conservation, being a strong advocate for First Nations' culture, and continuing to develop world-leading science, collections, exhibitions and education programs.
Ownership	The Australian Museum is an NSW Government Institution
Size	Approximately 300 FTE's. In 2017/18 visitation to the AM was 473 687, up more than 7% from 2016/17 and 25% since 2015. A further 326 000 people visited AM touring exhibitions across Australia and North America.

Approach to Digital	The Australian Museum's (AM) mission is to ignite wonder, inspire debate and drive change. Its Vision is to be a leading voice for the richness of life, the earth and culture in Australia and the Pacific. This is inscribed in the Strategic Goals of the museum´s 2023 Corporate Strategic Plan. The first priority of AM's Corporate Strategic Plan (CSP) captures the museum´s digital approach and is to expand the reach and influence. The Strategic Plan further foregrounds: *"We will build our platform and understanding of our community so that we can broaden and deepen the connection and influence we have with our local and global audience.* *We have an opportunity to develop a more engaged, wider audience across Australia and internationally through our digital and physical channels, building a deeper understanding of our unique blend of science and culture. Locally in New South Wales, we will connect with schools with our Museum content and expertise through our education program and with adults through our citizen science. Globally, we will use our platform to share the important stories of our world surfaced through our science and culture and hold more conversations on urgent issues such as climate change and the impact on biodiversity and communities."* Among goals based on which the institution will measure the success of the first CSP Priority: ● an increased outreach effort though existing and new AM channels, reaching a broader audience; ● increased digital and physical visitation; ● online collection access that offers meaningful connection with the museum's objects; ● increased brand awareness resulting in increased audience participation in all that the AM can offer, all year-round; ● creation of additional revenue channels for the AM; ● meeting the museum's mission goals on remote communities/schools (visitation from disadvantaged schools).

What | Case

Project Title	DigiVol, a crowdsourcing platform
Timeframe	Since 2011

Concept & Approach	DigiVol is a crowdsourcing platform that was developed by the Australian Museum in collaboration with the Atlas of Living Australia – CSIRO (ALA). The platform is used by institutions around the world as a way of combining the efforts of volunteers to help digitise their data. This data may be in the form of museum object labels, field notebooks and diaries, recording sheets, registers or photographs.
	DigiVol was created to assist the Australian Museum to digitise its collections and to help other institutions around the world to digitise theirs also. Since its inception in 2011, the platform has drawn over 11 000 volunteers to help create a digital record, accessible around the world, of more than 4,5 million items.
	The pandemic of 2020 brought a spike in activity on the platform. Of the millions of digital records that have been created, about half have been generated since the beginning of the pandemic. The programme was particularly successful during the period of the pandemic as it allowed people to make a contribution safely from home but also enabled productive, safe interaction with others, through the digital medium.
	The online accessibility of DigiVol enabled people in Australia and around the world to take part in something that helped make a difference in the world, whilst helping them feel a sense of connectedness with others.
	Through DigiVol, the museum invites its community to ● contribute to knowledge by helping researchers better understand the diversity of plant and animal life; ● become an online volunteer and be part of an active community that supports and contributes to science and culture; ● to make data accessible by unlocking collections and extending the reach of information around the world.
	Volunteering / Virtual Expeditions There are many ways volunteers can engage in collecting information or data. Some data can be extracted from museum labels and field notebooks by transcribing handwritten words. Other forms of collection data may be by tagging images or identifying animals and their behavior in the images. Prior to activities, online volunteers are presented with tutorials to help them get started in joining the project (or as it is called "virtual expedition").
	DigiVol uses several approaches of data collection on its website: ● collection labels (capturing data from specimen and object labels to make it accessible for scientific and cultural research); ● historical documents (transcription of text and data from historical documents to make them digitally accessible); ● "Wildlife Spotter" (identifying and tagging images of animals and collection objects to support information discovery and research).
	Platform DigiVol is a Model View Controller (MVC) web application written in the Java/Groovy-based Grails framework, using PostgreSQL for its database management system. The UX utilises web development frameworks such as jQuery and Angular. DigiVol is hosted on Amazon's AWS platform that provides scalability as DigiVol becomes more popular over time.
	The ALA manages the technical side of the infrastructure, managing the code, and hosting and maintaining the DigiVol application infrastructure. The Australian Museum runs the DigiVol crowdsourcing program, recruiting, training and engaging volunteers, assisting institutions in

using DigiVol. Together the ALA and the AM plan and develop the software code to meet the needs of the stakeholders.

Aim and purpose of capturing data

Capturing data into a digital form is important as it helps researchers to have access to data that can be used for a variety of studies. The data, once captured, becomes available through a wide range of mechanisms that make it accessible to the scientific and broader communities. Among such platforms:

- Individual institution collections and associated databases
- The Atlas of Living Australia - CSIRO
- The Global Biodiversity Information Facility

Cooperation with other institutions ("submit an expedition")

DigiVol is open to any institution or individual who has a project that would be well suited to DigiVol volunteers.

Among institutions offering their expeditions to volunteers (numbers of transcriptions completed in brackets):

- Australian Museum — 267 000;
- New York Botanical Garden - William & Lynda Steere Herbarium — 94 576;
- Royal Botanic Garden Edinburgh — 71 721;
- Royal Botanic Gardens Kew — 128 588;
- Australian Bush Heritage — 591 000.

Becoming an online volunteer

Anyone can become a DigiVol volunteer, with just access to a computer, internet access and an email address. Those who want to become volunteers must register on DigiVol before they can join an expedition. Once registered, volunteers can join any expedition in the list on the homepage of the website and will receive the first task.

Data validation

The program utilises a 2-phase validation process. Each task is firstly transcribed by a volunteer and then validated by an experienced volunteer. The data is then returned to the institution, checked and processed. Data can then be uploaded to the relevant data sharing portal, where it can be used by the general public and the research community.

Feedback

According to the team of volunteers, they enjoy the variety of interesting tasks provided by DigiVol and feel they are making a difference by transcribing information to be made available for research. Many find it interesting and absorbing whilst others also enjoy the challenge of doing as many tasks as they can. Volunteers´ contributions to future academic work are of help for researchers all around the world.

Community

The DigiVol platform is highly interactive and significantly contributes to strengthening the commitment of volunteers as a community. There is a Forum for volunteers to interact with the institutional staff and other volunteers, to ask and answer questions. There is also an *Honour Board* where volunteers who completed the highest numbers of tasks are highlighted on a daily, weekly, monthly and overall time frame. The platform also has a *Latest Contributions* section showing the results of work performed by volunteers within an expedition and inviting others to join it.

DigiVol latest stats:

- 11 200 + volunteers
- more than 4,5 million tasks

Benefits & Impact	- free use of the platform by institutions; - openness and availability of the platform (the open-source code is available to any institution which is interested in the initiative) contributing to the visibility of the museum´s brand; - a strong community engaged in the project.
Challenges	- building trust among collection managers; - ensuring training for the volunteers; - financial side of keeping the project running.

Future Prospects	DigiVol is constantly looking at new opportunities for crowdsourcing and is approached by institutions with ideas in mind to explore. It has been DigiVol's willingness to develop and innovate that has helped it grow so effectively.
Key Take-Aways	Paul Flemons, Manager of Digital Collections and Citizen Science: *"DigiVol is a multifaceted project that produces strategically important outcomes for the Australian Museum and museums around the world. It delivers cost effective collection digitisation whilst increasing public science and culture literacy through engaging volunteers onsite and online to deliver access to priceless cultural and natural history collections for research and public good purposes."*
Involved Parties	DigiVol is a collaboration between the Australian Museum and the The Atlas of Living Australia - CSIRO.

DigiVol: a collaboration between Australian Museum and the Atlas of Living Australia - CSIRO

Sharing is Caring

For more than ten years, our motto in developing digital museum practice has been Sharing is Caring. It started out with the realisation that a lot of the new things we wanted to do digitally were severely hampered by copyright regulations dating from the analogue age.

I think a lot of museum workers are afraid of violating copyright restrictions – a field so complex that it can feel safer to leave unchallenged. But we felt that the rules were out of touch with the needs and behaviours of today's users, and with our obligations as public institutions to make cultural heritage relevant to more and more diverse users. Our answer has been to form initiatives and communities of peers across the museum sector that change the ways we work with our collections and with our users.

The most important concerted effort – apart from all the collaborative pilot projects and experiments we have done together – has been to set up a strong platform for sharing knowledge and experiences within digital museum practice. The first Sharing is Caring conference was held in Copenhagen in 2011, gathering hundreds of professionals for a learning and exchange experience. Since then, Sharing is Caring has spread around Europe, with events organised by colleagues in Stockholm, Hamburg, Brussels and Amsterdam. Last year we celebrated its 10 year anniversary.

Sharing is Caring is all about the realisation that together we stand stronger. Today, museums need stay relevant in a reality in which competition doesn't come from other museums or classical cultural institutions but from Youtube,Netflix and other online media with world class expertise in grabbing people's attention. How can museums continue to play a role in the attention economy of the internet? Thequestion calls for a comprehensive investigation but one key answer is to open up and share.

Opening up our online collection means entering the flow of the web. It means letting go of control but it also means that our collections will be discovered,enjoyed and used by many more diverse audiences and users. When cultural heritage images and data are openly licensed, they can be used, for instance, in Wikipedia articles who rank high in Google searches, due to Google favouring websites that attract a lot of traffic. Sharing is a way of caring for our cultural heritage, and for our users, because it allows us to showcase it where users can be found in huge numbers.

But opening up goes way beyond the technical and legal domain. The really important thing is to open our minds and ears to each other – both our cultural heritage colleagues, professionals in other sectors tackling the consequences of digitalisation, and not least, the people we're here to serve. In an age where one of the greatest threats to our democratic societies is coming from misinformation on the internet and digital media, our research-based, fact-checked knowledge and resources can play a key role in securing access to trustworthy information for the wider public . But it needs to be where people are, instead of being locked up in institutional silos. Therefore, sharing is an effective way of caring, also for democracy.

Merete Sanderhoff

Curator & Senior Advisor @ SMK — Statens Museum for Kunst

SMK.
Statens Museum for Kunst
National Gallery of Denmark

Approaching content distribution and revenue models

Museums are facing a lot of challenges, combining a number of business models within one operation, considering and balancing both mission- and financially driven objectives in everyday decision-making. They also face significant headwinds such as competition with on-demand entertainment, increasing production and maintenance costs and an uncertain, to say the least, economic environment. Given the acceleration of digital pace, there is a dramatic lack of confidence.

On the other hand, they have the potential to create new ways of working within what we know as the new creative economy, and should seek to disrupt the existing approach rather than simply copying what is already available.[1]

Developing new income streams, as well as adoption of innovative new business models can demonstrate the continued relevance of museums in an increasingly digital age and offer new sustainable methods for funding creative and knowledge-production practice. Novel financial models and revenue streams are of crucial importance for the DOORS. As we are looking for and into Sparkles, the learning will go deeper than sales, transaction and marketing processes and will address audience understanding as a key component to make digital revenue models possible and sustainable.

Within this section we will be bringing cases and conversations for museums to get an opportunity to explore suites of new ideas that can be applied across core and new business to culture sector development, and to get a soft lift in capability.

1. Murphy, Oonagh. 2018. Coworking Spaces, Accelerators and Incubators: Emerging Forms of Museum Practice in an Increasingly Digital World. Museum International, 70 (1-2), pp. 62-75.

New revenue sources for museums

New financial models have been always a sensitive subject for museums. Since most museums in Europe are non-profit state-owned institutions (approximately 59%, according to the Europeana Space report), historically they focus on their mission and not on searching for new revenue streams and profitability. However, in a technology-driven age, museums are more open to exploring and experimenting. Digital transformation plays an important role in this change. MUSEUM BOOSTER researches on the transformative processes of museums worldwide, by identifying innovations that can enhance efficiency of internal workflows, hybrid visitor experience, and provide new revenue sources for museums & cultural institutions. The base of the research provide two different initiatives by MUSSEUM BOOSTER: (1) an annual Museum Innovation Barometer survey, conducted internationally on the topics of leadership, visitor experience, new revenue possibiliities; (2) An international research project, Future Museum, which brings together participants of 33 museums & institutions from 14 different countries and three continents. Fraunhofer Center for International Management and Knowledge Economy IMW, The Audience Agency, WU (Vienna University of Economics and Business) are contributing with their research to boost innovative solutions within Future Museum community. Some of the highliights from the researcha are included in this article.

A shift from money spending to money earning...

In the past, many museums were considered as "cost centres", providing public services by spending government funds. Although this is still the case in some countries, a large number of museums around the world shifted their focus on generating additional, non-governmental revenue. Securing financial well-being has become a major responsibility of museum management in the past couple of decades. While maintaining their educational and social missions, modern museums need to find a financially sustainable basis to secure their long-term viability. Some trends are more wide-spread than others when it comes to the actions taken by museums to secure financial sustainability, but the following have probably the most potential:

1. **Auxiliary or service revenue** (e.g. shops. food & beverage) refers to revenue generated from services and goods that differ from the main activities of the institution. Museum shops, cafés and restaurants used to break-even or be marginally profitable. The same was true in other industries in the past (e.g. transportation, hotels). The first sector that saw a major change in this regard were airports – moving away from a focus on passenger fees towards revenue generated by shops (duty-free, in some cases) and restaurants. Hotels are also re-discovering the importance of restaurants, lounges, bars and even shops – based on the observation that guests increasingly tend to select places based on the atmosphere in the common areas. Finally, the increase in auxiliary revenue as a major trend for the museum world as well.

2. **Benchmarking** is the process of comparing an institution's operating performance metrics against internal (historic data) and/or external (other museums) data. It allows an organisation to set goals and evaluate performance. It makes it possible to define and measure progress by comparing operating expenses per square metre, earned revenue per visitor (admissions, shop, restaurant, other

services), expenses per visitor, etc. What is rarely measured in the museum world is departmental or segmental performance – e.g., expenses vs revenue in the event department, educational department, ticketing & access control. As a major trend to come could be benchmarking within departments and service lines. This creates an understanding of how profitable each offer is.

3. **Fundraising** is a major income source in US-based museums (approximately 33%, according to „Art Museums by the Numbers" report). In Europe, the trend is still to come (currently donations & sponsorship of private institutions & individuals make up to 15% maximum of the revenue, as can be seen from case of Technorama

Distribution of Revenue: Science Centre

2019-2016 Revenue of Technorama, Winthertur, in 1 000 CHF

Source: Business Report of Technorama 2019

- ■ Public authorities
- ■ Private foundations
- ■ Technorama
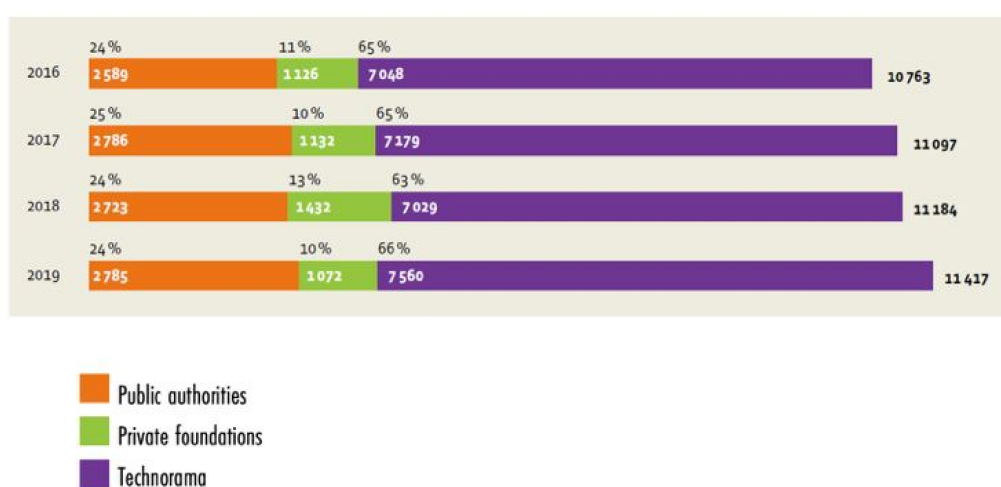
Science centres to be of wider appeal to a variety of market segments, as opposed to - for example - art museums, according to Gail Dexter Lord, Co-Founder of Lord Cultural Resources. As we see from the example of Technorama, for the last four years this science centre was able to generate earned revenue above 60% of total revenue.

Future Museum, 2020

At the same time, individual memberships and smaller contributions are on the rise. The business models of Spotify, Apple Music and similar membership models of US-based museums show that collecting smaller amounts from a large number of people, as opposed to a few major contributions can be more profitable. But the potential of subscription models in the museum sector remains to be exploited to its fullest, and when it will be it will have to be accompanied by smart marketing campaigns, integration of CRM-system, regular usage of targeted mailings, etc.

4. **Data visualisation** is another major trend in revenue management. Only few museums have a management dashboard – a system which helps visualise key data on revenue and expenses from different service lines and departments. Management dashboards allow teams to grasp key insights for the revenue management and help define further actions.

5. **Portfolio strategy** is a classical term for the investment sector, yet still relatively undiscovered in the museum world. Creating a portfolio strategy for museums means segregating possible offers (e.g. workshops, educational tours for school classes, etc.) and identifying target audience, demand, and

pricing. While not yet a wide-spread practice, it can become a major trend also for museums – as can be seen in the case of Mauritshuis.

6. **Improvement of staff efficiency** can be tackled from two sides. On one hand, certain aspects should be taken into consideration when it comes to resources planning – for example, demand/visitor forecasting based on previous years, weather forecast, seasonality, etc. Automated and centralised communication systems can allow managing permanent staff, freelancers and volunteers efficiently. On the other hand, with the help of benchmarking, it can be analysed better, where cost reductions can be achieved – for example, the same person managing ticketing and the shop or an employee working 50% for marketing and 50% for the educational department.

Challenges and the ways to improve profitability

Almost all museums have experienced shortages of funding at one point. It is difficult to get to get governmental funding. Private donations, at least in Europe, are not so easy to come by either. The COVID-19 pandemic in 2020, depleted the financial resources of museums even further. On top of that, museums find themselves in the middle of fundamental structural changes, towards an unknown future which will be – at least partially – digital. What can museums do to offset financial challenges? How can museums generate additional revenue in innovative ways?

Here are 9 fundamental steps on how to improve the revenue and profitability of a museum.

1. Full transparency of departmental results
   Museums have profit centres but what is needed is a complete comparison of revenue and expenses across all departments. For example, personnel costs need to be allocated to different departments and profit centres. In order to see how a museum shop is performing, relevant revenue, costs and expenses data need to be allocated to it. The same is true for all other services, that play a major role in a museum (e.g. restaurants, educational part, events). Most museums do that, but not all and not in full consequence for all departments.
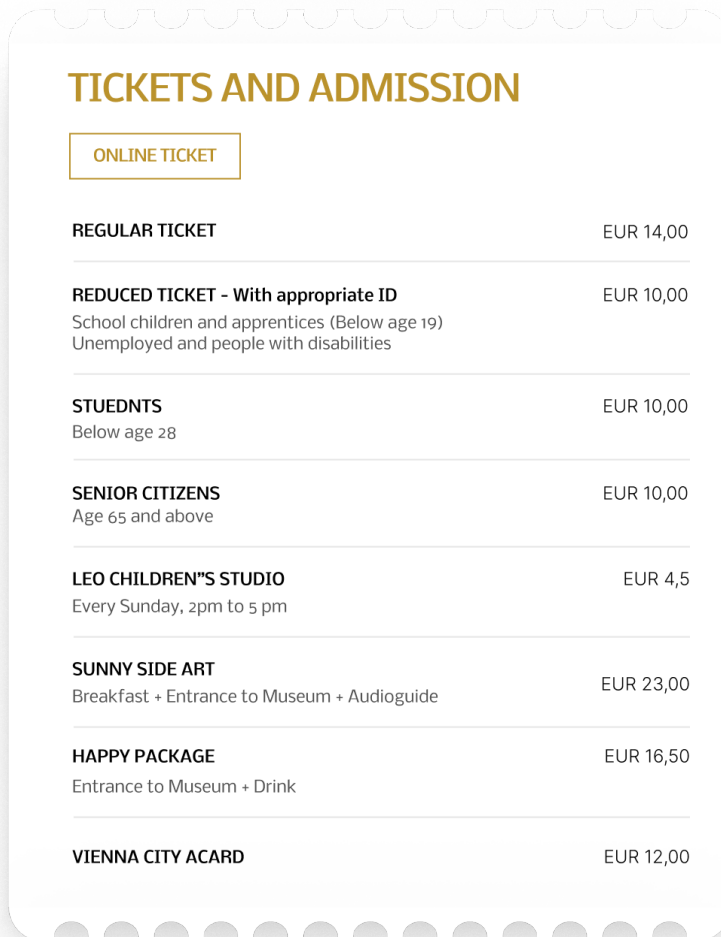
2. Online ticketing
   One of the key goals of museums should be to increase online ticket sales, for three main reasons: staff cost reduction, more data on ticket sales and better possibilities for upselling. Knowing this, MoMA New York has now switched completely to online ticket sales.

3. Dynamic pricing/yield management
   Dynamic pricing is probably the easiest way for museums to enhance their revenue without substantial additional costs. There is a natural reluctance in the cultural sector towards dynamic pricing, because it is seen as unfair. However, the issue of fairness very much depends on how dynamic pricing is implemented – various entertainment and leisure companies have already proven that. For example, in 2012, the Moulin Rouge started the process of adopting a dynamic pricing model. This was conditioned by the high seat occupancy (98% for 900 seats, two shows per day) which kept the revenue generation at a limit. In this regard, a transition to dynamic pricing was seen as a step to optimise the revenue per seat. The main challenge of the transition were the technical capabilities of the existing booking system. Thus the process of transitioning to dynamic pricing was accompanied by a change of software (booking and ticketing system, accounting system) and an introduction of variable prices, which at first was in the -20% to +20% range. Among the outcomes of the transition was a re-tailored cooperation with online travel agencies (15+ OTAs using Moulin Rouge's API to get the real-time pricing) and achieving variable price indicators in the range of -25% to +40%. Generally, the adopting of dynamic pricing resulted in attracting new visitors to Moulin Rouge.

4. **Packages and upselling**
    The museum sector can learn from the hospitality industry about the benefits of offering packages. The packages often allow indirect upselling. Adding certain benefits will enable museums to charge more. Several museums in Vienna – like Leopold Museum, are already experimenting with packages. In their offers, one can find a tour combined with a drink or a breakfast in the museum café. This approach allows for almost instant revenue increases. These packages can also be bundled with digital offers – as the case of WOWbox by Technopolis illustrates

TICKETS AND ADMISSION

ONLINE TICKET

REGULAR TICKET	EUR 14,00
REDUCED TICKET - With appropriate ID School children and apprentices (Below age 19) Unemployed and people with disabilities	EUR 10,00
STUEDNTS Below age 28	EUR 10,00
SENIOR CITIZENS Age 65 and above	EUR 10,00
LEO CHILDREN"S STUDIO Every Sunday, 2pm to 5 pm	EUR 4,5
SUNNY SIDE ART Breakfast + Entrance to Museum + Audioguide	EUR 23,00
HAPPY PACKAGE Entrance to Museum + Drink	EUR 16,50
VIENNA CITY ACARD	EUR 12,00

5. **Separate approach for core business (exhibitions/collections) and secondary offers (services)**
    The auxiliary services are still an afterthought for museums. The main function of a museum remains in the educational sphere (showing art or other exhibits), and not the selling of food or sell. But in order to maximise revenue, these secondary offerings must be given a more important role for two reasons: (1) they can enhance the experience of visitors, and (2) they generate direct revenue. The background and mindset of most museum managers is geared towards providing culture and knowledge. Running a restaurant or a shop is solely oriented towards profit maximisation. While these two segments seem to have completely different goals, in the end they both contribute to the visitor experience.

6. **Creativity and profit-orientation in services (shops, food & beverage...)**
    A lot of creativity is required in the service sector – events, food and beverage, shops, etc. Conrad Hilton, the founder of Hilton Hotels, revolutionised the hotel business by looking beyond selling rooms. He expended the use of hotel buildings to unexplored commercial possibilities – a flower shop at the entrance, a coffee shop in the lobby. Museums should do the same, while remaining sensitive to their public and mindfully avoiding over-commercialisation.

7. Usage of external expertise and best practices for services

It is not a core function of a museum or a museum director to provide great gastronomic or shopping experiences. Consequently, the often encountered lack of expertise should be accompanied by external know-how, e.g. by engaging a storyteller for communications and fundraising, a specialist in retail for the design of a museum shop or a food & beverage consultant for a restaurant. Simply renting out a museum restaurant for five or ten years is often not good to improve the experience of visitors and to generate more revenue and profit for the museum. Ancillary services must be aligned with the 'brand' of the cultural institution if they are to be successful in creating a unique visitor experience.

8. Sowing the seeds of digital revenue

The topic of digital revenue is often difficult and elusive. While there seems to be a consensus that digital revenue is the future, how to generate digital revenue remains an open question. Many experiments were conducted in the last five years, including:

- *in-app purchases*
- *robot or substitute person visit*
- *tablets for out-of-home experiences*
- *virtual/online memberships*
- *special online events*
- *educational elements/courses*
- *digital content with "pay-as-you-wish" concepts*

- *online fundraising*
- *digitorials*
- *digital museum guides*
- *online experiences in connection with exhibitions*
- *digital exhibitions*
- *upselling of tickets with digital offers benefits/packages*

When it comes to digital revenue sources, there is no size-fits-all solution. Museums have to define clear goals before deciding on which solution to adopt.

9. Innovative funding

As the case of Secession museum in Vienna has proven, it is possible to collect substantial funds from a large number of people. The Association of Visual Artists Vienna, Secession, is the world's oldest independent exhibition space dedicated to contemporary art. It has been run by artists since it was founded in 1897. The Secession is mostly (two-third) self-financed and generates around half of its budget with admission fees. The overall lack of revenue brings serious challenges. Thus, to complete the building's renovation, the Association addressed its potential donors for support offering them a very special concept of crowdfunding campaign. Secession's building boasts a golden dome made of sophisticated sculptural elements, 2,500 leaves and over 300 berries. The Association used this signature architecture as a basis for a campaign and offered to support the renovation by making a donation of Euro 100 corresponding to each leaf in the sculptural ensemble. The campaign was successful and allowed to complete the renovation while all the donors got enlisted on the Secession's website, with their names on the leaves. What is needed for a successful fundraising campaign are creativity, storytelling and a smart involvement of external stakeholders.
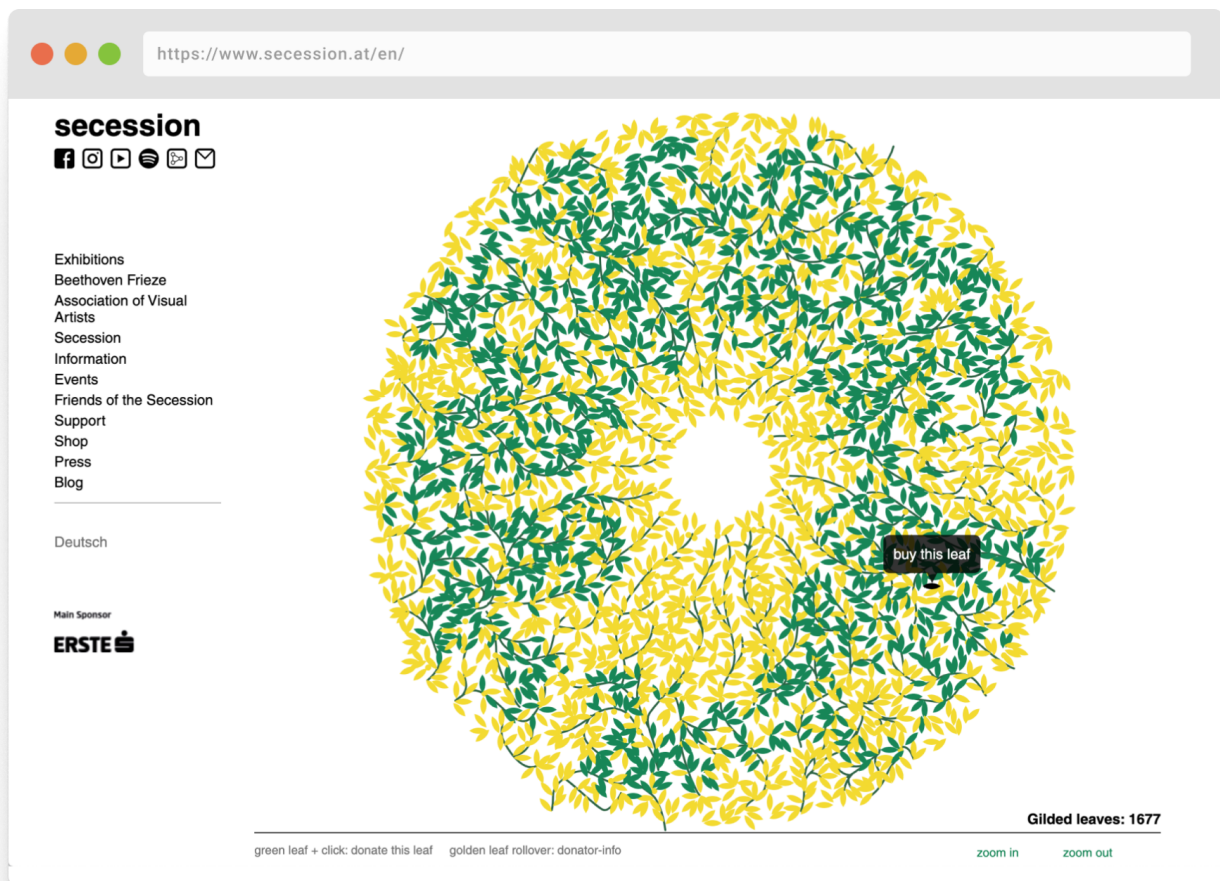
Summary

Exploring new digital revenue streams is becoming increasingly important in the sector. Now is the time for museums to consider how their digital content and other unique offerings, can keep them connected to audiences, while also contributing to their bottom line.

Sofia Widmann

Founder & CEO @MUSEUM BOOSTER

SPARKLE
case

D⬜ ⬜RS Digital Incubator for Museums

Who | Institutional Profile

Institution	Weserburg Museum für moderne Kunst
Location	Bremen, Germany
Short Description	The Weserburg Museum für moderne Kunst was founded in Bremen in 1991. With an exhibition space of around 5 000 square meters, Weserburg is one of the larger museums of modern art in Germany. The site of the museum occupies four old warehouses on the riverbanks of the historic city centre. Before the building came to house art, it contained a tobacco factory and later a coffee-roasting facility. The museum is one of Germany's most unique art spaces, and is considered to have been Europe's first collector's museum. Nowadays it teams up with over 40 private collections to complement its own. It is home to the Centre for Artists Publications, which oversees one of the largest collections in the field worldwide.
Ownership	private foundation
Size	25 FTEs, 40 000 visitors per year

Approach to Digital	Digital approaches are part of the museum's overall strategy, with a focal point on research and arts education.

What | Case

Project Title	Pay-As-You-Stay model (PAYS)
Timeframe	2019 – 2020

Concept & Approach	Using a novel approach to its admission prices, Weserburg experimented with a pay-per-use model, temporarily exchanging the regular day-rate admission fee with a flexible fee based on the time spent at the museum. Instead of paying a lump-sum upon entry, visitors paid at the exit depending on the length of their stay. During three test phases throughout 15 weeks in December 2019, March 2020, and September/October 2020, visitors paid €1 per 10 Minutes, but never more than the €9 they would usually pay for regular admission (€4,50 reduced rate). The model's theoretic background can be traced back to economics: Gossen's second law of decreasing marginal utility - first put forth by economists Bruno S. Frey and Lasse steiner in 2010 -, describes a steady decline of additional benefit per unit during a museum visit to the point that staying any longer provides no further gain. The experience might even wane if we stay too long, e.g. when we've seen enough, or when our feet hurt. Thus, Pay-As-You-Stay is meant to empower visitors to determine when they are "satisfied", and only charge for their individual utility.

The average time spent at Weserburg, as surveyed prior to the experiment, is approximately 90 minutes. Thus the "1 Euro per 10 Minutes" formula corresponded to the regular price of €9. The linear 1-Euro increase signaled a simple, clear logic, and the visitor-oriented intention of the museum. Limiting the maximum price to what visitors were used to pay, ensured that the model was perceived as beneficial by all visitors, supporting the initial idea of easing accessibility, and promoting short but repeated visits.

Tom Schößler, Managing Director of Weserburg reveals the pros and cons of the time-based pricing approach:

"The model was perceived very positively by the audience and led to an average increase in visits of 30%. The price cap proved a very important factor, as visitors easily understood they could not lose in this model, even if they stayed several hours. Experienced museum goers were paying the same as before, and newcomers could have a casual, low-risk visit. Contemporary art can be a challenging venture to some, and the model motivates the hesitant to give it a try. Or come back for more, see their favorite piece of art, or spend a lunch break at the museum. Financially, the price cap inevitably lowers the revenue per visit, since those staying less than 90 minutes pay less than before, but those staying longer don't pay more. We knew beforehand that this effect would have to be offset by an increase in visitation, otherwise the experiment would lead to a decrease in overall ticket revenues. As such, the model was also an attempt to use the upsides of model like Pay-As-You-Can and even free admission, without forfeiting income. We later estimated that a higher threshold would indeed have led to a slight increase in revenues but would have to be held up against a possible loss of trust."

How "Pay-As-You-Stay" worked
When entering, visitors received a regular ticket with a time stamp instead of a price. When leaving, they came to the front desk again, and the time of exit was recorded. A simple calculation form at the register, later to be integrated in the ticketing software, showed the price. Hence visitors paid before leaving, and thus admission prices turned into "exit prices".

It should be noted that the model was only applied to single ticket buyers, hence only a share of all visits. Free admission, e.g., for kids, stayed in place. Tours, events, school class visits etc. were also exempt from the model, as they are not time-based services.

Success factors:

- private legal form and freedom in pricing;
- convinced management and team;
- large differences in visiting time possible;
- design of entrance/exit (architecture, routing, cash desk, museum shop);
- central location;
- price cap;
- no negative effects on core audience and memberships.

Open questions:

- effect of programming on avg. time spent (e.g., special exhibitions);
- long-term effect on audience (attraction effect, effect on target audiences, e.g., students);
- long-term increase in first-time visits as well as repeated visits;
- effect of different external factors, e.g., seasons, tourism etc.

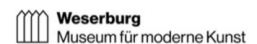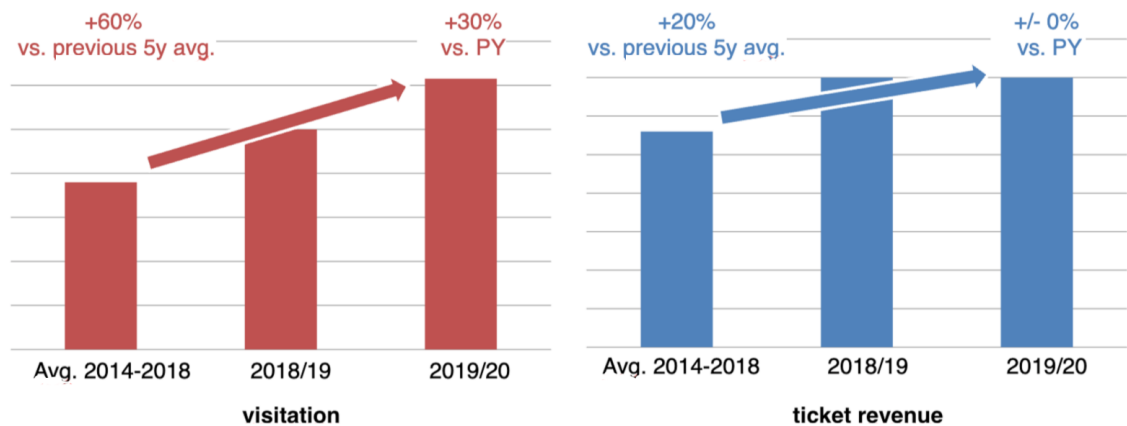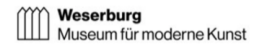|	
Benefits & Impact	Increase in visitation: ● roughly 30% increase compared to previous year (+60% compared to 5-year average). Stable ticket revenue ● no overall change in ticket revenues compared to previous year (slight increase in revenue compared to 5-year average); ● decrease in average ticket price paid was offset by increase in tickets sold ● strong increase in short visits, especially in the 60–90-minute segment; ● average time spent approx. 15 minutes less (driven by intended short visits) **Effect on number of visits and ticket revenue** Weserburg — Museum für moderne Kunst Very positive response ● model strengthens willingness to revisit; ● positive feedback to the "innovativeness" and "playfulness" of the approach; ● willingness to recommend (net promoter score) twice as high as with classic pricing; ● fits well with Covid-19 conditions, e.g., short length of stay due to compulsory masking.
Limits & Drawbacks	● the risk of the loss of revenue in case of low visitation; ● changes in visitor behaviour (however, only 1% of visitors said they felt rushed by the "ticking clock"); ● the shift in format serves the initially defined aims but there is no clear or significant effect on social visitor structure.
Future Prospects	The model is yet to be implemented permanently. The experiment was interrupted by Covid19-related lockdowns. When re-opening, the visit was influenced by many rules (facial masks, social distancing, special directions etc.). The museum did not want to implement yet another new process under these circumstances. The permanent implementation is planned for 2022 once post-covid operations run smoothly.
Key Take-Aways	Tom Schößler, Managing Director at Weserburg Museum (2017 – 2021): *"The experiment showed that small and medium scale museums can innovate in such challenging fields as pricing, without compromising their mission. There are more choices than full-day prices and free admission. A new pricing model needs almost no investment, and, when done in a visitor-oriented way, signals the museum's serious intent to lower barriers to visitation. Benefits must be communicated properly, and potential offsets evaluated earnestly. Above all: it showed that boldness does pay off – in this case not financially, but in new and more satisfied visitors."*

Involved Parties	Bruno Frey and Lasse Steiner (original idea) According to Tom Schößler, the experimental mode so far was done by the museum alone. At this stage, it was important to involve employees and the foundation's board. When implementing it permanently, relevant external partners such as the city of Bremen (as the main funder), partnering collections or the members may be involved.

Advertisement Poster for the third test phase of Pay-As-You-Stay, graphic design: Studio Lindhorst-Emme+Hinrichs

Weserburg Museum für moderne Kunst, View of the former packhouse facade, Photo: Weserburg

SPARKLE case

DOORS Digital Incubator for Museums

Who | Institutional Profile

Institution	Technopolis
Location	Mechelen, Belgium
Short Description	Technopolis, the Flemish science centre, is a permanent platform for science and technology in Flanders, that grew out of the Flanders Technology International. Over the course of recent years, Technopolis has become a brand for all kinds of activities both inside and outside, online and offline. Technopolis is also renowned as a professional event organiser facilitating around 300 corporate events per year. As a result of the pandemic, the team focused on organisation of online and hybrid events. This resulted in the conception of the HYBR platform. The driving force behind Technopolis´ team is Stephane Berghmans, CEO: *"Together we face some big challenges: on the one hand, the present future technologies and, on the other hand, how to build an online community of passionate people who can help shape our offer."*
Ownership	40% state and 60% public
Size	77 FTE's and 300 000 visitors

Approach to Digital	Stephane Berghmans, Technopolis´ CEO: *"We need to reach as many people as possible through all available channels. Digital is a key channel for that. Digital is very efficient in reaching many people with relatively low investment. It's also crucial for reaching youngsters that no longer come to the science centre.* *Digital can support the onsite experience. We create a digital layer on top of the physical exhibits. This can be done by giving additional explanations and stories that people can take home. This is a way to stay connected to the physical science centre."* Key elements of the institution´s digital strategy targeted at reaching out to and enhancing visitor engagement: ● Use social media and formats that engage users. ● Collaborate with influencers that are of interest to the target group. ● Co-create with your audience (have them determine the content or topics).

What | Case

Project Title	Approach to digital content production and WOWbox
Timeframe	November 2021

Concept & Approach	**Digital content** Technopolis´ focus on digital is predicated on its outreach endeavours. The science center is highly active in the digital realm offering its visitors a wide range of digital activities such as experiments, blog posts, video series, platform to search for STEM activities nearby and much more. Diverse digital offers are tailored to engage younger audiences and sustain their interest in the long run.

Social media

Technopolis used the 2020 Covid-19 pandemic as an occasion to leverage the digital. The institution boosted its marketing campaigns and presence on social media. The institutional Tik Tok account saw an exponential growth of 270%. The audiences that the social media campaigns reached were exactly the segment the institution was strategically targeting, 14 – 24 years old.

- YouTube 10,3K followers – 75% growth
- Facebook 39K followers – 30% growth (mainly parents)
- Facebook for teachers 23K followers – 45% growth
- Instagram 14,4K followers – 27% growth

Video series

Another endeavour to enhance the institution´s outreach was the development of the video platform that features video series grouped by topics. The approach to the video content was breaking away from the past. Local influencers were approached and were deeply engaged in the content production process. Instead of scientists, Technopolis involved those who can "translate" content to kids. A few examples of the video series:

- LabKlap: episodes in which promising young scientists reveal details about their research and about what drives them; the series provide a unique look behind the scenes of the labs and research rooms of 8 different colleges and universities in Flanders;
- Student Choice: 12 episodes in which a 19-year-old Witse is introduced to different courses at Thomas More, the largest university of applied sciences in Flanders and to different study programs within the study areas of Business & Management, Tech & IT and Teacher Training;
- Weekly Question: weekly videos in which "smart minds from KU Leuven, UAntwerp, Ugent, LUCA School of Arts, Thomas More Hogeschool, UCLL and VUB get in front of the camera to provide clear answers to a series of crazy and not so crazy questions".

For the funding of the programme, Technopolis decided to focus on companies. But how do you approach companies and motivate them to fund the production of videos? First and foremost, the companies who supported the project shared the institution's interest in approaching and profiling a specific target audience – young future professionals. To engage them, Technopolis focused on comprehending their aspirations, hobbies, and expectations of the future. The companies then contributed to creating videos depicting people at work, as a combined form of learning and social advertising.

Stephane Berghmans: *"Companies are desperately trying to find talent. They realise their marketing is not effective and are using us to create engaging content. Universities are also struggling to persuade young people to choose technical or scientific education. Their marketing departments have also funded us to create content for this."*

The approach proved to be highly successful in terms of making a profit, as the institution charged on average €5 000 – 10 000 for one series of videos. The first year of the project helped Technopolis reach a budget of €100 000 for content production.

WOWbox

One of the offers for young audiences is WOWbox, a curated package of science-related activities with a home delivery. The current WOWbox experience offers kids to go on a space mission, or "a wow-what-is-that space adventure".

Receiving the box, kids immerse themselves into tailored "assignments" for space mission. For example, build a Morse device and power it with solar panels, learn Morse language, gather materials and design an original solution and more.

The WOWbox consists of:
- two booklets with a comic strip and a set of assignments;
- a kit with everything needed for building a Morse device on Mars (two buzzers, jumper cables, a wire stripper and a solar panel);
- Morse alphabet cards;
- stickers;
- stuff for additional experiments (a star map, a sachet of baking soda and a tea bag).

WOWbox can be ordered via Technopolis´ web shop and delivered directly at home. The cost of the package is €32,50 (+ €4,50 shipping costs).

As Technopolis highlights, WOWbox serves as a crossover between the physical and the digital. With WOWbox, visitors can get something physical without having to come to the centre. But each WOWbox also contains a free entrance ticket for a child worth €14,50.

According to Technopolis, the goal of the WOWbox is not to be a huge income generator but rather an exciting extension of the physical visit. It can also be a way to reach out to schools without obliging them to visit Technopolis, e.g. when schools don't have a big budget to organise a visit but would still want to offer something to their students.

Benefits & Impact	On one hand, WOWbox is built around exhibitions that are on display at the science centre and can function as an extension to the physical visit. On the other hand, it manages to shift the table completely and create a meaningful edutainment offer, where a physical visit becomes a bonus and an option, rather than a must.
Limits & Drawbacks	Content creation and the associated costs demand a lot of resources. However, WOWbox plays an important role in the ecosystem of Technopolis offers and the institution´s turn to digital. The WOWbox has not been a huge financial success, however, according to Technopolis only due to the fact that the institution has not really deployed it on a large scale. It is a relevant and solid revenue generating tool that manages to succeed both with and without the physical space of the institution.
Future Prospects	As a grow-into area, Technopolis considers a subscription model that combines physical and digital offers and underlines the importance of thinking beyond the building. Stephane Berghmans: *"A science centre can offer the physical and digital experience for a monthly subscription. That means unlimited access to the physical science centre as well as access to premium digital content. This is a way of making money on digital content as well. Right now, less than 5% of our visitors buy a yearly pass (that is earned after three visits). The monthly subscription could have the same price as the yearly pass (on a year's basis). But you get more than what you get today."* In terms of possible collaborative offers, Stephane Berghmans highlights: *"I guess ECSITE could help bundle content that could be available digitally. As we have so many languages in Europe, there would not be competition for content per country as we could translate our local content to be available in other countries. Also, influencers will vary per country. It's the same as what you see in television formats (such as the masked singer or Lego Masters)."*
Key Take-Aways	Stephane Berghmans: *"It is key that the content should not just follow a recipe. It should be open-ended and allow a user to create his or her own experience. You can offer some ideas, but it should not be just one outcome.* *The logistics of production and shipping should be outsourced if you don't have the capacity in-house. The contribution of a science centre should be content and high-quality pedagogic approaches. In the case of Technopolis, we are talking to a toy company to take care of the logistics and look for revenue sharing."* The case of the WOWbox shows the following three important elements, when approaching digital production: - Museums should focus on the area, where they are the experts – on the content. When the content is "packaged" in a surprise, this creates a fear of missing out effect.

- The approach to content should be based on the preferences of the target groups. Sometimes this means the involvement of the right "translator" (blogger, influencer, etc).
- Museums should consider not only B to C (business to client) approach, but also B to B (business to business), as the example with content production for universities shows.

Technopolis, WOWbox

What | Case

Project Title	HYBR
Timeframe	Since 2020

Concept & Approach	HYBR is a digital hybrid meeting platform developed by Technopolis in partnership with VisitFlanders. The platform is more than just a regular Zoom and offers a form of non-linear television. It allows for an easy, live interaction, for example by allowing discussion rooms.

The platform was initially developed to host events online that could no longer be held physically because of the pandemic. During the Day of Science in Flanders, the event that originally presupposed all research institutions opening their doors to visitors and encouraging interaction (60 000 people per day), HYBR became a digital host. The platform was a space where visitors could engage and interact: post, experiment, play games, follow presentations and more. There was also a live show hosted by grassroot names from the local television channel, who did experiments, explained several research topics, etc. Overall, the event engaged 42 000 people online. The show was watched by 10 000 online visitors on the day.

HYBR proves beneficial for Technopolis' interaction with schools. The students no longer need to come to the centre, instead the platform allows them to easily interact with the person presenting, for instance, local entrepreneurs. The platform allowed them to present remotely to a group of 30-40 kids who could in their turn freely interview speakers and raise questions of relevance to them.

The principal benefit of the tool is that, unlike television, it provides a nonlinear way of broadcasting content. Thus, kids who participate in the event through the platform can actually influence and shape the event by contributing to it.

Technopolis' team believes that such a design can potentially be a future-resilient financial model for the science center. Technopolis, thus, offers an alternative to traditional broadcasting companies that are too big to change swiftly and too costly to work with.

HYBR is generating revenue. After an upfront investment of €100 000, the platform has already paid for itself and keeps generating revenue. As Technopolis team reveals, subcontracting an external company for a single hybrid event costs at least €60 000. With HYBR Technopolis fully covers its own demands and offers a tool for others to use.

The future-proof approach to developing HYBR includes bringing a long-term technical partner on board to ensure the qualified maintenance of the platform.

Strongholds of Technopolis' approach to digital:
- investing in brand recognition through relevant, adaptable and increased presence on social media channels. The institution´s logo embodies the turn to digital. It is non-linear, created specifically with an eye towards the digital screen, adaptable to different digital formats and reflecting the vibrant digital nature of the institution.
- understanding the audiences and their needs (acknowledging the need to "translate" content into a "language" that is "native" and relevant to the target audiences, their age and digital milieu).
- hiring for digital capacity – hunting and prioritising people who are confident with digital, comprehend target audiences and their needs, who can independently find the right format of communicating with audiences and are capable to deliver.

As the institution puts it, the team is "the engine that keeps Technopolis running":
"Behind our ambitious mission and vision is a satisfied, motivated, and happy team that radiates (work) fun." |

Benefits & Impact	As a platform HYBR: ● allows the institution to have its own infrastructure and helps to create the ecosystem around the organisation; ● is a digitally native offer that is nonlinear and highly interactive but does not cannibalise the onsite, does not make physical interaction odd or absent; ● is available for a reasonable price to organisations that are not able to afford comparative software at market prices (e.g., schools). According to Technopolis, now the main goal of the team is to use the platform to get scientists and professionals in front of youngsters. The institution can invite them to Technopolis and stream their presentations into schools and people's home. It's not always easy to get an opportunity to interact with these profiles because they don't have a lot of time available. By using HYBR, Technopolis can ensure availability while reaching more youngsters and suggesting a digitally relevant framework to interact with the speakers.
Limits & Drawbacks	● the need to have a maintenance partner; ● having the necessary infrastructure both on the institution´s side (cameras and bandwidth) as well as on the receiving side (hardware and bandwidth); ● digital fatigue might make this platform obsolete in the future.
Future Prospects	Technopolis sees the potential in the subscription-based model and leveraging the membership model which combine physical visits, and digital content for the yearly contribution.
Key Take-Aways	● the digital format is to stay – users already got used to the virtual events; ● museums that provide event spaces should keep up with times – and offer modern event formats (e.g., hybrid events, online events) together with the digital content, produced by the museum; ● cooperation with other museums, educational facilities, software developers can boost the development of such formats; ● opening non-linear communication and digital-native offers allows for an organic and dynamic interaction.
Involved Parties	VisitFlanders Your interactive media agency - Artcore Society Antwerp

Technopolis, HYBR

SPARKLE

case

D ⬚ ⬚ RS Digital Incubator for Museums

Who | Institutional Profile

Institution	<u>Mauritshuis</u>
Location	The Hague, Netherlands
Short Description	The Mauritshuis is in the centre of The Hague, the historical and political heart of the Netherlands. The museum has a collection of Dutch and Flemish paintings from the 17th century, the golden age of this type of art. The museum consists of two historical buildings: the Mauritshuis, a city palace on the Plein in The Hague and the Prince William V Gallery at the Buitenhof.
Ownership	Public
Size	+/- 480 000 visitors per year

Approach to Digital	At the core of Mauritshuis' approach to digital is storytelling. Discovering new and engaging ways of telling a story through exhibitions is central to the institution´s overall approach. The institution focuses on using technology as a means to complement the story rather than dominate it.

In <u>2020</u>, Mauritshuis commissioned the digital consultancy agency Dept to create a new website for the museum and a multimedia tour that would offer greater scope for a plurality of voices, in an attempt to engage the institution´s online audience with a narrative. The new website embodies the museum´s approach to storytelling. It is filled with storylines that unfold upon searching through the collection. When visitors search for a certain piece, they get a full story. If they want to dive deeper into it, they can get even more info. By layering the information, the institution makes sure to appeal to all its visitors in their diversity instead of focusing on just one group. At the same time, the website is tailored so as not to overload users with information and is highly interactive.

<u>Dept</u>: *"The new design is not only pleasing to the eye but allows for more interesting and user-friendly digital experiences. The physical experience is also enhanced with an improved multimedia tour; leading visitors through the museum in an interactive and fascinating journey. Mauritshuis and Dept optimised the digital marketing aspects and developed creative content concepts to reach additional target groups, such as young people, and enthuse them to visit the museum."*

Mauritshuis´ <u>Annual report 2020</u> reveals how the institution leveraged digital channels during the pandemic when the number of physical museum visitors dropped to a historic low. In 2020, the number of visitors to the museum's website increased significantly compared to the number of visitors in 2019, and all social media channels grew both in terms of size and engagement. To keep in touch with the audience while the museum remained closed, the institution launched the *Mauritshuis at home* in spring of 2020. The platform contained a broad online range of activities based around the exhibitions, collection and programme, workshops for young and old, as well as special activities for children or the holidays. *Mauritshuis at home* successfully increased the visitor numbers and most of all enabled the museum to reach a much wider audience, including families.

In 2020, another digital endeavour was realised as the entire museum – including all the paintings and every centimeter of the plinths and wall coverings in the rooms – was turned |

into images by a digitalisation robot. Based on this, the online Gigapixel Museum was launched in autumn. Thanks to the link with the museum's existing Second Canvas Mauritshuis app, visitors can wander through the museum while the stories behind the masterpieces are revealed.

2020 was also characterised by preparations for the (digital) future. In collaboration with Deloitte digital, the museum reconstructed the ideal (digital) customer journey, which forms a blueprint for the development of new functionalities.

What | Case

Project Title	Culture Segmentation
Timeframe	2020 – 2024

Concept & Approach	Mauritshuis developed a visitor segmentation model to obtain a sharper target group definition. The model significantly informed the approach to temporary exhibitions and special formats and, to a lesser extent, to the permanent collection. The new system of target group segmentation was used for the first time in 2020. The museum's target group was defined in terms of eight individual segments based on the way customers "consumed" traditional culture (museums, concerts, the performing arts, etc.) The visitor profile was examined in collaboration with The Hague & Partners. Special attention was given to local visitors.

Mauritshuis' team enriched the tool by looking into the expectations of visitors regarding art and culture, particularly what drives specific target groups for a visit, what influences their choices and with what offers Mauritshuis can respond. Various approaches were employed for the segmentation, internal and external data were integrated, e.g., mystery guest studies, Beerda research (a small interview at the entrance) and customer satisfaction research. Looking into the Whooz segmentation system, specialised on cultural institutions, and based on different types of households in the Dutch society, has been insightful. Additionally, the museum team involved the City Marketing of the Hague and got a glimpse into the segmentation of the city of Rotterdam.

The next layer was adding the specific knowledge of the museum, such as input from the tour guides and service desk employees – insights that offer additional depth and acknowledge the context.

An overview of the visitor segmentation:

1. Heavy users
- Urban Omnivore (25 - 45-year-olds, with broad cultural tastes and interested in experiences)
- Elite Culture Lover (45-year-olds, the segment defined by cultural naturalness and comfort)
- Classic Art Lover (60-year-olds and above, visitors with broad cultural interests)

2. Medium users
- Active Family (parents with kids, who have little free time)
- Convenience Seekers (25 - 65+ year-olds, family with (older) children, secondary to highly educated, suburban residents)
- Digital Viewers (mainly between 18 - 30, intermediate to highly educated, spending a lot of time on the internet, going out and interested in popular culture)

3. Light users
- Urban Future Builders (18 - 45-year-olds, low to secondary education, different cultural background)
- District-focused Leisure Fans (45 - 65+ year-olds, low-educated, home and neighbourhood-oriented)

Mauritshuis "translated" the needs of each audience segment into content the institution could offer through its permanent collection, exhibitions and programming.

Doorvertaling naar behoeften die het Mauritshuis kan vervullen...
...via vaste collectie, tentoonstellingen en programmering

		NL*	Den Haag */**	Mauritshuis	Doel-groep VC	Vaste collectie	Doel-groep TT	Tentoons telling	Dlgrp Progra m.	programm ering
Cultuur als vanzelfsprekend (heavy users)	Stadse Alleseters	5,8%	18,8%	Zij willen een keer bij het Mauritshuis geweest zijn	Ja	Ze willen de topstukken zien van de vaste collectie.	Ja	Ja, zo lang het memorabel, instagrammable is (Geur, Slow Food, Rembrandt)	Ja	Slow Food festival, etc.
	Elitaire Cultuurminnaars	11,6%	14,8%	Zij kennen het Mauritshuis; grotendeels van een eerder bezoek.	Ja	Ze trekken tijd uit voor het Mauritshuis. Ze willen de hele collectie zien.	Ja	Ja, zijn goed te verleiden om tijdens tentoonstelling langs te komen. Altijd icm de VC.	Ja	Inhoudelijke verdieping kennis
	Klassieke Kunstliefhebbers	10,9%	3,9%	Zij kennen het Mauritshuis; grotendeels van een eerder bezoek.	Ja	Ze trekken tijd uit voor het Mauritshuis. Ze willen de hele collectie zien.	Ja	Ja, ze zijn goed te verleiden om tijdens tentoonstellingen langs te komen. Zeker ook rondom klassieke thema's.	Ja	Persoonlijke uitnodiging werkt
Cultuur als optie (medium users)	Actieve Families	14,5%	11,9%	Actieve families uit de Randstad kunnen doelgroep zijn. Daar buiten niet.	Nee	Leven ingericht rondom kinderen. Laagdrempeliger vermaak heeft voorrang.	Ja	Uitzonderlijk een tt, bijvoorbeeld bij Hallo Rembrandt! Of Maurits Muis.	Ja	Kinder vakanties
	Randstedelijke Gemakszoekers	18,9%	2,2%	Zouden wel een keer naar MH willen, maar kiezen vaker voor in de buurt en laagdrempeliger vermaak.	Nee	Klassieke kunst en cultuur veelal geen specifieke interesse.	Nee	Geen specifieke interesse	Nee	...
	Digitale Kijkers	7,5%	5,8%	Komen niet snel naar MH, maar staan open voor cultuur light. Vanuit vertellen verhalen kan het een interessante groep zijn.	Ja, Digi	Alleen digitaal. Zo lang je maar op de topstukken blijft zitten en populair vertaalt via verhalen bij ze neer legt.	Nee		Ja	Bv. Maurits&
Cultuur als ongebruikelijk (light users)	Stedelijke Toekomstbouwers	8,9%	30,3%	Vormt groot aandeel in Den Haag. Kan wel interessant zijn voor educatie vanuit maatschappelijke rol.	Nee	...	Nee	...	Ja	Aanhaken op culturele identiteit
	Wijkgerichte Vrijetijdsgenieters	11,3%	11,9%	Komen niet zo snel de wijk uit. Komen ook niet naar MH. Oudere doelgroep die minder open staat.	Nee	...	Nee	...	Ja	Aanhaken op culturele identiteit

* Inwoners van Nederland / Den Haag, onderverdeeld naar 8 groepen
* * Bron: door Whooz aan Mauritshuis aangeleverde, gevalideerde data

Mh Mauritshuis

Mauritshuis

As an example, the needs of Urban Omnivore´s have been analysed from the standpoint of what Mauritshuis has to offer. In terms of collection, this segment type tends to be interested in seeing masterpieces from the permanent collection. When it comes to temporary exhibitions, this visitor type is interested in memorable and Instagram-able experiences.

The steps taken by the museum team:
1) Visualising the Mauritshuis visitor (i.e., constructing the customer persona of the Mauritshuis visitor);
2) Engaging all the knowledge available to the museum, i.e., qualitative in-depth insights from the team through interviews with tour guides and service desk employees, to gain a deeper understanding of the visitors' needs;
3) Translating knowledge into activities (by asking questions like, what is the institution going to do for its different target groups; what image does Mauritshuis want to transmit to the target groups, etc.).

Application within the organisation
Marketing
When the institution takes a decision to prioritise one or some target groups for marketing and communication projects, segmentation allows not to overlook or exclude visitors.

Programming
For each activity that the Mauritshuis develops, a specific target group can be determined in advance. Close cooperation between different departments and teams involved in the development of the activity in question is essential for this. Currently, the institution starts every project, campaign or initiative with the target group.

An example of the instrumentalisation of the visitor profiles is the museum's exhibition programme for 2022. It was designed to target different audience segments and heavily leaned onto the tool to do so. For instance, the current exhibition *In Full Bloom* dedicated to flower still lives, is mostly directed toward Classical Art Lover and Elite Culture Lover. The exhibition *Flash/Back*, which will bring together 16 contemporary photographers to create new works for and about the museum, largely focuses on Urban Omnivores as a key target audience.

It is worth mentioning that having a precise focus on a specific audience does not exclude other audience segments or disregards their active engagement. *Hello Rembrandt!* is an example of an exhibition which was originally conceived for children but successfully pulled-in an adult audience with no children as well. Hedwig Wösten, the Manager of Exhibitions and Projects at Mauritshuis, highlights that the museum aims to target several, if not all, segments of their audience throughout the year and tailors its exhibition programme accordingly.

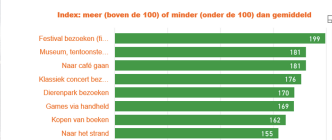|	
Benefits & Impact	The segmentation is highly applicable when having to find out in-depth information about particular audience groups. For example, when the institution aimed to expand their outreach during the COVID-19 pandemic, the segmentation proved to be instrumental in learning more about digital audiences, how to target them and the relevance of specific offers. Investing resources and effort into segmentation helps answer practical questions on digital outreach, the expectations of online visitors, how to reach them more efficiently and via which channels and social media platforms, which format fits best for which purposes and which audience segment. Overall, it was found that the museum's strength lies in reaching and attracting the high-end Culture Vulture, the Classical Art Lover and the Urban Omnivore. The visitor profile that is more challenging to reach is the District-focused Leisure Fan and the Urban Future Builder. In its policy for the next few years, Mauritshuis has designated the Urban Omnivore, the Active Family and the Urban Future Builder as their main target groups and will largely base its programming and marketing on them.
Limits & Drawbacks	● to be reflective and precise, the data should be regularly updated; ● the communication strategy in terms of channels and outreach must be tailored for each segment.
Future Prospects	The segmentation is constantly evolving and is revisited on an annual basis. For example, one of the newest updates is a focus group called "stadse cultuurliefhebber" (Urban Culture Lover), a mixture of the Urban Omnivore and the Elite Culture Lover.
Key Take-Aways	Hedwig Wösten, Manager of Exhibitions and Projects at Mauritshuis: *"Think of the visitor before you think of creating the concept of an exhibition since it will feel wrong / won't work if you do it the other way around. We reach way more Urban Omnivores, which was the goal."* The case highlights the steps, which should be taken by any museum, while developing a digital project: (1) collecting information on the target groups and setting the goals, (2) creating detailed segmentation, (3) defining formats of reaching the target groups, (4) evaluating the KPIs and (5) further re-enhancement of the offers.
Involved Parties	Dept The Hague Marketing Rotterdam Marketing

Stadse Alleseters
Jong, brede (culturele) smaak, ervaringen opdoen

De *Stadse Alleseters* zijn tussen de 25 en 45 jaar oud, van wie het merendeel tussen de 25 en 35. Over het algemeen zijn ze alleenstaand of anders samenwonend, maar kinderen zijn er meestal (nog) niet. Thuis is voor hen de plek om tot rust te komen na een dag hard werken, maar het is ook de uitvalsbasis voor een avondje stappen, een middagje winkelen of een bezoek aan de sportschool. De *Stadse Alleseters* zijn hoog opgeleid, zowel op hbo- als universitair niveau. De meesten onder hen zijn een mooie carrière aan het opbouwen en werken fulltime. Een deel van deze groep is nog aan het studeren of werkt parttime, waardoor de inkomens binnen deze groep verschillen. *Stadse Alleseters* hebben geen auto, maar maken veel gebruik van de fiets en van het openbaar vervoer zoals trein en tram, want deze stoppen praktisch voor de deur.

Wat doen ze in hun vrije tijd?   Wat zijn hun interesses?
Welke info zoeken ze online?   Welke landelijke dagbladen lezen ze?

Index: meer (boven de 100) of minder (onder de 100) dan gemiddeld

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Elitaire Cultuurminnaars
Culturele vanzelfsprekendheid met comfort

De *Elitaire Cultuurminnaars* vormen een welvarende groep en zijn over het algemeen 45 jaar en ouder. Ze zijn getrouwd en wonen samen met hun kinderen in luxe woningen. Bij de oudere Cultuurminnaars zijn de kinderen al het huis uit. De groep is hoogopgeleid, de meesten hebben een universitaire studie afgerond. Op dit moment werkt een deel van de *Elitaire Cultuurminnaars* nog fulltime in hun eigen bedrijf of heeft een leidinggevende functie. Een ander deel van hen geniet al van een welverdiend (pre)pensioen. De inkomens zijn, vanwege hun hoge functies, twee keer of meer dan twee keer modaal.

Wat doen ze in hun vrije tijd?   Wat zijn hun interesses?
Welke info zoeken ze online?   Welke landelijke dagbladen lezen ze?

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Klassieke Kunstliefhebbers

Traditioneel met culturele interesse

Over het algemeen zijn *Klassieke Kunstliefhebbers* getrouwde 60-plussers. Ze hebben een middelbare tot hogere opleiding genoten, maar nu zijn ze gepensioneerd of lopen tegen hun pensioen aan na een leven van hard werken. Ze hebben een goed leven. Hun inkomen of pensioen is anderhalf tot twee keer modaal.
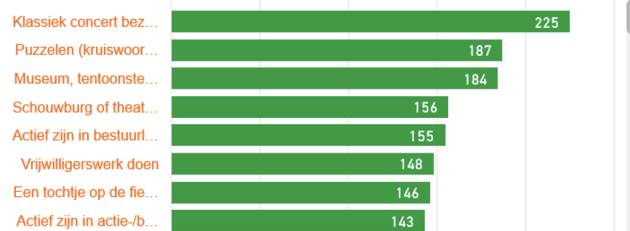
Wat doen ze in hun vrije tijd?   Wat zijn hun interesses?

Welke info zoeken ze online?   Welke landelijke dagbladen lezen ze?

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What | Case

Project Title	Special press kit for the exhibition "Smell the Art: Fleeting – Scents in Colour"
Timeframe	February 2021 – August 2021

| Concept & Approach | One of Mauritshuis' 2021 exhibitions, *Smell the Art: Fleeting – Scents in Colour* is particularly interesting, not only due to its topic, but also due to the extraordinary on- and off-site experience designed for it. The digital tour and specially designed kits were elements of the marketing campaign that proved to be a particularly successful add-on format in bringing in revenue.

The exhibition invited visitors to "smell the 17th century". It brought forward not only the visual dimension of the paintings of that period but also the smells: "In some 17th-century artworks, the suggestion of smell is so strong that you can almost imagine yourself in the moment." So the museums wondered if one experiences a painting differently and if one can also literally smell the work while looking at it? With this question in mind, Mauritshuis invited its visitors to search for the scents of the 17th century, and rely not only on one's eyes and imagination. As the promo video shows, "the paintings in the Mauritshuis no longer smell of paint … There were lots of smells present, most of which have now disappeared".

Via (covid-safe) dispensers, visitors were able to experience various smells represented in the artworks, both fragrant and disgusting (such as the smell of a clean linen cupboard, bleaching fields, ambergris, myrrh and, of course, the foul-smelling canals). In total, 8 smells were created for the exhibition. Selected artworks were complemented by a scent pump so that visitors could smell as well as see the scents shown in the painting.

The exhibition explored how smell enhances and influences other senses. This concept builds upon the research of Justus Verhagen, a neuroscience professor at Yale University who brings |

forward the "Proustian phenomenon" that odors elicit nostalgic, autobiographical memories. The role of smell drew attention particularly in the times of the COVID-19 pandemic, when those who lose their sense of smell report that subsequent sensory experiences are bland. As Verhagen explains it, "You feel more 'connected' to the environment if you simultaneously smell it."

The uniqueness of the upcoming exhibition necessitated a different approach to communication. In preparation for the show, the museum sent out special press kits with scent spritzers capturing two of the exhibition's eight scents to journalists. The museum went on with the experiment, expanding to museum visitors and making the experience of the exhibition possible anywhere.

The newly created kit included the Guided Tour: Fleeting Scent in Colour, "the first interactive virtual see-and-smell tour in the world", as well as the physical box with 4 flacons and smells. In times when travel was difficult, if at all possible, the fragrance box provided a physical component that complemented the virtual visit to the exhibition. Within the digital tour, Dutch culinary journalist and theatre-maker Joël Broekaert and Mauritshuis' curator Ariane van Suchtelen took virtual visitors through the exhibition and artworks. At the same time, visitors could use the fragrance box to smell the scents following the storyline. As Mr. Broekaert puts it: "Smell is such an underrated part of our sensory system, of our experience." Scents help intensify the experience of art, both on-site when encountering the original pieces, and online, allowing an immersion and physical dimension to the digital experience.

The scents were produced by IFF (International Flavors and Fragrances). The scent pumps are so-called dry air scenters, which last for a long time. This special scent box was made possible thanks to the museum's main sponsor NN Group and IFF. Fleur Hudig, Head of Corporate Citizenship NN Group explains: "As a partner and main sponsor of the Mauritshuis, we want to be there for them, particularly now when they are closed and can welcome no visitors. We are doing this by jointly investing in new possibilities to keep the collections accessible and by offering unique experiences. The Mauritshuis has previously organised livestreamed guided tours that could be enjoyed from home. With the addition of the fragrance box, the Mauritshuis is bringing an additional dimension to the home experience."

Benefits & Impact	According to Mauritshuis, the kit was an experiment that "got out of hand". It was initially launched with just two smells. The press was so enthusiastic that the institution made it into a digital visitors kit. Thus, besides being taken through one of the most beautiful museums in the Netherlands, it was possible to go on the virtual look-and-smell tour.

The fragrance box currently contains four scent pumps which allow visitors to smell the four scents   as they appear in the specially curated tour. The 30-minute digital tour is accessed via a QR code and URL, and can be viewed in a secure environment on YouTube. It is ideal for at home, as well as for classrooms or care homes, nursing wards and so on. The information in the box appears in two languages, Dutch and English. The fragrance boxes are made from sustainable FSC cardboard. No alcohol has been deliberately used in the creation of the scents, thus making international delivery possible.

The fragrance box was available in museum's web shop for the price of €20. Initially, 1 500 kits were produced and distributed: distributed for promotion and communication needs and then 1 328 sold via the museum web shop. The institution made a profit of €12 500 which was a good result for the first try.

Since the museum was closed when the exhibition opened, the offer was promoted digitally. The promotion continued when the museum reopened, but most of the kits had already been sold during the lockdown.

Mauritshuis created a unique and sophisticated opportunity to smell the environment. It is worth mentioning, that IFF created a special smell that approximates the original smell of the building's interior, which John Maurits (the museum's namesake) decorated with wood brought from (colonised) Brazil. This scent was lost, as an 18th-century fire destroyed the original interior and is now reconstructed for the present-day visitors. Alongside this, the museum also worked with the company to create a separate new smell-based tour of the permanent collection, designed particularly for visually impaired visitors.

Limits & Drawbacks	Handling was something that the institution slightly underestimated. All boxes were filled with the smells by volunteers in the museum´s shop. Consequently, handling was mostly done by the shop.
Future Prospects	As Hedwig Wösten highlights, such expansion of press kits was not like anything the institution had ever done before. In the future, the institution might take on such a project again. But the concept of the exhibition must be a logic booster for it. It should add to the story of the exhibition and not just be a gimmick.
Key Take-Aways	As the Mauritshuis remained closed during the pandemic, the museum team developed a tool to enable (1) a virtual visit with an actual physical, immersive layer, (2) several artworks were complemented by a scent pump so that visitors could smell as well as see the scents shown in the paintings after the reopening, and (3) online visitors could follow a 30-minute virtual tour through one of the most beautiful museums in the Netherlands, and experience a real smell tour.
Involved Parties	This exhibition was developed and launched by the Mauritshuis, in collaboration with NN Group and VriendenLoterij as well as Prins Bernhard Cultuurfonds, VM, Zabawas, Gravin van Bylandt Stichting, IFF (International Flavors and Fragrances).

Mauritshuis introduces interactive look and smell tour for the public Fleeting - Scents in Colour

Mauritshuis

What | Case

Project Title	The Goldfinch digital platform
Timeframe	2017

Concept & Approach	"A little piece of nothing... but very good." W. Bürger, (Th. Thoré) 1859 The Mauritshuis is, in physical terms, a relatively small museum. However, unlike its size, the collection is invaluable and boasting world renown masterpieces, such as Vermeer's "Girl with the Pearl Earring" and Rembrandt's "Anatomic lesson of Dr. Nicolaes Tulp". Some of the paintings might be even more famous than the museum hosting them. "The Goldfinch" by Carel Fabritius is one of such treasures. In 2017, Mauritshuis initiated a marketing endeavour focused on this artwork and the world within and behind it. The project created a highly interactive digital platform which would allow the museum to tell a complex and multi-layered story of the painting. The platform was designed to reach different audience segments, creating a seamless and all-encompassing digital experience As Energize, the creative marketing agency based in Amsterdam, has put it: "By bringing the background of this artwork to the attention of the general public – both young and old – they become familiar with not only the painting but the museum itself. For instance, we highlight the Mauritshuis as a knowledge centre for the art of painting during the Golden Age and at the same time we hope to make coming to see the painting in real life more accessible." The experience was designed to be highly user-oriented and intuitive, ensuring a smooth user journey through the engaging stories of "The Goldfinch". The platform can be equally used on-site alongside visiting the original, as well as online. The website contains nine chapters. Each of them tells a multi-faceted story of the painting (history, interpretations, technique) and provides a rich sensory experience (ensured, among other things, by the music in the background). Intertextual layers unveil general information about the painting and present very subtle details, such as the influences on the artist, historical details, the presence of the work in popular culture, etc. The last section introduces the user to the home of the painting – Mauritshuis and urges them to visit it. This Page, the digital agency and production company behind the project, notes: "The seamless experience created by loading assets in the background, playing and stopping audio on the fly, and working with parallax hotspots created an innovative new user journey. We take the user through the story in a way that feels innate, almost familiar. A website with a unique flow, full of movement and interesting content, that increased awareness of our client, and itself received worldwide attention and various awards." **Technical details of the platform** Diverse content is displayed via hotspots, which help avoid overspills and add a light feeling to the experience. The average time spent on the experience is a whooping 5+ minutes. Tools used: ReactJS and Greensock. Building the architecture of chapters, programming the blocks and hotspots to react to the scroll and have their own animations, but seamlessly scrolling into the next section was technically challenging. The content also needed to fit on every type of screen. A lot of trial and error was needed to ensure all the content was displayed correctly. **Numbers behind the project:** ● 50+ hotspots each telling a story; ● 9 interactive chapters with 120+ detailed images; ● the average time spent on site 4+ minutes.

Awards:
FWA (Site of the Day, 2017)
Awwwards (Site of the Day, 2017)
ADCN BRONZE LAMP (Digital Craft)

Source Energize

|	
Benefits & Impact	Hedwig Wösten, the Manager of Exhibitions and Projects at Mauritshuis: *"The Goldfinch appeals to every visitor, old and young. The website added value in the perception of the painting. It is even more cherished. Visitors also understand that a depiction on a painting is not the whole painting. There are so many more stories to tell. And that goes for every single painting. So, we hope the lessons taught by the goldfinch are transported to other paintings, in and outside the museum."*
Limits & Drawbacks	The main challenge connected to the project was to integrate the visits to this website in the Mauritshuis official website, as they two competed with each other at first.
Future Prospects	Despite the tactical success of the project, what the team learned is an important strategic lesson from this project: to include the story lines in the museum's website instead of creating a separate one. An illustrative example would be the story line of restorations.
Key Take-Aways	• it is essential to combine the story lines with the exhibitions, so that the content can be used on different platforms in different ways; • the experience must be visually appealing; • the tone of voice and level of information should be appropriate for the target groups defined.
Involved Parties	Energize (concept) This Page Amsterdam (mobile and website development) Ernst Dommisse (UX/design) Floris Drupsteen (motion)
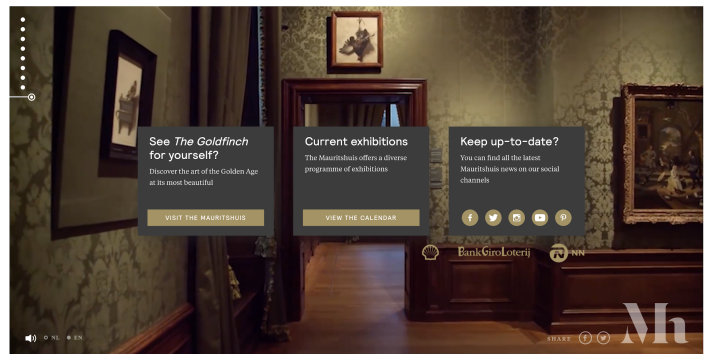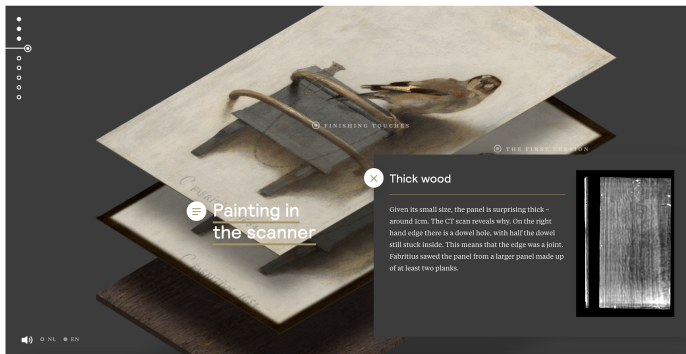
Puttertje.nl, Mauritshuis, 2017

Digital products

The technologies are being developed rapidly and therefore the market gets more and more saturated with offers and possibilities. Simultaneously, the Experience Economy has been booming. Changing consumer experiences have resulted in audiences increasingly demanding experiences ahead of products, and placing more importance on social relationships and personalised services that meet an individual need and are delivered en masse. Museums thus are pushed to expand and update their tools in an environment in which both time and money are limited. This becomes a challenge in itself, particularly for small- and medium-scale institutions, that have less financial capacities to commission tailored tools development, establish partnerships and/or client relationships with technology providers.

An important goal for DOORS in this regard is creating a framework and formats for museums to encounter creative tech and providers of digital solutions as part of the Incubation Programme and its satellites. Sparkles allow us to look behind-the-scenes of partnerships and products.

Cuseum and the Digital Evolution of Museum Membership

There is no question about it: museums and cultural institutions are being redefined in the digital age. It is precisely this reality that prompted Brendan Ciecko to start Cuseum in 2014. For eight years, Cuseum has been helping organizations drive visitor, member, and patron engagement using digital tools. In addition to providing innovative technology solutions, since its inception, Cuseum has been dedicated to researching the impact of digital projects and platforms in museums. To that end, the Cuseum team strives to deliver industry-leading research and content to explore novel concepts and technologies that have shown their potential to disrupt how cultural institutions operate.

After working with thousands of museums across digital technology and research initiatives, it has become clear that membership is one of the ripest areas for digital innovation. Since 2017, when Cuseum launched its flagship Digital Membership Card solution, it has been helping museums streamline and enhance membership operations and offerings.

How can museums leverage the power of digital to drive efficiency, engagement, and revenue in membership?

This question has been a critical area of focus for Cuseum over the past five years.

Membership, Before the Pandemic

Long before the pandemic demanded that museums adapt to our abruptly virtual world, the Cuseum team was already exploring how membership could benefit from digital innovation. Members are one of the most important assets for cultural institutions, and they are often organization's biggest advocates. They report significantly greater satisfaction and yield higher lifetime value than the average visitor. As a result, acquiring, retaining, and engaging members are essential for museums.

Yet, membership processes have traditionally been highly manual and tedious, taking time and resources away from strategic work and member activation. In other words, membership is often expensive, time-consuming, and inefficient. In particular, the membership fulfillment process includes burdensome tasks such as syncing membership information across databases, sending print requests, assembling welcome packages, replacing lost membership cards, and preparing renewals.
To address these pain points, Cuseum discovered a low-cost, effective, and sustainable solution, leveraging the power of the mobile wallet: the Digital Membership Card.

The mobile wallet piqued Cuseum's interest back in 2017 because of its growing popularity among consumers, simplicity, and ease of use. Now, years after the initial development of Digital Membership Cards, the mobile wallet has proven to be an effective, tried-and-true solution for museums.

Today, a plethora of cultural organizations, including the Virginia Museum of Fine Arts, Exploratorium, Brooklyn Children's Museum, Pittsburgh Zoo & Aquarium, Florida Aquarium, and the Franklin Park Conservatory & Botanical Gardens have implemented Digital Membership Cards as a way to streamline membership fulfillment, provide digitally accessible member benefits, enable contactless entry, interface with constituents through direct push notifications, and more.

The Acceleration of Digital Priorities in the Pandemic

Digital Membership Cards were immediately popular among museum membership professionals, and between 2017 and 2020, a growing number of early adopters began using Cuseum's platform to address the aforementioned pain points. However, when the pandemic hit, this accelerated even further.

In Spring 2020, when museums and cultural organizations were forced to shutter their doors during lockdown, many basic membership processes became impossible to carry out.

Chief among these was membership fulfillment. As organizations sought new ways to deliver memberships to their constituents, Cuseum witnessed a rapid upswing in Digital Membership adoption. In addition to facilitating fully digital distribution of memberships, Digital Membership offers a streamlined and intuitive way for museums to send push notifications straight to members' smartphones. This made it an indispensable tool for engagement and communication during the height of the pandemic. In addition to the booming interest in digital cards, Cuseum also witnessed further expansion of digital priorities in museum membership. For example, in the early months of lockdown, the team observed pioneering cultural institutions experimenting with new member-only digital content to keep their constituents engaged during unprecedented closures. At that time, the concept of "virtual membership" was still a fledgling idea, but the team at Cuseum were instantly captivated.

Witnessing the emergence of digital membership benefits, online member events, and even virtual membership levels, Cuseum organized a webinar panel in May 2020, featuring some of the very first arts and cultural professionals to launch such initiatives.

As we now know, the ad hoc activities of early 2020 were only a prelude to a much larger story of digital transformation. The pandemic progressed, and we saw a rising emphasis on digital evolution across cultural organizations of every shape and size. As digital membership models grew in popularity and scope, Cuseum also began to identify several distinct modes of virtual membership.

The Digital Transformation of Museum Membership

With the rapid spread of virtual membership initiatives throughout 2020, Cuseum initiated a research study to explore the specific nature of this digital transformation. In early 2021, we conducted a survey of over one hundred premier membership leaders across a variety of cultural organizations. The goal of this study was to examine five modes of virtual membership and why industry professionals were making them a priority for 2021. These included:
1. Virtual Member Events
2. Online Member Benefits
3. Digital Membership Cards
4. Virtual Membership Levels
5. Virtual Member Appreciation

This report was published in Spring 2021, and can be downloaded here.
The study showed that 75% of cultural organizations were offering virtual member programs, and 62% had begun offering exclusive digital content. With this explosive growth in virtual memberships, many cultural professionals began articulating their need for a better way to deliver virtual benefits. In response to these changes, and to solve lingering challenges around member services, Cuseum launched another solution: the Member Portal. With Member Portal, it hoped to empower museums to offer a truly unified membership experience. With this tool, museum members are able to update their personal details, review their membership level and benefits, and access exclusive digital content all in one place.

The Future of Membership for Museums

As the pandemic ebbs, much has changed for museums. At this point, cultural institutions have largely reopened to the public, and many have resumed in-person programs. What does this mean for the future of digital activities in museums, and for virtual membership models?

As institutions weigh the evolving role virtual engagement will play over the long term, the concept of "hybrid" has become ubiquitous, reflecting the important considerations about how to balance both in-person and digital offerings. How can organizations adapt to the new hybrid reality? What virtual initiatives remain a priority in membership? Such questions are front and center.

To examine emerging hybrid models of membership, in early 2022, Cuseum launched its second annual membership survey. This study set out to answer the questions:

1. Do museums still serve exclusively virtual constituencies in 2022?
2. To what extent are members joining via online channels?
3. How relevant do digital membership offerings remain?
4. What are the most popularly deployed virtual initiatives, and which are top priority for the year ahead?
5. How do you strike a balance between developing both in-person and online membership offerings?

[2022 Membership Insights Report: How 150 Experts Are Navigating Digital and Hybrid Initiatives in Museum Membership](#)

As revealed in this report, digital programs remain critically important in museum membership. More than ever, we observed the demand for solutions that bridge the online and onsite experience, such as Digital Membership Cards. Indeed, membership experts identified Digital Membership Cards as their number one priority for 2022.

As many Cuseum partners have noted, Digital Membership Cards are an important mechanism to connect digital offerings with in-person experiences.

 "Digital member cards are the only way our members can easily access their benefits, as we no longer issue physical cards. Additionally, our members strongly prefer in-person events and activities, and we want to honor that, while still keeping them engaged digitally." – Jerome Louis, Membership Manager @ New York Hall of Science
For this reason, Cuseums team anticipate a growing demand for this solution in the years to come.

As we push forward beyond the pandemic, the role of digital technology and engagement in membership will continue to develop. Cuseum is committed to serving the museums through both leading-edge technology solutions and industry research that enable institutions to survive and thrive. With this in mind, there are several key trends that may shape membership in the near future.

1. Integrating Digital into All Levels of Membership.

   Earlier on in the pandemic, a number of museums experimented with virtual-only membership levels or subscriptions. While these may remain relevant for some organizations, there is a much more urgent need to seamlessly integrate digital benefits, communications, engagement opportunities, and experiences into all levels of membership.

2. Implementing Solutions that Facilitate Hybrid.

   One of the top challenges for museums trying to adapt to the hybrid environment is limited resources and technology. More than ever, institutions require solutions to bridge the physical and the digital, produce hybrid events sustainably, and elevate the production quality of their virtual content.

3. Creating a Unified, Multi-Touch Member Experience.

   Rather than imagining in-person and digital components of membership as discrete entities, museums are focused on finding ways to unify the membership experience by delivering value to members through multiple avenues and platforms in a cohesive way.

Cuseum is proud to serve as the leading provider of solutions including Digital Membership, Member Portal, and Guest Pass Referral. As you seek ways to adapt to the digital and hybrid demands of the future, do not hesitate to reach out to Cuseum.

Cuseum
The leading museum engagement platform.
Trusted by hundreds of partners around the globe, Cuseum helps museums, attractions, and nonprofits drive visitor, member, and donor engagement.

CUSEUM

SPARKLE
case

D ▯ ● ▯ RS Digital Incubator for Museums

Who | Institutional Profile

Institution	Kiss the Frog
Location	Delft, Netherlands
Short Description	Kiss the Frog is a digital design agency specialised in designing and developing interactive visitor experiences for museums, science centres and corporate visitor centres. Kiss the Frog´s services cover all stages of project development from "a sketched-out concept" to "a fully-fledged design". The company particularly focuses on interactive digital experiences, "pioneering new technologies and making them accessible to clients". Their client portfolio includes the US Olympic and Paralympic Museum, Melbourne Museum, Kunstmuseum Den Haag, Rijksmuseum and Mauritshuis.

Approach to Digital	Bart van den Berg, Partner: *"A well-designed digital experience offers a low threshold for visitors to start immersing themselves in a story. Starting fun, and easy you gradually start learning more and more. Our strength is to offer a personalised digital visitor journey that triggers curiosity and enthusiasm."*

What | Case

Project Title	Digital Souvenirs and The DoSeum
Timeframe	2020

Concept & Approach	Among Kiss the Frog´s digital products, there are what they call "Digital Souvenirs" or "perfect post-visit experience". Digital Souvenirs are recorded experiences, or "mementos" of the visitor journey. These can be pictures, soundscapes, 3D scans or videos. The idea of Digital Souvenirs is connected to institutions´ aim of ensuring efficient post-visit communication. To connect the multiple ways in which an institution can enhance post-visit communication – whether it was sharing "digital products" generated as part of the visitor journey, asking for feedback, assisting in rethinking the onsite experience or receiving insights on visitor engagement – Kiss the Frog developed the platform of Digital Souvenirs. The platform aims to lower the technical threshold for museums to be able to send personalised emails to their visitors. Before developing the product, Kiss the Frog always needed to align with an institution's IT team to be able to send emails via their mail servers. This often proved to be a slow and bureaucratic undertaking, not focused on the intended visitor experience. With Digital Souvenirs, every client can easily start sending content from a digital interactive kiosk via the Digital Souvenirs' cloud API.

Digital kiosks
Interacting with the digital content onsite, visitors create one or more souvenirs that they later can access from home. The digital kiosks, introduced at high points of the visitor journey, offer visitors an opportunity to record their experience in the form of a video or a photo. Some of the Kiss the Frog´s projects use RFID technology that allows visitors to "collect" the experiences.

To access Digital Souvenirs, visitors leave their email address or phone number via which they receive a personal link. The link gives them access to a personal responsive web page displaying all their Digital Souvenirs. Visitors can also download the souvenirs directly onto their computer or their personal device.

Digital Souvenirs is fully hosted and managed by Kiss the Frog. The company pays special attention to the privacy of visitors. As part of the General Data Protection Regulation the data is not used for other purposes or stored longer than necessary. Visitors have full control over their data and can delete the data themselves at any point.

Design of Digital Souvenirs
Digital Souvenirs can be customised to match the look and feel of a certain institution or visitor experience.

According to Kiss the Frog, good souvenirs share one or more of the following characteristics:
- enable the visitor to create – a digital experience that triggers creativity and produces an original souvenir;
- have a so-called personal touch, i.e., are unique and personal;
- have an element of surprise: a fun, goofy or unexpected souvenir works well to make visitors smile;
- are location bound: a souvenir captures the moment and thus can only be created in that specific location to enable the visitor to relive the moment.

Dashboard
As part of Digital Souvenirs platform, the museum´s staff has access to an easy-to-use dashboard to look up the souvenirs, view outgoing email, resend bounced emails, manage page content and create email templates.

The DoSeum and digital souvenirs (2020)
The DoSeum is a museum for kids in San Antonio (US), where "interactive fun and hands-on learning come together". The DoSeum offers exhibits, programmes, camps, classes, and field trips designed for all learners, "encouraging young minds to explore the joy of learning through connections to STEM, the arts, and literacy".

As part of their cooperation with DoSeum, Kiss the Frog provided the interactive back and front-end software for a technology upgrade of the *Spy Maker* exhibition. The company´s contribution also included the UX-, interface- and visual design, animation production, software development and on-site installation. *The Spy Maker* exhibition invites children to break codes, build hide-outs, exchange secret messages and crawl through vents as they complete math-based missions to become Master Spy Academy-agents. Throughout the exhibition, visitors come across digital stations which they interact with using RFID bracelets.

According to Kiss the Frog, having a digital framework behind the project is highly motivating for young visitors as it allows for multiple interactive experiences, such as collecting achievements in digital badges, having their photo taken, designing their own avatar. The digital layer is also essential in terms of facilitating the journey and helping to track where visitors are and how far they proceeded with their achievements. In this way, the souvenir is the digital representation of the journey.

The visitor journey
Visitors start the Spy Game with a short, animated introduction and are assigned their Spy specialisation based on three chosen interests. Each screen explains the exhibition and helps them answer the questions. When onboarding the experience, visitors get a Spy Watch (RFID bracelet) and have to complete five missions before they gain access to Agent Headquarters (HQ). Once they are full agents, they can print out their new identity card (a Spy Profile including their name, Spy Name, email address and profile photo), and begin earning badges

	to become a Master Spy and finally to enter the Spy Hall of Fame. Visitors are instructed to scan their Spy Watch to save their progress which is then reflected in the digital souvenir. To track each Spy Watch and store personal progress and results, the museum used Kiss the Frog´s in-house software platform Backstage. DoSeum´s digital souvenirs are the badges that young visitors use throughout the journey. The badge contains the following sections: ● Profile ● Photo op ● DIY Spy Activities (3 links to a PDF with DIY spy activities) The case shows how Digital Souvenirs are smoothly integrated into the digital layer of the exhibition and is part of a broader digital concept.
Benefits & Impact	Digital Souvenirs can increase the online visibility of the museum as they can be shared via different social channels (Kiss the Frog offers full integration with WhatsApp, Facebook, Twitter, YouTube, email and newsletters). Additionally, one of the most important features of the Digital Souvenirs is that they can be integrated in almost any project. A small institution might have one simple photo booth where visitors can generate a well-designed postcard. In larger institutions the creation of digital keepsakes can be totally integrated and made even easier with RFID.
Limits & Drawbacks	● identifying the high point of the visitor journey at which the experience presupposing Digital Souvenirs would be relevant and highly engaging; ● identifying the timing to gather visitors´ email addresses (ideally, after visitors engage with digital content that can generate Digital Souvenirs).
Future Prospects	The product is now mainly used in Kiss the Frog's projects. In the future, the company is looking into making the product available for other digital agencies and museums with a digital department.
Key Take-Aways	Digital Souvenirs are an example of smart integration of a simple technological solution, which works both during and after the museum visit. The success factors of the endeavor include personalised experience: visitors receive a possibility to collect and save the moments which were memorable to them. The digital souvenir creates the possibility of an emotional touchpoint with the museum, which was not produced in a big industrial country, but was created by the visitor personally. Therefore, such souvenirs are likely to be taken home and shared with friends and family.

Kiss the Frog

SPARKLE
case

D ◻ ◻ RS Digital Incubator for Museums

Who | Institutional Profile

Institution	National Galleries of Scotland	Art Museums in Edinburgh
Location	Edinburgh, Scotland
Short Description	The National Galleries of Scotland cares for, develops, researches, and displays the national collection of Scottish and international art and, with a lively and innovative programme of activities, exhibitions, education, and publications, aims to engage, inform, and inspire the broadest possible public. The National Galleries of Scotland comprises three galleries in Edinburgh and two partner galleries in the North and South of Scotland. Its collection of fine art is amongst the best in the world. The three Edinburgh galleries are: Scottish National Gallery, Scottish National Portrait Gallery, Scottish National Gallery of Modern Art.
Ownership	National Galleries of Scotland is a charity registered in Scotland. It is governed by a Board of Trustees. There are up to 12 trustees on the Board at any one time and they are appointed by Scottish Ministers through an open appointments system.
Size	Number of visitors: 2018 - 19: 2 708 179 2019 - 20: 2 366 321 2020 - 21: 116 765

Approach to Digital	Lucy Armitage, Daskalopoulos Digital Producer Christopher Ganley, Digital Content & Design Manager *"We are responsible for commissioning, producing, making and publishing of story-based interpretive evergreen content around the collection and our public programme. The team ensures that the content is published across the Galleries and partner platforms so it is optimised and contextualised for our audiences, whether in-gallery or across our digital platforms. We work across the organisation and use audience research to determine creative approaches and formats to engage audiences with our collection and related stories."* The digital team at National Galleries Scotland (NGS) was established over 20 years ago primarily to develop and manage the organisation's digital platforms, online collection, and public programme content. The NGS digital engagement strategy (2015 - 19) presented the opportunity to develop standalone digital content as part of the programme including serial video and audio content. As well as managing the online collection and related-web content serial multimedia content is still the priority, enabling the museum to tell a range of stories while building audiences across digital platforms and in-gallery.

What | Case

Project Title	Ray Harryhausen	Titan of Cinema Virtual Exhibition Experience
Timeframe	February 2021 – February 2022

Concept & Approach	*Ray Harryhausen: Titan of Cinema* virtual exhibition experience is the NGS first attempt at making a digital exhibition offer running alongside the exhibition. The experience is ticketed and hosted on the museum's website. It was created to allow those who were unable to travel to the exhibition Ray Harryhausen	Titan of Cinema to enjoy an online version from the comfort of their own home as well as exclusive content that is "special" and different. The experience included:

- five specially created films including newly created animation;
- over 150 items from the exhibition including drawings, storyboards, models, posters and behind-the-scenes photographs;
- archive films and objects from Ray's Harryhausen's life and work;
- three specially created 3D model videos;
- four exclusive interviews with guests including Ray's daughter Vanessa, special effects wizard Tom Woodruff Jr., actors Martine Beswick and Caroline Munro, and League of Gentlemen stars Jeremy Dyson and Mark Gatiss.

The exhibition was years in the making, with a cross-departmental project team set up in 2020. This team consisted of members from curatorial, digital and marketing with a project manager assigned to oversee the whole project in late 2020. Over this period the team conducted audience research and ran various in-house idea sessions to ensure the exhibition met the needs of its identified audiences:

- super fans
- culturally active but lapsed
- families
- young people

"Harryhausen superfans" are dedicated fans found all over the world and the museum received early indication that these fans were willing to travel great distances to see an exhibition of Harryhausen's work. However, when the pandemic hit and national and international travel was restricted, the institution faced the prospect that many of these fans would not be able to visit the show.

As the pandemic continued and the galleries were forced to close for two extended periods, National Galleries of Scotland, like many other institutions, considered how it could provide a taste of the exhibition for an online audience.

The exhibition and Smartify
One aspect of the interpretation that the institution had already developed was to utilise the Smartify App to provide visitors to the exhibition with access to additional images, interpretation, audio and video. The intention was to provide a deeper visit for those who requested it, making use of the Harryhausen Foundation's rich archive. This archive was much too vast to be shown in its entirety in the gallery. But via the app it would be possible to delve deeper and offer a richer experience. The team also included in Smartify an audio guide which was narrated by the filmmaker John Landis (a fan and friend of Ray Harryhausen).

The analytics for the Smartify guide showed that the audience for the Harryhausen show was much more international in scope than at any of National Galleries´ other sites. This was particularly apparent during periods when the gallery was closed. During this time the international audience was between 78% and 65% of all users. This helped to deepen the team´s conviction that there was an international audience for online Harryhausen content.

Virtual exhibition
Initial attempts to utilise the existing audio guide and augment it with video footage from the show indicated that the team needed to take stock and look at ways to engage the online

audience. It was found that other attempts to use the video tour format could quickly become frustrating and unengaging for users. Simply trying to replicate the experience of walking around the show was not going to be so easily achieved, especially considering the various interactive elements at play in the exhibition.

The team decided on a different approach utilising the many existing assets created for the show such as: label text, images, video, audio, and the Smartify guide. So, a platform was proposed which would deliver many of the assets in the exhibition alongside a newly commissioned series of films.

These films would look at each of the rooms in the show and examine the themes addressed. NGS´s in-house videographer, who had already made the exhibition film and was familiar with the content, set to work creating five new films. For each of these films the team identified experts who would be a good fit for the content. Due to the pandemic, new interviews were conducted remotely and augmented with additional interview footage that had been shot for the exhibition film.

Various delivery options were looked at, including video only hosting but the team decided that hosting the content on their own site would provide them with an opportunity to invest in web development that would be applicable to the delivery of future paid online content. To this end the institution´s IT team and web developers from Leith set about creating a paywalled section of the NGS website.

"One of the quirks of developing this online exhibition came in the form of tax legislation which meant that in order not to be required to account for non-UK VAT (i.e., the tax requirements of each country that the VEE would be available in) we would also need to deliver a certain number of live streamed events as part of the package. We explored various options before obtaining a subscription to the Sprout Video platform. Sprout gave us the ability to host private, paywalled video content as well as delivering live streamed video. It was a good fit, easy to use and with an elegant and easy to use interface."

Meanwhile the IT Team and Leith delivered the paywall functionality which integrated with the ticketing system Spektrix and gave the opportunity to sell the subscription to the Virtual Exhibition.

With the films in production, the museum used their exiting CMS to create web pages that used versions of the label and wall texts from the show, images of the works on display, film footage from the Harryhausen foundation, and additional copy written for the Smartify guide. Each of these web pages was designed so that it would begin with the film and then follow the path of the show so that users could spend time looking at the images and reading the content at their own pace.

In addition, some bonus content was included in the form of digital animations of Harryhausen models created by Play Dead, who had developed the in gallery digital interactives. These proved to be very popular with users.

Benefits & Impact	One of the main impacts of the online exhibition is that it enabled the museum to reach out to wider audiences during the various periods of lockdown and travel restrictions during the pandemic. While over 80% of users were UK based only 40% of these were from Scotland and 11% of users who accessed the VEE were in the USA. Having the VEE also maintained the visibility of the Harryhausen exhibition during lockdown.

As much of the content was exclusive to the VEE it meant that some users purchased it alongside their physical visit either as a memento of the show, to explore the content more deeply or to engage with the Live Events.

These Live Events also brought in a new audience. This was particularly true of the final event which included contributors with their own following.

The National Galleries of Scotland carried out research into how the sector approaches "digital exhibitions" and how cultural institutions are envisioning the future of digital. Alongside investigation, the report presents the motivations and behaviours of online audiences visiting the NGS webpage in 2021. Below is an excerpt from their report.
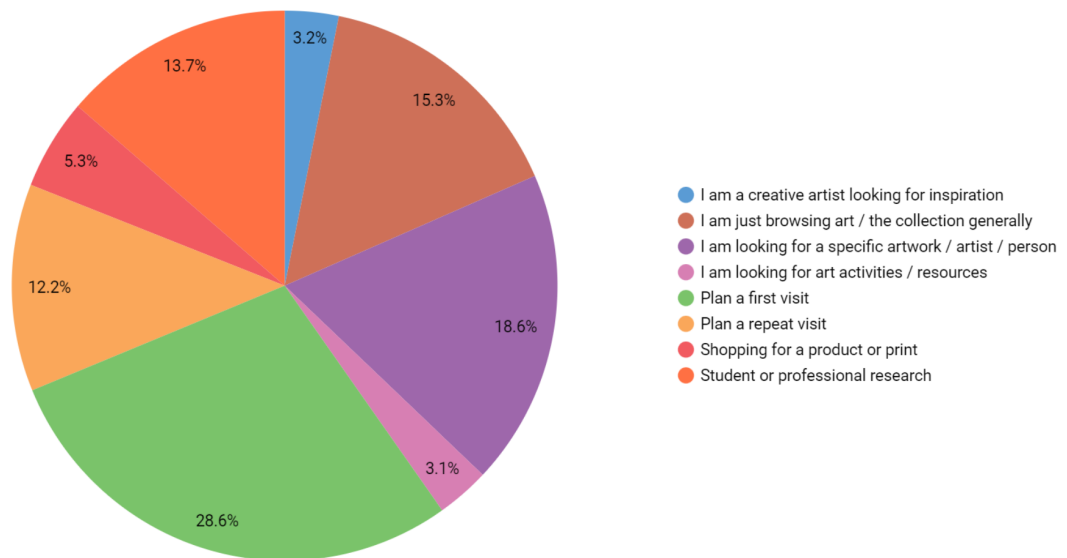
NGS Audiences

Legend:
- I am a creative artist looking for inspiration
- I am just browsing art / the collection generally
- I am looking for a specific artwork / artist / person
- I am looking for art activities / resources
- Plan a first visit
- Plan a repeat visit
- Shopping for a product or print
- Student or professional research

Pie values: 3.2%, 15.3%, 18.6%, 3.1%, 28.6%, 12.2%, 5.3%, 13.7%

FIGURE 1 AUDIENCE SURVEY AUGUST-SEPTEMBER 2021 – REASON FOR VISITING

Legend:
- Edinburgh
- Rest of Europe
- Rest of Scotland
- Rest of UK
- Rest of the World
- Within 1 hour of Edinburgh

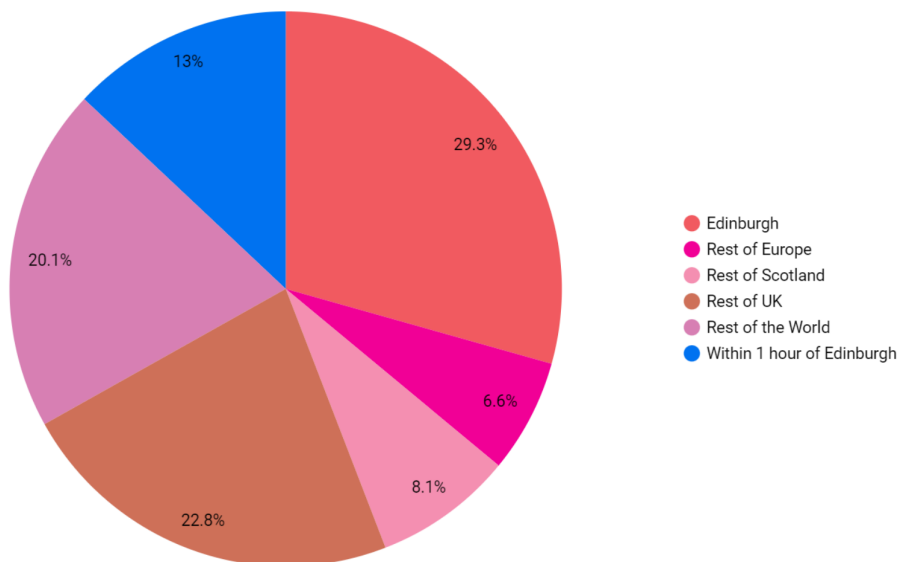Pie values: 29.3%, 6.6%, 8.1%, 22.8%, 20.1%, 13%

FIGURE 2 AUDIENCE SURVEY AUGUST-SEPTEMBER 2021 - LOCATION

Fig 1 shows that most people post-Covid are using the website for practical information to aid a physical visit, which is to be expected now that museums have reopened. However, this is closely followed by people who are looking for a specific artwork / artist (18,6%) or just for a general visit to the website (15,3%). This differs from the March 2021 survey (during lockdown) which revealed the majority (32,8%) were visiting for personal interest, followed by those using our website for student or professional research (24,7%).

Fig 2 shows that digital is expanding reach with 50% of audiences from the rest of the UK and world.

- Tourists: 58% of NGS online audience are Tourists (27% outside the UK). This audience are the "sightseers" and "culture vultures". "Sightseers" are mainly tourists wanting "to do" the NGS and "Culture Vultures" are non-visual arts professionals, sensualists, seeking uplifting or moving sensory experience.
- Locals – 42% of the NGS online audiences are "local" visitors (live within one hour), they align most with so-called "rental hub" visitor profile (early career, educated single people in their 20s and 30s. They are highly active, ambitious, sociable and adventurous in trying new things). They map most clearly to the "culture vulture", "self-developer" and "third spacer" audiences. "Self-developers" are people who want to informally develop knowledge of visual arts.

NGS team knows that:
- Families want remote and pre-visit content
- Young people want a range of media
- Adults want layered content for a deeper dive e.g., video content introducing artists/themes which is under ten minutes (can be engaged with pre/post visit or remotely without visiting). Lectures and talks online which are available beyond the "live" event, audio content that can support in-gallery and as a resource beyond the gallery (on the move / time limited).

This reveals that NGS has a broad range of online audiences and there has been a change in their behaviour. During lockdown, audiences adapted their use of online content for personal interest and there was a demand to stay engaged with museums and galleries. The above supports the priority being given to hyper-local and global audiences across the sector. Global audiences increased, engaging beyond their original goal.

In terms of *Ray Harryhausen: Titan of Cinema* virtual exhibition experience specifically, between March – October 2021, there has seen 974 unique purchases with a produce revenue of £10 040 00. There have been 52 427 sessions with an average dwell time of 5 minutes. Users are from across the world but mainly UK based. The majority of visitors to the exhibition page were via social media channels. Just under half came via email, and 15,9% were direct to the landing page. Harryhausen content was also part of the BBC Culture in Quarantine (free), which may have diluted the paid offer.

There was positive feedback about the exhibition as can be seen in the user quote below:
"By the way, the exhibit is amazing. I wish it could continue to be made available online somehow so I could encourage friends who have missed it to get tickets. But in any case, your museum has demonstrated absolutely that an online exhibition can be every bit as compelling and valuable as a physical one (though different, complementary), and available to a far broader audience. Many thanks!"

Limits & Drawbacks	**Website**: While using their own website, CMS and Spektrix ticketing system has allowed the National Galleries of Scotland to create a re-usable paywall for the site. This came with some usability issues. These were mostly related to the dual basket system, with two website logins causing confusion and frustration for some users. It also meant that the experience looked like the rest of the institution's site. In some ways it was positive, but also meant that the experience was somewhat limited and the team had to rely on existing components which were not always the ideal solution. Using an external delivery method may have provided users with a more unique experience. **Marketing**: *"We were really constrained on what we could spend on marketing as all of the spending came from the exhibition marketing budget. The marketing teams found creative means to spread what little budget we had but further investment in marketing could well have increased the take up, particularly in overseas markets."* **Planning**: *"This project in common with many projects planned during the early part of the pandemic was produced very quickly to fullfil an immediate need. As such the planning time was limited and production was rapid and intense. The project could have benefited from more planning initially. While we did have existing audience research to fall back on early user testing was limited. However, with all these negatives comes a positive. Because we had to move quickly and respond to this immediate need it meant that we tried something, dipped our toe in a market that we were otherwise relatively unprepared for and ultimately gain some valuable insights that can be put to use for upcoming projects."*
Future Prospects	Engagement grew towards the end of the VEE's run and suggested that it could have continued beyond the end date. This indicates that there is a place for a digital version of an exhibition that can be enjoyed by users who cannot make it to the exhibition, or who missed it during its run, or those who wanted to explore the exhibition at leisure after their visit. Take-up and engagement improved after the most high-profile Live Event. This suggested the role that these events can play in driving users to the experience. As the team behind the project underlined, it seemed that some users were happy to pay for this event alone. So, while events were an add on necessitated by tax rules, they eventually proved to be a valuable part of the experience.

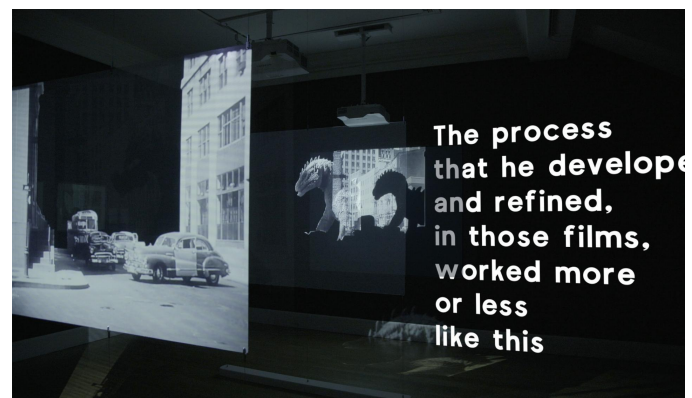|	
	"The digital nature of the experience meant that we could add in content as we went, and the format lends itself to different ways to explore the art on display that are perhaps not suitable in the gallery setting. Not being inhibited by the gallery walls meant that we could explore aspects of the collection that did not find space in the show, and we could certainly have expanded on this."
Key Take-Aways	Key findings from the NGS digital exhibitions research report indicate that "content that is personalised (e.g., museum professionals favourite objects) and bespoke (e.g., content made specifically for digital platforms) has longevity and audience "pull".
	There are three major take-aways of the case: (1) the online package offer was a short-term endeavor, and therefore stimulated people to "visit" the online offers until certain deadline. This created a fear of missing out effect and stimulated to buy now, and not to postpone to a later stage. (2) It makes sense to gather information about the visitors via the website – and not so many museums use this channel so far. (3) It is possible – and recommended – to reach out to international audiences with online content.
Involved Parties	The Ray and Diana Harryhausen Foundation Smartify (app) Play Dead (animation) Leith (paywall) Spektrix (ticketing)
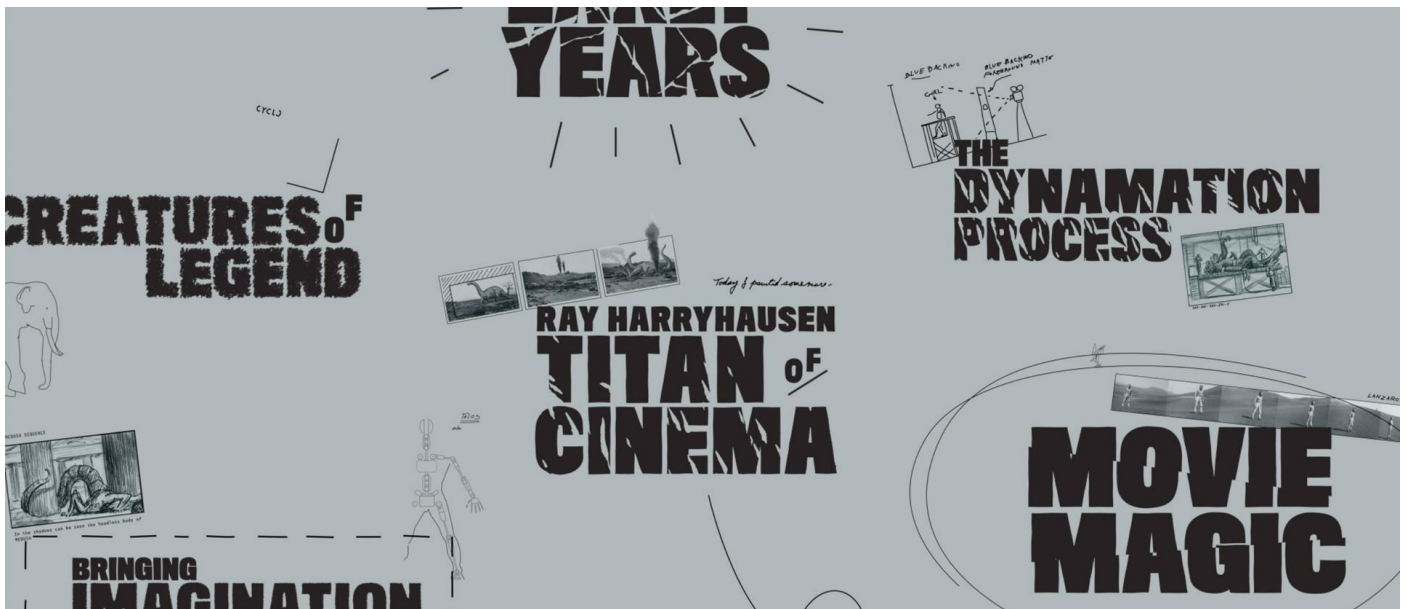
Typography by BOB Design, animation by Becky Manson, images and handwriting from the archive of Ray Harryhausen

Filmed by daysix, animation by Becky Manson

SPARKLE case

 DOORS — Digital Incubator for Museums

Who | Institutional Profile

Institution	DOTDOT
Location	Auckland, New Zealand; New York City, USA; Brisbane, Australia
Short Description	DOTDOT is an award-winning creative studio focused on generating impact through social and immersive experiences. Exploring the boundaries of technology, art and design, the studio creates experiences that are memorable, playful, and interactive. DOTDOT are alumni of the NEW INC (the first museum-led cultural incubator, conceived of as a not-for-profit platform for furthering the New Museum's ongoing commitment to new art and new ideas) and the Mahuki Innovation Lab (Te Papa Tongarewa´s three-year innovation accelerator programme).

Approach to Digital	Kate Stevenson, Founder *"As a rule, we think technology should be invisible so that the benefit of that technology feels more like magic and less like a barrier to engaging with the content or each other. We like to design our experiences to give visitors and audience members a sense of purpose and agency within the context of a work, and, where possible, a shared purpose for all visitors."*

What | Case

Project Title	DOTDOT SOCIAL
Timeframe	Since 2020

Concept & Approach	SOCIAL by DOTDOT was created in 2020 as a response to the Covid-19 pandemic and as a way to address "the need to bring serendipitous social moments and ways to spark real-life relationships into the remote, virtual experience, especially at events". As part of SOCIAL, DOTDOT offers services and formats such as proximity-activated audio, live-streaming avatars, 3D visuals as well as entertaining challenges and game packages. All formats and services are designed to help "attendees connect through play and leave wowed by the experience". During the pandemic, DOTDOT found that their experience of virtual events, performances and conferences was missing the informal encounters one has at real-life gatherings. So, the team put their heads together and drew on the design principles of massively multiplayer online games to create a platform that brought back some of that feeling to online events. Kate Stevenson, Founder: *"The pandemic has impacted the ability of many artists, venues and festivals to connect with a live audience. It's also increased the audience appetite for virtual and hybrid experiences and created the opportunity for new genres to form – which is exciting.* *We recognise there are barriers to working online and that existing platforms do not meet the needs of many artists, performers and cultural venues. So, our aim is to produce a set of tools*

that allow artists, festivals and venues to create a unique virtual space to house a work, with an affordable framework for running and monetising online and hybrid events while building community around them."

The EXPERIENCE BUILDER (developed as part of SOCIAL) will enable artists, arts venues, arts organisations and cultural institutions to create their own hybrid and virtual events, allowing them to reach new audiences and drive new revenue streams from their work.

DOTDOT is currently running a series of collaborative pilots alongside the development of EXPERIENCE BUILDER and has invited New Zealand based interested artists, venues and organisations to participate in an Open Call. DOTDOT is now in the initial stages of their pilots and they are working with two theatres, a film festival, an immersive art exhibition and a cabaret group to iterate and experiment with new audience experiences.

Jalopy Theatre Live Performance Venue
For their project with the Jalopy Theatre, DOTDOT reapproached the way most virtual events and performances are held. As the team highlights, "most virtual events and performances are little more than a zoom call that you pay to attend with little space for memorable experiences or meaningful interactions." The project saw a different approach as DOTDOT designed "a platform for playful exploration, relaxed conversation, and shared experiences worth remembering". This hybrid option developed for the theatre gives audience members the choice to attend in person or virtually.

| Benefits & Impact	The hybrid format got some positive feedback from users: *"I loved this and had a wonderful encounter with a sound artist based in the UK in the space outside the OFA, just like at a 'real' exhibition there. I was amazed at what you were able to create in terms of an immersive space where there was agency and chances for connecting as an audience/participant. "* *"This is the closest I've come to being in a gallery and being with art for sooooo long!! <3"* *"I love the sense of travelling together through the site and in proximity to others"*
Limits & Drawbacks	As Kate Stevenson highlights, the current platform requires a white glove approach to experience design which is why DOTDOT is democratising access to their SOCIAL platform by allowing artists, cultural institutions and arts organisations to create online experiences for existing and new audiences.
Future Prospects	DOTDOT is currently in the development stage of the EXPERIENCE BUILDER tool which will be tested through a pilot programme. Kate Stevenson underlines: "Collaborating with our pilot partners through this work allows us to design a tool that is meaningful for our users, and lets us share our learnings with the wider community interested in the creation of this kind of work."
Key Take-Aways	Kate Stevenson, Founder ● *"The best way to understand it is to try it, so that we create an encouraging atmosphere for audience members who may be new to using new technologies. Community management of your audience is just like real life!* ● *Thinking carefully about the onboarding experience is important for people to understand how to show up and use the platform.* ● *It's important to be able to offer tickets for both events (in person and virtual) through the same platform for ease of explaining a hybrid offering."*
Involved Parties	The project was supported by NYC Media Lab and ASCAP
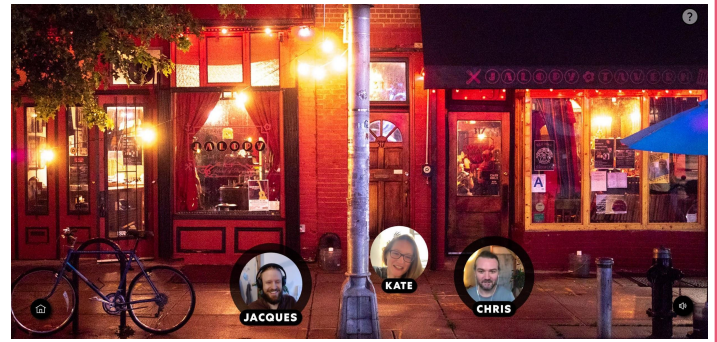
DOTDOT, Jalopy Theatre

What | Case

Project Title	Secret Garden
Timeframe	2021

| Concept & Approach | Secret Garden is an immersive web and physical installation by artist Stephanie Dinkins (created in collaboration with DOTDOT). The work was simultaneously presented as an online experience via New Frontier at Sundance Film Festival, and, as an immersive installation at ONX Studio, in Midtown Manhattan, NY.

Secret Garden invites visitors "to step into a garden and encounter oral histories spanning generations of Black women". The installation represents the spatialised floral estate, where visitors "encounter African-American women with stories to tell - surviving a slave boat, growing up on a 1920s Black-owned farm, surviving 9/11 - and an AI powered by Black women".

Secret Garden also connects its virtual and IRL worlds by visualising participants in the various versions of the project as fireflies in the garden atmosphere. According to Stephanie, this attempt at integrating the virtual and IRL worlds is probably not recognised by most visitors, but it is exciting to experiment with the possibilities of expressive recognition of physical and digital bodies.

Secret Garden is the culmination of the Nokia Bell Labs Experiments in Art and Technology (E.A.T.) residency program that engages NEW INC alumni and Nokia Bell Labs researchers in a year-long collaboration to produce new works of art that are enabled by the latter's technology. Secret Garden is also commissioned by the Onassis Foundation Eureka Commissions.

Over its lifetime the virtual work has been visited over 5 800 times with an average session engagement time of 6,6 minutes. The physical experience was limited due to COVID-19 so people needed to book in advance. 290 people attended the IRL experience over 8 days. |
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Benefits & Impact	It is possible to successfully publish/present the same project in multiple formats simultaneously.
Limits & Drawbacks	Stephanie Dinkins, Artist: *"To make immersive in-person work like this you need time in the installation space to make sure the interaction design and calibration of the technology works for the intention of the work. Luckily with this piece we had the space to work in, the work is stronger for it.* *This project had a very compressed timeline, with technology it's always nice to have time to iterate and reflect. The timeline therefore dictated the technology decisions we made – which turned out to be a useful creative constraint."*
Future Prospects	Secret Garden continues to be shown virtually and IRL. Since the first showing at ONX studio, the installation has been shown at Stamps Gallery, University of Michigan, in a format that mimicked the original installation. Secret Garden is on view at Queens Museum in NY (through Aug 14 2022) as a site-specific installation in the panorama. The piece was also shown as a single channel projection at D'electricity in Detroit in September 2021.
Key Take-Aways	The example of the Secret Garden shows the possibility to present naturally digital content via three platforms simultaneously: (1) as a paid in person installation, (2) as an online Web XR project presented as part of the Sundance Film Festival paywall and (3) as an openly available web project web. This structure was important to lead artist Stephanie Dinkins. She insists her work be made broadly available to people and educational entities that cannot afford the admission to see works like Secret Garden, often presented at expensive festivals like Sundance to the exclusion of average folk.
Involved Parties	Lead artist: Stephanie Dinkins Producers: Stephanie Dinkins, Adaora Udoji, Nokia Bell Labs, Onassis Foundation, NEW INC, ONX Studio Creative production: DOTDOT Platform development: Sidney San Martín Lead developers (physical installation): Danielle McPhatter and Ethan Edwards, Nokia Bell Labs, and Sidney San Martín creative technologists: DOTDOT and Sidney San Martín Technical directors: Sensorium Writers: Stephanie Dinkins, Jade Dinkins Audio production: Hidden Chapel Studios 3D assets: Jessa Gillespie Soundscape: Myda El-Maghrabi Projectionist: Mark Alan Johnson, Mojo Video Tech Inc Cast visual: Brandi Porter, Dayne Board, Erlene Curry, Lisa Sainvil, Melissa Moore, Tianna Mendez Cast audio: Deborah Leon, Joy Sunday, Karen Vaughn, Laura Vandiver, Leah Arscott, Stephanie Dinkins Technical production support: Hard Work Party, Dirt Empire, Noel Paul Special support: Scatter, Creators of Depthkit Production intern: Elizabeth Pérez Dinkins studio support: Neta Bomani

Stephanie Dinkins, Photo: Courtesy of the New Museum
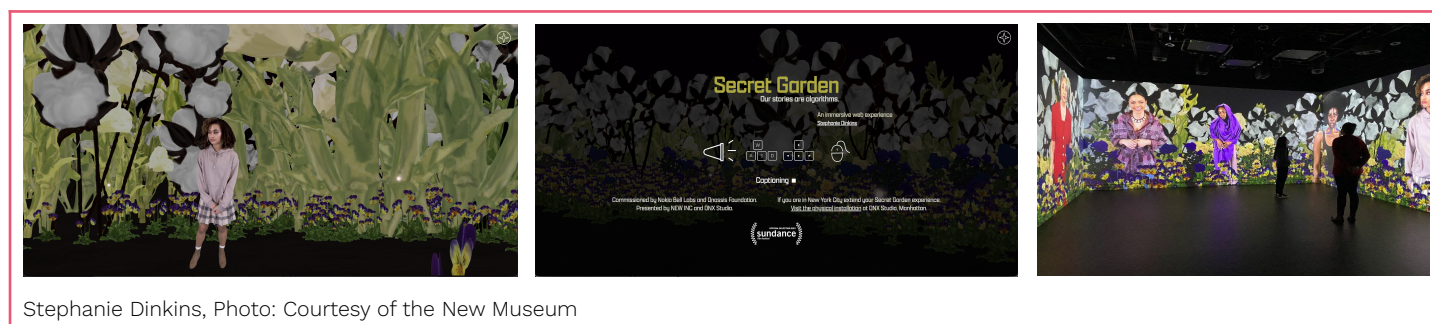
Museums and Culture Cards

Many kinds of networks exist within the sector itself. However, even more focus can be put on actions that maximise the impact of museums, either by allowing the production of new kinds of services or by alleviating the costs and maintenance. Specific technical demands make the exchange of know-how, shared delivery of particular services and/or organisation of specific "back-office" services even more valuable. Not to mention the benefit of transforming competition between institutions into a win-win situation. Many studies show that the synergies rather than competition between cultural institutions can make all of them stronger.

To be more visible museums need to be plugged into relevant interfaces. Therefore networks should also be extended to institutions other than museums, both cultural and non-cultural. Networks with non-cultural enterprises offer advantages that can increase the resources of the museums, as well as make them more recognizable and approachable.

Promotion of museums on the tourism market - either international or national, or better to say both - requires knowledge, investment and capacity that is often too expensive for institutions to manage themselves. Therefore it is beneficial for museums to establish and develop meaningful collaborations, such as with hospitality, tourism and mobility industries, for example, to reach out to more diverse audiences and attract new visitors.

Museums benefit from complementary qualified and connected partners that can facilitate coordination between the activities of museums and other agents - cultural and non-cultural - to create an informed attractive offer and plug it into broader ecosystems. Fruitful developments, such as exchange of information and design joint strategies indeed demand time and effort dedicated on both sides. But such collaborations grant museums access to the bigger and more sophisticated data sets and statistics, as well as ensure a more informed and consolidated position, particularly in terms of joint lobbying and policymaking.

SPARKLE

case

D□ □RS Digital Incubator for Museums

Who | Institutional Profile

|	
Institution	Finnish Museums Association and FMA Creations
Location	Helsinki, Finland
Short Description	Finnish Museums Association (FMA) is the central organisation and information centre for museums in Finland. Its tasks include looking after museums´ interests and advancing museums´ activities. The Association participates in the development of legislation, museum work and the financial status of museums. It also coordinates and acts as a partner in national and international projects, and conducts different surveys and research within the museum field. FMA Creations is a company owned by the Finnish Association of Museums and manages Museum Card operations.
Ownership	FMA Creations is owned by the Finnish Museums Associations and governed by a board made up of museum directors and representatives of the business sector. The owner organisation has stipulated that the Association's Secretary General will also serve as the Managing Director of FMA Creations. This forms a tight administrative bond between the Association and FMA Creations.
Size	The Finnish Museums Association has 213 associates. These manage a total of 418 museums. Any society having legal capacity and practicing museum operations in Finland is eligible for a membership in the association.

What | Case

Concept & Approach	**"Whether you are an art and design admirer, history buff, nature lover, science nerd or looking for something fun to do with the kids, there's a museum waiting for your visit!"** Museum Card (Museokortti) gives access to multiple museums around the country: to 337 museums throughout Finland in 2022, compared to 160 museums in 2015, the year it was launched. The Museum Card was the brainchild of Kimmo Levä, who started as the Secretary General of the Finnish Museums Association in October 2011. He first introduced the concept at the annual museum directors' conference in August 2012 and the final decision to launch the card was made in December 2014. The actual launch followed in May 2015. **Acquisition** Currently (in 2022) the price of the Card is €74 (compared to €54 upon launch in 2015 and €69 in 2020). The 12-month validity period of the Museum Card begins with the first museum visit, so the card will not be activated until a holder uses it to access a museum. The Museum Card can also be bought or extended using the cultural and recreational benefits programme offered by employers. However, cultural benefits are personal, so they can be used only to buy a card for oneself (the law forbids buying gifts with cultural benefits). Two-step acquisition: ● the card can be bought either in a museum or online (visitors can also buy a card on the Museum Card app); ● card holders should register as a Museum Card user (if the card was bought in a museum or from a retailer, one should register as a user by using the form at

within two weeks from the date of purchase; the permanent physical card is to be received by post within two to three weeks).

The mobile Museum Card application
The application was launched in summer 2020, and can be downloaded via App Store or Google Play. The mobile Museum Card can be used alongside the traditional plastic card and independently. It is not just an entrance ticket, but also a handy guide to all participating museums and their offers.

In terms of functionality for users, cardholders can save favorites sites in one app, share museum experiences, give direct real-time feedback, search for and explore new sites. The "Find Museums along Your Route" feature allows users to insert their starting and destination points and discover museums along the selected route. The participating museums, in their turn, receive data on the card holders, such as visits to the museum and zip codes.
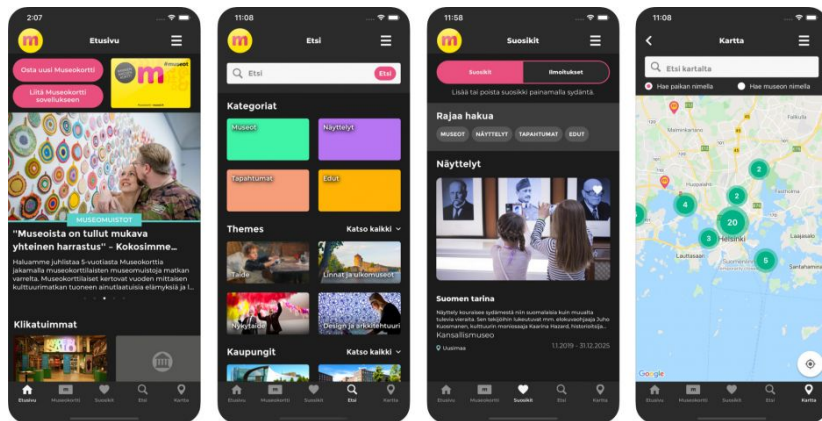

Museokortti

Financial model:
The association decided to limit the risks by setting up a separate company – FMA Creations, first and foremost to handle the business side of the operations as a limited company rather than as an association. It also allowed for a more agile approach in terms of building the team and establishing organisational culture.

Seppo Honkanen, who currently works as Development Director at FMA Creations, explains: "The revenue model is this: we accumulate as much income as possible through the various sales channels and then return it to the museums." FMA Creations invests approx. 25% of the revenue from Museum Card sales in its own operations, such as marketing and communication, system maintenance, technological development, and HR expenses. The rest (approx. 75%) is returned to the participating museums three times a year. The compensation paid to the participating museums is based on visitor numbers and sales volume: the more Museums Cards are sold, the bigger the compensation for the period in question.
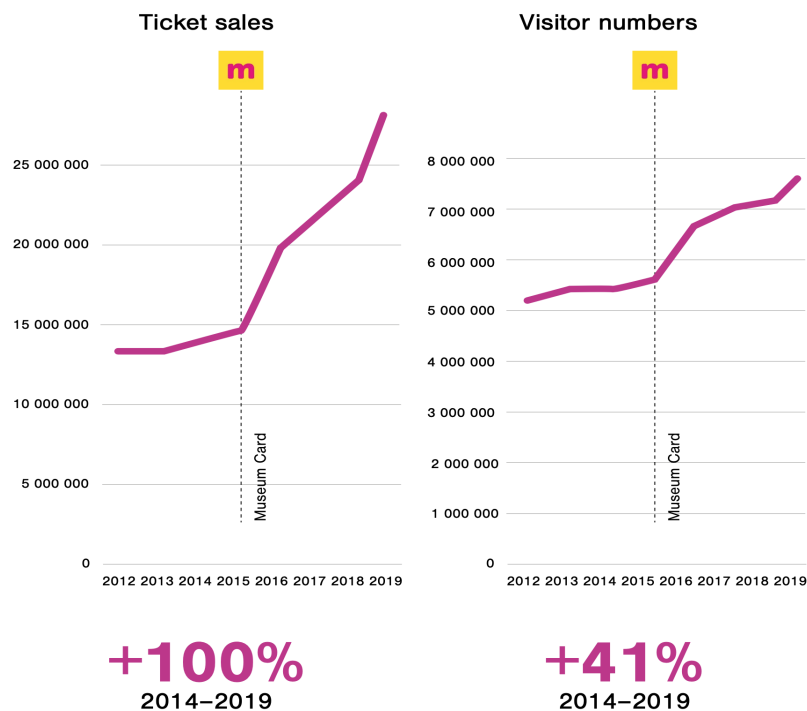

Source: https://museoliitto.fi/museokortti
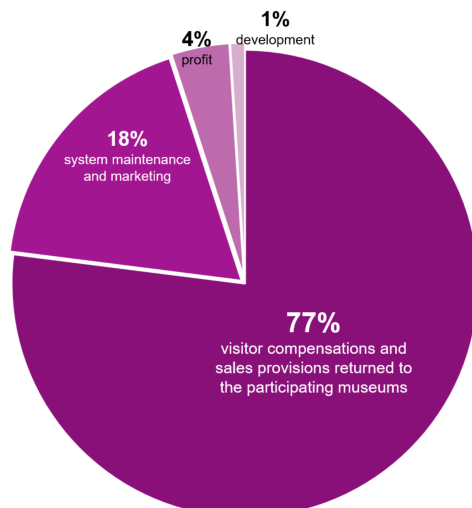
Commenting on the challenge Honkanen also listed some of the issues he had to tackle: How to handle the financial transactions between the museums and FMA Creations? How to build a scalable system that can meet future needs? What should the card look like? How to create maximal visibility for a new product with minimal resources?

Impact on Museums
As early as 2 years after the launch, a study commissioned by the National Gallery showed that 71% of all Finns and residents of the Helsinki Metropolitan Area had heard of the Museum Card. In the same survey, 39% of the residents of the Helsinki Metropolitan Area and 28% of all Finns said that they were considering acquiring a Museum Card.

According to the report and survey by scholars at the Aalto University from the pre-pandemic 2019, the Museum Card has lowered the threshold to visit museums for holders. It also indicated that 84% of all Finns have heard about the Museum Card. Museum Card holders on average visit museums three times more often than people without the card. This affects the pattern of visits, namely an increase in repeat, shorter-term and spontaneous visits. The Card also encourages people to visit museums that they might have never visited otherwise. This does not necessarily mean an increase in unique visitors number, but definitely a significant increase in the number of visits as such. According to the study, Finnish museums have been achieving record visitor numbers every year since the Museum Card launch. According to the Finnish Museums Association, most of the growth comes from Museum Card holders, whose share of all paying visitors in 2019 (a pre-pandemic year) was 35%.

Ticket sales

Visitor numbers

+100%
2014–2019

+41%
2014–2019

Source: https://museoliitto.fi/museokortti

Most notably, the sales of single tickets also grew by 100 000 in 2019. This indicates that the Museum Card does not have a direct negative impact on single ticket sales. Moreover, according to the study, Museum Card holders are often accompanied by visitors who do not have one and pay the regular entrance fee, i.e., buy a single ticket.

The museum card has reportedly grown in popularity despite the COVID-19 pandemic: 200 000 cards were purchased and 70% of the card holders renewed their commitment in 2020. In total, the card brought in €10,1 million for the Finnish museums.
Although in some museums visitor numbers have declined and the growth seems to come mainly from the most popular and attended museums (often situated in central locations in the biggest cities), Seppo Honkanen pointed out that in the pandemic summer of 2020, museum visitor flows shifted away from the biggest cities. So there is no proof and it is doubtful that Museum Card actually strengthens the regional polarisation of museums.

Audience insights
[According to the Finnish Museum Association](), there are indications that people who have not been interested in museums before are now becoming users of museum services. So, the Museum Card helps museums reach new audiences. In terms of demographics, initially the Museum Card's early adopters were predominantly 60+ women. Now the fastest growing customer segment is 30 - 35-year-old city dwellers. New customers were gained during the pandemic, in particular, in the 25 - 45 age group. Worth mentioning that yet another reason for the growth in new and particularly younger audiences might be that the Card has become a popular gift item, particularly for Christmas.
Innovative marketing has been and remains instrumental for reaching new audiences, breaking and expanding the image associated with museums. The Museum Card is presented as a solution to various needs and addresses a number of potential target groups, such as people interested in personal development, lifestyle and premium consumers, people looking for gift ideas, families with children, people on parental leave, consumers who prefer ecological and immaterial products, organizations wanting to reward their employees, international tourists, active seniors, young urban adults, students and other specific groups, and loyal museum-goers.

FMA Creations invests heavily in content and influencer marketing and creative campaigns. Additionally, CRM communication channels and targeted visibility are instrumentalised. In high season, FMA Creations also run big campaigns on traditional media.

[https://museot.fi/en.php]()

Benefits & Impact	The Museum Card has provided museums with a new channel through which to market their services. It has helped improve the image of museums in general, strengthening the trend of museums as their content gained popularity.

However, to ensure that the joint sales, marketing, and communication efforts would pay off, the participating museums also had their part to play in the run-up to the launch, for example to train staff to get ready for on-site sales and organise internal sales promotion campaigns.

The growth in visitor numbers has consequently increased income from ancillary services, such as cafes, restaurants, and stores. According to the report from 2019, Museum Card holders visit museums more often than other visitors, and per annum spend nearly five times more on ancillary services.

Fun fact: a surprising number of Tinder users mention having a Museum Card in their profile.

Limits & Drawbacks	Some museums had to raise their entrance fees. A big share of visitors are Museum Card holders and the compensation museums get from FMA Creations is paid out three times a year. The decision to raise fees is of course, unfortunate from the point of view of those visitors who can't afford the Museum Card and who are not entitled to any discounts. It also decreases the compensation paid to those museums that stick to old pricing. The percentage is defined based on the number of Museum Cards sold, the number of visits and the price level of the museums visited.

Another issue with the way the proceeds is distributed has to do with predictability, as the compensation percentage fluctuates depending on how many cards are sold and how many visits are completed. This causes budgeting challenges for the participating museums.

Conflicting views on income generation crop up within the community of museums, that is growing and getting more diverse (arguably to an extent due to inadequate pricing skills and lack of understanding of price sensitivity).

Some museums feel pressured to join the system given its growth within the sector (even if they don't see the benefits).

The Museum Card has had little impact on the social distribution of museum visitors. One can argue that this is the focus of The Culture for All Service and was not the goal set for the Museum Card. |
| **Future Prospects** | Seppo Honkanen, current Development Director at FMA Creations, emphasized: "It's important to encourage people to visit Museum Card sites across the entire country – both from the perspective of the system's sustainability and the network's level of commitment."
The challenge has been and will remain to reach and engage those people who are outside the core audience and the current cohort of card holders. In terms of further product development Honkanen said: "When considering our future course of action, we should not look towards the museum sector or other publicly funded institutions but rather benchmark those services and concepts that are popular on the consumer market and look at how they approach marketing psychology and pricing."

Although there's still room to grow in the domestic market, the Finnish Museums Association and FMA Creations are already looking into expanding abroad. |
| **Key Take-Aways** | Honkanen described the Museum Card as a leading cultural user interface, surrounded by a growing ecosystem: "It's not just a museum pass, it's a growing service package for culture consumers."
Kimmo Levä believes that the Museum Card has already played its part in pushing museums to view pricing and income generation from a new perspective. "Museums mostly see themselves as a public service and talking about money has traditionally had negative connotations. Now museums are beginning to understand that as public funding is scarce, the only way to get more resources is to take a cue from the business world in how to generate income."
Honkanen, in his turn, also emphasized that the system has been built and managed purely on commercial principles and with zero public funding.

In practice the Museum Card has become an outstanding consumer product and a brand. An important key to the card's success has been a highly motivated, committed, and talented team made up of digital natives following a start-up mentality. |

What | Case

Project Title	Heureka and Museum Card (Museokortti)
Timeframe	Joined in July 2020

Concept & Approach	Heureka is the Finnish Science Centre, whose mission is to introduce the public to science and technology in an engaging and interactive way. Located in the Tikkurila area of Vantaa, Heureka first opened its doors to the public in 1989. It is one of Finland's most popular centres, attracting an average of nearly 300,000 visitors each year. Heureka's operations are subsidised by the Ministry of Education and Culture and the City of Vantaa.

Heureka joined the Museum Card programme in July 2020. Despite the pandemic, Heureka saw 23,3% of visits coming via the card in 2020.

Heureka´s team held a survey asking its visitors whether they were card holders in July 2020 (generally among domestic tourists) and in October 2020 (the period drawing more regional audiences). The survey showed that more than 2% of visitors were museum card holders. The next stage of the survey was held 6 months after Heureka joined the Museum Card and showed that 23% of visits were generated by the card. The results of the study suggested that the card has actually helped the institution to gain new audiences.

Audiences
According to Heureka´s audience insights, the majority of centre´s visitors are families with kids (7-15 year-olds) constituting 26,8% of visitors and 36-45 year-olds – 24,6%) At the same time, the insight into the Museum Card users shows that the majority are seniors (55+ years old) and 30-35 year-olds. The card does not and cannot actually show the statistics for the youngest visitors, because generally the admission to museums is free for children in Finland.

To track and align with audiences´ expectations, Heureka holds regular visitor surveys three times a year. Visitors are asked 30 questions about Heureka´s service and offers, the reason for the visitation, visitors´ expectations and whether they were met. Recent surveys showed that the evaluation of the centre by card users and non-users are in line and both groups highly assess the institution´s offers.

Generally, the institution defines the audience segment brought by the Museum Card as the cultural elite of the Helsinki metropolitan area. Interestingly, the institution is located in the suburbs thus, the card is effective in taking visitors outside of the city centre´s culture clusters. According to Heureka's team, on average, over 70% of entrance ticket remuneration came from the card. Card holders constitute 30% of Heureka's adult visitors and 17-18% of all visitors. In terms of revenue, the average Euro per visitor rate increased from €10-11 before joining the Card to €11-12.

Visits generated by the card per year:
2020 – 23,3% (starting in July, when Heureka joined the Museum Card)
2021 (the only full year with the Card, of which 8 months were full months since the museum was closed due to pandemic from January and until almost the end of April) – 17,2%
2022 (3 months) – 22,8 %

Museum Card and museums
The Museum Card offers the participating institutions access to the dashboard which converts the card holders´ zip codes into the information about the cards´ geography. The dashboard can be browsed by weeks and is transferable to excel for further use by the teams.

Remuneration
Remuneration for the participation in the card programme is split in 3 parts. The highest percentage of it is returned to institutions during the third part of year as the card sales are highest around Christmas.

Benefits & Impact	- From the very start of the programme, the Museum Card shows high sales numbers, even during the pandemic. - The card gives the access to almost all the museums in Finland and serves more like a loyalty card, creating a connection between visitors and institutions. - The card encourages brief visits as visitors feel more free to pop up at a certain exhibition or event. In this regard, the card proved to be efficient in terms of generating repeat visits. - Generally, the Finnish card (unlike its other European counterparts) was born in the time of digital and is accessible in the format of the app which allows for a more convenient evaluation of the museum visits and is efficient for marketing campaigns. - The Museum Card proved to be a strong brand capable of changing the image of museums and popularising them among younger audiences.
Limits & Drawbacks	- Corona restrictions affecting the statistics behind the card; - The card proved to be more usable for people living in cities because of the travel issue.
Future Prospects	As the Museum Card brought new audiences to Heureka, the institution is considering tailoring specific offers for the new audience segments. According to Heureka´s CEO Mikko Myllykoski, the new audience segment (20-25 year-olds) is especially challenging in terms of gaining and keeping their attention. This specific group is to be targeted by events involving peer groups rather than the families who are Heureka´s most typical visitors. Among the options that are being considered, there are so-called card-friendly events which are to be held for card holders only.
Key Take-Aways	According to Mikko Myllykoski, *"to work better doesn´t always mean improving your institutional offerings such as making better exhibitions or improving the cafeteria, but sometimes it is packaging in a right way. The museum card has a great profile, it has a nice design and is really influencing the general opinion about the museums. It raised the profile of the whole field."*
Involved Parties	Both Finnish Museums Association and FMA Creations were generous in sharing information and statistics when Heureka started considering the Museum Card as an option.

Heureka

SPARKLE
case

D **RS** Digital Incubator for Museums

Who | Institutional Profile

|	
Institution	Brussels Museums
Location	Brussels, Belgium
Short Description	Brussels Museums is an independent non-profit organisation that brings together over 100 museums in Brussels. The association aims to enhance the image of Brussels' museums and to ensure their accessibility to all. To democratise and make the city's museums more accessible, Brussels Museums organises numerous initiatives: Museum Night Fever, Brussels Museums Nocturnes, the city passes Brussels Card, the Art Nouveau Pass, Open Museum, the portal site for all things culture brusselsmuseums.be and the museum map. Brussels Museums also carries out important consultation work for its museums and is committed to open museums that truly reflect the diversity of our society.
Ownership	Brussels Museums is an independent non-profit organisation. The General Assembly, in which each museum holds a voice, establishes every year the list of priority projects. The Administrative Committee makes sure that they are successfully completed. A permanent committee makes sure the projects are concretely achieved. Brussels Museums is supported by the Brussels-Capital Region, the two community commissions (French and Flemish), the Flemish Community, the French Community, the City of Brussels, the National Bank of Belgium and by its members.
Size	Brussels Museums is a team of 8 people.

What | Case

Project Title	Brussels Card
Timeframe	Since 2003

Concept & Approach	*"49 museums and many more!* *You can take our word when we say the Brussels Museums and their collections are amazing but the Brussels Card allows you to make up your own mind and take a closer look at* *no less than 49 of them**. Whether you're interested in off the beaten track science, techniques and art museums, contemporary, ancient art and history or simply architectural gems: the Brussels Card covers it all."* Brussels Card is a product of Brussels Museums, the card valid for 24, 48 or 72 hours. The association aims to enhance the image of Brussels' museums and to ensure their accessibility to all. Following this mission, Brussels Card gives free access to 49 museums in Brussels and, additionally, discounts on the best attractions, guided tours, shops, bars and restaurants, free

Brussels Card information guide, free city map and the museum map. You can choose between a standard Brussels Card or add more options: entry to the Atomium as well as unlimited access to STIB public transport and/or limitless use of the Hop on Hop off buses (not available during the pandemic). The holder should use the Brussels Card for the first time within a year of its purchase date. The list of museums and discounts is updated every year (every 1st of February).

The first use of the card doesn't need to correspond to the first museum visit. A cardholder can activate the travel pass for example the day after she visits first museum. But to use public transport, one must pick up first the EventPass.
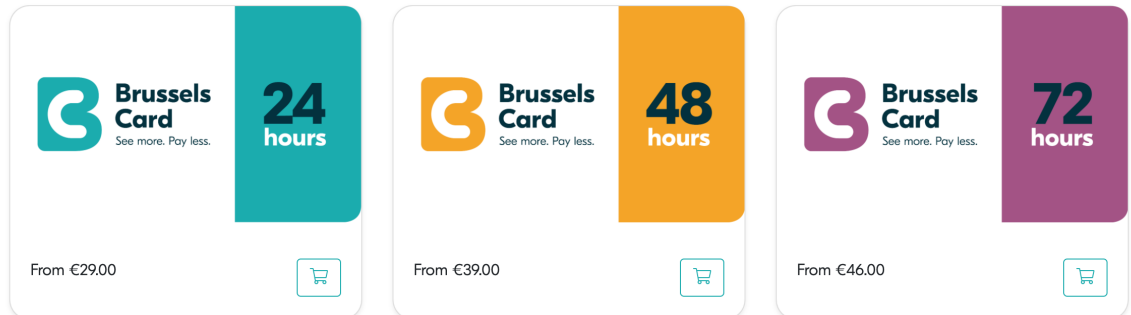
Source: https://shop.brusselscard.be/

When visitors want to use Brussels Card in a museum, they have to scan their card at the entrance. The system keeps track of the number of card-affiliated visits. Museums then monthly invoice Brussels Museums based on an agreed percentage of the entrance price. Museums get a commission on each entrance generated with a Brussels Card in their museum, a certain percentage calculated on their full-price ticket.

The Brussels Card started in 2003 with just one type of card (the 72h card + public transport). In 2011, a 24h and 48h formats were added in response to the demand. This has actually doubled the sales. Further new types of cards were introduced offering combinations with Hop-on Hop-off bus and Atomium. The aim was to make the card more "flexible" in order to respond to the specific needs of the target audience that was only increasing. The backend of the card had to be changed completely: it went from a physical plastic card with a built-in chip to a dematerialised card based on a QR code. This evolution made the card much more flexible to be sold online.

Virtual Brussels Museums
A digital initiative was launched to bring together a series of Brussels museums in order to promote their tangible and intangible heritage to the Belgian and international public. As a response measure to the pandemic and lockdowns, it makes it possible in a long-run to keep trace of these spaces (permanent collections or temporary exhibitions), provide everyone with pre- and post-visit content and overall make museums more accessible to people. Online visitors can access new areas of the museums or spaces generally forbidden to the public such as reserves or restoration workshops.

Virtual Brussels Museums also offers educational or promotional support to the museums, which can enrich their virtual tour with information bubbles (texts, images or videos).

Cooperation with institutions
According to Brussels Museums Director, Pieter Van Der Gheynst, Brussels Card enables the common promotion of 49 museums (number changes every year, 44 in 2020) to a very broad and international public. Every museum in the card is presented on the same, equal level. Bigger museums do not get "proportionally" more attention than the smaller, lesser-known ones – everyone is standing on the same ground within the framework. Integrating less known museums in the cohort allows diversity and broader outreach, both in terms of institutions and audiences. The card invites its holders to explore new museums and new neighbourhoods beyond city center only or their regular routes.

There are two conditions for a museum to join the Brussels Card:
- the museum has to become a member of the organisation;
- the admission to the museum cannot be free. Otherwise, the card would not offer any advantage to its buyers.

In 2019 (pre-pandemic and lockdown year), 65 300 visits have been carried out by the Brussels Card owners. In total, 20 800 cards were sold, which represents an average of 3,14 visits per card. For the moment of 2022, 49 museums are part of the Brussels Card. Most visited museums are the Royal Museums of Fine Arts of Belgium, The Chocolate Museum Choco-Story, The Belgian Comic Strip Center, Autoworld, the Royal Belgian Institute of Natural Sciences.

KEY FIGURES
Brussels museums in a few figures.

KEY FIGURES

4.200.000
visitors in our Brussels Museums in 2019

NOCTURNES 2019

22.000
visitors

MUSEUM NIGHT FEVER 2019

17.000
visitors

Brussels Museums take care of data aggregation and employ it in their operation. The statistics of Brussels Card help to understand better the use of the card and its public. Based on that, the association is adjusting and rethinking every annual edition (prices adaptations, communication focus on specific target audiences, etc.). However, Van Der Gheynst notes that Brussels Museums do not use these statistics so much for its other projects (mostly events) since the public for Brussels Museums events are national while Brussels Card owners are mostly international tourists.

Collaborations
Since the implementation of the card important partnerships have been established with 2 major stakeholders: the public transport company of Brussels (STIB/MIVB) and the Brussels tourism office visit.brussels (for selling the card and for providing the card technology and backend).

visit.brussels plays a significant role in creating links between cultural and other institutions within the city. Guy de Bellefroid, Deputy Director Arts & Creativity, highlights the importance of this network: "visit.brussels believes co-creation will come from developing a strategy, products and services in active collaboration with its partners. The aim of a co-creation process is to gather knowledge, insights, ideas and resources on a certain subject from various sectors. We call on group reflection and creativity from each individual to enable us to move forward together, with a real willingness to encourage discussion, by organising inspiring brainstorming and networking events such as sectorial and general round tables, networking events (visit.brussels days) and via regular consultation of the partners via our product experts, newsletters and our promotion of cross cultural events (Museum Night fever)."

Guy de Bellefroid stresses that visit.brussels is in a constant contact with its partners. Respective experts bring an overview of what is happening in their sector and see what the other partners are organising for joint projects. According to visit.brussels, museums play an important role in the network, because they are one of the main sources of data. Additionally, visit.brussels is offering its partners the opportunity to receive training on various subjects offered by the Brussels Quality Academy. As its name suggests, the Academy aims to help actors from different sectors provide quality work by offering training modules on ongoing activities in Brussels, as well as on its heritage, events, etc. The pandemic called for a review of the training offer and the Academy expanded towards e-learning and online formats. In addition to training courses to improve knowledge about the region and customer experience know-how, the academy is providing additional support in the areas of crisis

management, digital marketing, public relations, social networks, organisation of events, eco-responsible businesses, etc.

In terms of approach, visit.brussels believes co-creation will come from developing a strategy, products and services in active collaboration with its partners. The aim of a co-creation process is to gather knowledge, insights, ideas and resources on a certain subject from various sectors: "The tourist experience in Brussels is everyone's business. Participating makes you a proud promoter and supporter of the region."

visit.brussels is also in charge of the Tourism Barometer of the Brussels Capital region whose purpose is to provide a clear view of the tourism industry in Brussels region via interactive reports. Tourism Barometer holds data providing general overview and structured in sections:
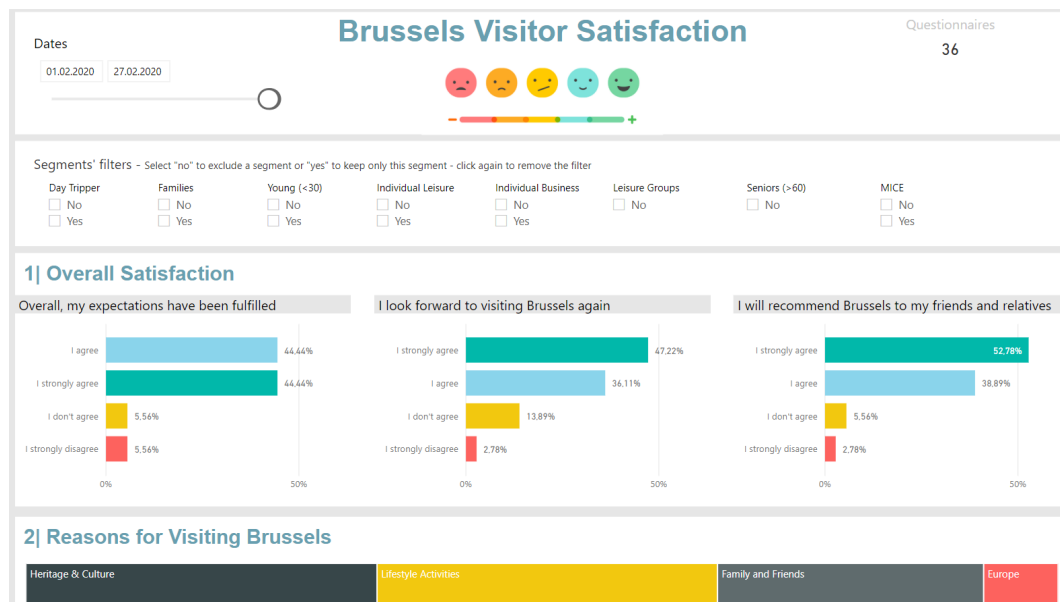
- hotel barometer;
- barometer of overnights;
- private rentals barometer;
- barometer of museums and attractions;
- barometer of guided tours.

Each "barometer" presents "interactive barometer" section with the schematic data on visiting and "data history" section which opens the figures of the previous year. Also, surveys are held to collect data on Brussels locals and those visiting the city. The collected data has enabled visit.brussels to progress in the new segmentation of the target audience.

On the museum's side contributing to the barometer implies commitment to nominate a responsible person from staff, who report to the barometer on a monthly basis, i.e., sends data via e-mail.
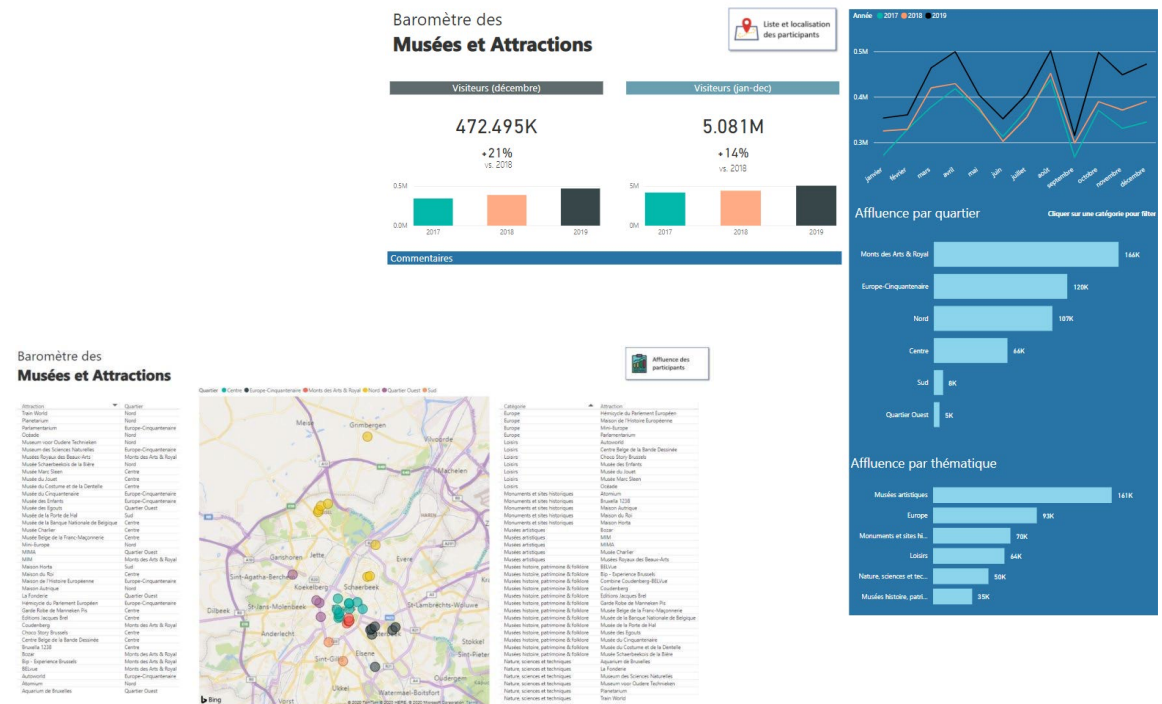
Another helpful tool is the 12-month Visitors' Satisfaction Barometer gives highlights of visit.brussels online satisfaction survey. It is part of the Quality Scheme for Brussels tourism. The main challenge of operating such an extensive exchange system, according to Guy de Bellefroid, is to make the partners understand the aim of this kind of data exchange and encourage museums and attractions to commit.

Brussels Visitor Satisfaction

Dates: 01.02.2020 — 27.02.2020 Questionnaires: 36

Segments' filters - Select "no" to exclude a segment or "yes" to keep only this segment - click again to remove the filter

Day Tripper / Families / Young (<30) / Individual Leisure / Individual Business / Leisure Groups / Seniors (>60) / MICE — No / Yes

1| Overall Satisfaction

Overall, my expectations have been fulfilled:
- I agree: 44,44%
- I strongly agree: 44,44%
- I don't agree: 5,56%
- I strongly disagree: 5,56%

I look forward to visiting Brussels again:
- I strongly agree: 47,22%
- I agree: 36,11%
- I don't agree: 13,89%
- I strongly disagree: 2,78%

I will recommend Brussels to my friends and relatives:
- I strongly agree: 52,78%
- I agree: 38,89%
- I don't agree: 5,56%
- I strongly disagree: 2,78%

2| Reasons for Visiting Brussels

Heritage & Culture | Lifestyle Activities | Family and Friends | Europe

Benefits & Impact	Brussels Card contributes to the visibility of museums and generates additional revenue. It is a product largely promoted amongst the foreigners visiting or planning to visit our city. It also allows to enter a beneficial collaboration with larger stakeholders and benefit from the growing intelligence of the sector, gain access to up-to-date data that further informs decision making.
Limits & Drawbacks	Audrey Tribolet, Brussels Card & Art Nouveau Pass, Project Manager: *"We are depending on many partners, which can be challenging or limiting our development:* ● *website and back-end are hosted by visit.brussels: the process is longer to get the necessary updates;* ● *public transport company: we would like to use the same technology so people can scan their Brussels Card directly in the transport, instead of getting another paper ticket, as it is now.* ● *OTA's selling the Brussels Card: people buying on these websites have to go to the tourist office to redeem their voucher for a Brussels Card. I would like to avoid this extra-step. The solution is to implement API's OTA, but it's complex due to technological and financial reasons.* ● *Museums: we calculate the Brussels Card prices based on the museums' admission fees. We need this information around November-December for every upcoming year, but it is sometimes challenging to get the updated prices from all the museums by this period."*
Future Prospects	Pieter Van Der Gheynst: *"We would like to expand the card's offer by including more museums as well as specific guided tours. The best would be also to have the same technology to scan the same card in the museums and in the public transport, in order to make the Brussels card experience much easier."* Audrey Tribolet: *"We are developing a Brussels Card app. This app will be an ecological and digital alternative to the Brussels Card paper booklet handed out to all cardholders. In this app, you will find all the information necessary to use your Brussels Card in the best way possible: descriptions of museums, calendar of exhibitions, Google maps with all the museums and partners, listing of your favourites, storage of your Brussels Card, etc. Paper booklet will be still existing but based on the success of the map, we might stop using it in the future."*
Key Take-Aways	Brussels Card is a two-fold endeavour that helps to put the museums on the cultural map of the city and make them more visible and accessible for visitors but also creates an ecosystem for the participating institutions enabling the productive cross-institutional exchange.
Involved Parties	visit.brussels and Brussels (STIB/MIVB) are the official partners of the Brussels Museums and Brussels Card.

SPARKLE
case

D □ □ RS Digital Incubator for Museums

Who | Institutional Profile

Institution	New York Public Library, Brooklyn Public Library, Queens Public Library
Location	New York City, US
Short Description	In 2018, The New York Public Library, Brooklyn Public Library and Queens Public Library launched a collaborative program Culture Pass whose mission is to create a way for people to access the museums and libraries. Culture Pass is available for free and is a city-wide initiative, based on the collaboration of the three public library systems.

Approach to Digital	Culture Pass relies heavily on digital technology. Passes are reserved online and can be downloaded and presented on a tablet or phone (or printed, if desired), at participating sites.
	During the pandemic, the libraries worked with cultural partners to offer virtual programming, providing library patrons with a wide range of cultural opportunities accessible from home.

What | Case

Project Title	Culture Pass
Timeframe	Since July 2018

Concept & Approach	Within the Culture Pass programme, using their library card, New Yorkers can reserve a pass and get free admission to dozens of NYC cultural institutions, including museums, theaters, concert halls, historical societies, heritage centres, public gardens and more. The pass can be reserved on the website by logging in with the library card information and searching for available passes by date or venue. To qualify for a free public library card in New York City, a person must be a resident of New York State, work for a company or go to school in New York City.
	Passes are released one month in advance on the first of every month. One person can reserve one pass per cultural institution per calendar year and have four active reservations at one time. Having four active reservations will block a cardholder from making additional bookings for future dates until the date for one of the active reservations has passed. If users reserve a pass but do not use it, they will not be able to book for that institution until the next calendar year.
	Currently, Culture Pass cooperates with 73 cultural partners, among which American Museum of Natural History, Brooklyn Botanic Garden, Brooklyn Museum, Cooper Hewitt, Smithsonian Design Museum, The Jewish Museum, MoMA, Second Stage Theater, Solomon R. Guggenheim Museum, Whitney Museum of American Art and more. Expansion happens both ways: either the institution finds its own way to Culture Pass or receives an invitation.

The terms of cooperation with cultural institutions are based on:
- number of free passes per month;
- management on the institution's side.

In the months leading up to the suspension of the pass-lending service due to Covid-19 in March 2020, Culture Pass was developing rapidly, expanding geographically and diversifying its assets (performances and live events). As part of its evolvement, Culture Pass is expanding geographically, bringing on board institutions located across all five boroughs of New York City and focusing on adding more sites in the outer boroughs, outside of the city's densest cluster of cultural venues in Manhattan.

Outreach

Culture Pass' outreach strategy targets people from so-called Concentrated Disadvantage areas, as defined by the University of Pennsylvania Social Impact of the Arts Project's 2017 study *The Social Wellbeing of New York City's Neighborhoods: The Contribution of Culture and the Arts*. The study found that, more than any other factor, distance from Midtown Manhattan is the strongest predictor of cultural engagement rates, suggesting that the time required to travel to and from cultural venues is a primary barrier. This is especially true at a time when lower-income populations are being priced out of the most central areas. As museums and other cultural institutions tend to be concentrated in the central parts of the city, it is harder for people from remote areas to get to them. To still reach these people, Culture Pass is not only tackling the cost barrier by providing the free access to cultural institutions and increasing the awareness of what is available to people but working to add new sites in neighbourhoods across the city to ensure that passes provide access close to home, wherever New Yorkers live within the city. More efforts are will be put in social media and marketing campaigns to ensure the Pass´ visibility.

The libraries aim to provide equitable access to available Culture Passes by giving partner sites the option to set aside up to 50% of their offer for people living in ZIP codes within areas of Concentrated Disadvantage. As demand for passes is high and some sites' monthly allotments are claimed within a few days or even hours of being released at the start of each month, this gives people living in disadvantaged areas more time to make reservations, providing greater flexibility in planning.

The institutions´ visibility

The Culture Pass programme is a network that adds visibility to institutions that are beyond the radar due to geographical or topical reasons. The programme highlights also smaller and more-niche museums.

Unlike, for example, museums, library branches have the advantage of being present physically in almost every neighborhood in the city. To leverage this, Culture Pass works to activate the library staff and encourage them to help spread the word about the programme.

One of the examples of this is the Book Display Contest. Held from October to November of 2021, it comprised participation of 140 library branches of The New York Public Library, Brooklyn Public Library and Queens Public Library. As part of the contest, librarians created displays interpreting the broad theme of Arts & Culture. Some of the displays were models of the neighborhood, little cityscapes that included local cultural sites. Alongside bringing local cultural institutions in the spotlight, the event helped to spread the information about Culture Pass.

The influence of the pandemic

As a result of the 2020 pandemic and the subsequent restrictions, the Culture Pass service was suspended for just over six months, from mid-March through September of that year. The service returned in October, with a significantly reduced number of passes due to restrictions put in place by the State of New York that only allowed museums to operate at 25% of their normal capacity; theaters would remain shuttered for another year, until the autumn of 2021. At the same time, the demand for the passes was also significantly lower than before the pandemic, as people were less willing to participate in indoor public activities, and less likely to travel longer distances for leisure. Before the pandemic, during the average month, the programme saw around 4 500 - 5 000 reservations. Reservations have been rising consistently in recent months, and Culture Pass saw its highest number of active monthly reservations in March 2022, with just over 3 800. It is anticipated that pre-pandemic levels of service will be reached very soon, within the next several months.

	Audience
	Surveys of Culture Pass users reflect the findings of the Social Impact of the Arts Project's study in a number of key ways. Patrons who use the service were most likely to come from households without children, and were likely to already have a high level of interest in cultural activities. While word of mouth, library websites, mass media, and email were all important channels though which people reported to have learned about the Culture Pass, the most common way for patrons to find out about the service was via library signage or by speaking with a librarian, further underscoring the importance of staff engagement and activation of branch libraries in promoting the service. While actual rates of cultural engagement in areas of Concentrated Disadvantage tend to be lower, surveys of library patrons show that there is not a lack of interest in museums, theaters, and other cultural venues. Rather, it is a lack of time, money, and awareness that prevents people from taking advantage of New York City's rich collection of cultural resources. Culture Pass aims to address not just the cost barrier, then, but to address the convenience barrier as well by continuing to build up its network of partner sites in neighborhoods across the city, especially in or near lower income areas.
Benefits & Impact	A survey of Culture Pass users in 2019 showed the program´s success in expanding the cultural awareness and opportunities of its participants, with • 78,3% reporting that Culture Pass enabled them to visit more cultural sites than they would otherwise have been able to that year; • 74,6% indicating that they visited an institution they'd never been to before; • 57,3% reporting to have learnt about cultural institutions they were unfamiliar with through the Culture Pass programme; • 43,9% of respondents reporting having visited a cultural institution in a borough other than the one where they currently lived. In terms of positive effects for participating institutions, Culture Pass appeared to be an excellent word-of-mouth engine, with • 93,7% of patrons reporting that they told friends and family about the institution(s) they visited; • 44,3% of visitors making purchases on-site during their visits at cafes and gift shops (while Culture Pass facilitated free admission); • 20% returning to a site they first visited with Culture Pass and paid admission to visit again; • 6% of respondents reporting purchasing a membership after visiting an institution with Culture Pass. When asked to rate the likelihood that they would recommend it to a friend—perhaps the truest indicator of success—Culture Pass received an average score of 9,1, reflecting a very high rate of satisfaction across the board.
Limits & Drawbacks	Brendan Crain, Manager of Culture Pass New York *"Regarding a key limitation for Culture Pass, I think space is always the big one. Museums are physical places, so any conversation about providing access always bumps up against this reality in one way or another. Our partners are generous in providing free access, but we also understand that no one is working with an unlimited supply!"*
Future Prospects	The Culture Pass founders are looking into adding more programmatic diversity, which is event-based programming formats such as live music, dance, theatre. With this, the Pass will provide more varied ways of experiencing and engaging with arts.
Key Take-Aways	• While cultural engagement rates vary, there is a high level of interest in participating in cultural activities across neighbourhoods of different socioeconomic status. Low cultural engagement rates in a given area do not necessarily indicate a lack of interest, but rather a lack of access. As such, Culture Pass works to address a wide range of barriers, not just cost. • As institutions with a high level of trust, public libraries are well positioned to help facilitate access to museums, performance venues, and other cultural sites that people may not be familiar or comfortable with. Libraries are embedded in communities, and their staff are trusted local sources of information.

	● Reaching audiences that face multiple barriers is a long-term challenge with no easy solution. It requires sustained engagement, and investment in promotion and awareness building.
Involved Parties	Support for Culture Pass is provided by The New York Community Trust, Charles H. Revson Foundation and Stavros Niarchos Foundation. Virtual Community Programming series is supported in part by public funds from the New York City Department of Cultural Affairs.

Culture Pass

Crowdfunding

The dependency on public sources (very often not sufficient for all museum's needs) and the outbreak of the Covid pandemic have triggered the development and popularity of crowdfunding among cultural institutions around the world.

In a simple definition, crowdfunding is a collective effort by people to support and finance new projects from other people or institutions. In this context, the concept of "crowd wisdom" plays a special role in financing cultural initiatives as it is the people (or crowds) who have the possibility to decide which project to support from the scope of presented opportunities.

Although crowdfunding is nowadays strongly related to digital tools and online platforms, the concept has existed before internet (i.e. the pedestal of the Statue of Liberty was financed by a call for donations in newspapers in the U.S.). But indeed, digital tools for communication such as social media play a key role in the success of crowdfunding campaigns.

Models and types: crowdfunding can be summarised in four main models: equity, lending-based (with financial return), donation and reward-based (without financial return). The last one is the most common model used for cultural projects.

On the other hand, today it is possible to distinguish two main types of crowdfunding platforms: "All-or-Nothing" (AON) = the collected money goes to the project only when 100% of the value of the goal has been achieved. If the collection doesn't reach the goal, the money is returned to the donors.

"Keep-it-all" (KIA) = the project can save the money regardless of whether the goal has been achieved.

Platforms: some of the most popular crowdfunding platforms in the cultural sector, and specifically for museums are: Crowdfunder, JustGiving and Indiegogo. Other platforms, for all type of cultural related projects in Europe are Ulule (France), Cultuur fonds Tilburg (Netherlands), Verkami (Spain), Startlab (Slovakia), BeCrowdy (Sweden), Crowdculture (Italy), Goteo (Spain), Hooandja (Estonia), Derev (Italy). However, research made on crowdfunding platforms has found that the number of successfully funded cultural and creative projects is higher when the platform is not dedicated exclusively to cultural and creative projects.

Crowdfunding

Cost: crowdfunding platforms commonly keep a share of the total amount of funds pledged and/or take a small transaction fee per donation. The specific amount and percentage is different on each platform. However, it is also possible to find some models with no platform fee (eg. Crowdfunder).

Benefits: expert support and coaching when launching campaigns; the ability to integrate the museum logo and branding within the functionality of the platform; branded microsites or unique pages to help supporters feel like they never leave the museum website; easy set up (target, deadlines, etc.).
Crowdfunding can help cultural institutions involve their audiences in the projects at an early stage generating a sense of ownership and belonging among audiences. It can also be a financial alternative for those projects that are unsuitable or unattractive to conventional funding bodies. It helps to assess the demand for a project in advance, before any other commitments. Finally, many crowdfunding platforms have extra funding available for projects aiming to have a positive community impact.

Tips and aspects institutions need to consider while launching crowdfunding campaigns:
The more focused and singular the purpose of the campaign, the higher are the chances of attracting donors who identify themselves with the cause and want to support it.
Funders are more likely to contribute in the first or last weeks of the campaign. Also, the closer a campaign comes to the goal the more likely it is to reach that goal. In this context, the use of a countdown tactic is highly recommended to create a sense of urgency by clearly stating the amount of days left and money raised.

Providing unique rewards (i.e. invitations to exclusive events) can inspire people who wouldn't normally contribute and at the same time persuade those who already do it to give even more. Building an emotional connection through public engagement is a key element that can make donors feel like they are part of the project.

Crowdfunding

Teaming up with other arts/ cultural venues, brands and/or influencers helps to promote campaigns among potential audiences on relevant social and digital channels.

An integrated communications plan that spotlights the chosen platform and shares the funding message and goals via interaction channels of relevance to your audiences is highly efficient. Aiming for information transparency improves the platform's operational performance.

Partnerships with other platforms can also offer Match Funding (funds that are set to be paid in proportion to funds available from other sources commonly on a match ratio of 1:1), or matching gifts on the condition that the institution raises a set amount of money before the matching grant is issued. These formats are of help to add a stronger sense of urgency and excitement among donors.

Museum Networks and Climate Action

The Network of European Museum Organisations (NEMO)

The Network of European Museum Organisations (NEMO) was founded in 1992 as an independent network of national museum organisations representing the museum community of the member states of the Council of Europe. Together, NEMO's members speak for thousands of museums across Europe. NEMO ensures museums are an integral part of European life by promoting their work and value to policymakers and by providing museums with information, networking, and opportunities for cooperation. NEMO focuses on four values (social, collections-based, economic, and educational values) and two transversal themes (professional development and digitalization) that are important for the museums to position themselves and develop in the present and in the future. You can read more about our mission in NEMO's policy statement.

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NEMO's advocacy

A key element of NEMO's role as the European museum network is advocating for the sector at EU level. NEMO liaises with European policymakers and EU Institutions in all areas relevant to museums. NEMO produces recommendations and cooperates with partners in the European cultural field to make their demands heard. The organisation also help its members build successful advocacy campaigns and supports museums in making an impact on various sectors. In light of the invasion and subsequent war in the Ukraine, NEMO is currently collecting support actions organised by European museums for Ukraine, . With the onset of the COVID19 pandemic in Europe, NEMO launched two surveys among museums in Europe to evaluate the impact of temporary closures and other consequences of the pandemic and develop policy recommendations. Museums and their organisations used those recommendations, the data collected, and the gathered examples from colleagues across Europe to advocate their role in the pandemic response and their position when it came to re-opening and serving their communities.

NEMO also made the connection between the pandemic and other ongoing crises, such as the climate crisis. As explicitly stated in the report about the consequences of the COVID19 pandemic in the European museum sector: "NEMO's recommendations join a chorus of others who have recognized for a long time already that our systems require review and restructuring in order to weather future storms. Moving forward, new measurements of success should be considered in concert with the ways in which museums responded with solidarity and support for their community's mid-crisis. We must seize this moment of reflection and finally take the courage to look beyond our standard tools of assessment and consider the eudaimonic value of museums." It is paramount that we depart from old value system failures that have placed profit above people and the planet.

NEMO and the climate crisis

In 2019 NEMO launched the Museums for Future initiative at its annual European Museums conference, „Museums 2030: Sharing recipes for a better future". Since then, NEMO has invited experts to lead capacity building programmes with the aim of supporting the sustainable transition of museums, both for their members and for the sector at large. NEMO is a member of the Climate Heritage Network (which mobilises arts, culture & cultural heritage for climate action and includes over 70 other organisations) and an ambassador for the European Climate Pact. In 2020, NEMO took part in the Voices of Culture structured dialogue on cultural heritage and the Sustainable Development Goals. NEMO collaborates with other similarly focused organisations and networks and joins their efforts. For example, NEMO is a signatory of the Bremerhaven Declaration, which was the deliverable of a summit which gathered cultural heritage professionals to discuss their potential climate activism and impact. NEMO also spoke on sustainability at the "Ask your Museum! Ask your Library!" conference in 2021, where it was credited for "bringing the conversation about the SDGs to Museums in the Balkans" in the years prior.

Elements central to sustainability have been present within NEMO's core values before 2019. The focus has sharpened since then, but a sustainable transition of our societies and our museums requires a holistic approach, where all aspects of what it means to be sustainable are developed. To that end, NEMO has been a long-standing advocate for the social value of museums, promoting their contribution to different social agendas such as health, tolerance, education, and democracy.

What can museums do in response to the climate crisis?

Culture is a change-maker and museums are highly trusted institutions with unique access to public discourse and limitless opportunities for engagement and change-making . Museums have the potential to reach a wide-ranging audience, through targeted exhibitions, special events, and educational programmes. They have the platform to communicate the realities and consequences of climate change specific to their region and inform their community about how to take proactive and adaptive measures.

- **Telling stories:** Museums can connect climate history and information to local experiences/environment, develop stories that make the information more approachable, and offer practical information that give audiences the opportunity to take action in light of what they learn.

- **Supporting youth:** Museums can support climate activism and mobilisation by inviting young people into their spaces, providing workshops that address their concerns, or giving activists a space to tell their own stories.

Secondly, museums can lead by example by renovating their structures and transforming their operations under the guidance of sustainable principles. This has the immediate impact of reducing emissions, and serves as inspiration. Museums should evaluate every aspect of their operation and find opportunities to become more energy efficient and expel less carbon emissions.

- **Renovation:** Museums can re-evaluate their buildings, find resource deficiencies that can be improved upon and invite new ideas from consultancies with a focus on sustainable retrofitting. The museum cafés and grounds should not be overlooked: they can be repurposed to support local biodiversity and become an in-practice educational exhibit of their own.

- **Transformation:** When working with service providers or planning new exhibitions/events, sustainability should be a selection factor. The sources of funding must be given special consideration. Museums must avoid green-washing and accepting money from donors who engage in environmental degradation.

Secondly, museums can lead by example by renovating their structures and transforming their operations under the guidance of sustainable principles. This has the immediate impact of reducing emissions, and

serves as inspiration. Museums should evaluate every aspect of their operation and find opportunities to become more energy efficient and expel less carbon emissions.

- **Collaboration:** Museums can connect through networks to discuss challenges related to climate change and exchange solutions. They can form valuable partnerships outside the sector that will encourage changed and more conscious behaviours.

- **Supporting the community:** Museums can seek out creative ways to support their community in times of crisis, e.g., many museums donated masks during the pandemic, others have opened their doors to wildfire evacuees.

How are museum networks helping museums address climate change

While there are many incredible examples of museums transitioning to accommodate the Sustainable Development Goals or comply with the Paris Agreement, there are still museum professionals that are unaware of the extent to which climate change will impact their daily work.

To start with, the studies, calls, toolkits, trainings, etc. produced and/or disseminated by museum networks spread awareness and create opportunities to develop skills and network. These resources are brimming with brilliant examples and ideas for museums at every level of their sustainable transition. Additionally, these shared resources and collected examples aid in shifting the narrative of distance between the culture sector and climate change. Museums should be recognised as facilitators able to mitigate and fight climate change rather than receivers or 'victims' of its consequences.

Ultimately, the impact of both shifting the narrative and knowledge/resource sharing will rely heavily on networks. The importance of networks is further evidenced by the experience of the COVID19 pandemic when museums benchmarked their response to the pandemic and were able to better advocate for themselves based on the experiences and actions of their colleagues across Europe.

By simultaneously changing the way organisations operate and addressing the hearts and minds of audiences, museums can inspire new solutions and encourage different behaviours. It is important to start with grounding our goals and focusing on multiplying our impact. We have limited time to make this transition and leave our children a habitable planet. Fortunately, there are more and more museums offering inspiring examples of how to communicate about the climate crisis to communities and transition towards being more sustainable. It is still only the beginning of the sector's potential.

NEMO's plans for the near future include:

- **Informing:** NEMO will continue providing the museum community with relevant information and direct them towards organisations, studies, webinars and other resources. NEMO will continue multiplying the work of our partners and bringing the topic forward during speaking opportunities.

- **Training:** To provide the necessary tools and skills and address museum professionals at different levels, NEMO will dedicate a minimum of one training and one webinar per year on a theme relating to the climate and sustainability.

- **Reflecting:** In recognition of the ecological footprint that is associated with operating a European cultural network, NEMO is committed to minimising its emissions, by continuously reviewing our standards regarding event travel, office activities, and awareness building measures.

- **Evaluating:** On Earth Day 22 April 2022, **NEMO launched a survey** to evaluate the status quo of European museums' transition and journey towards sustainability in a time of climate emergency. Museums can participate in [NEMO's Museums in a Changing Climate Survey](#) to help formulate strong policy recommendations for a green museum sector. The survey is open until 3 June 2022.

Every sector will be dramatically affected by climate change. Museums need not act alone but collectively advocate and adapt to this unequalled challenge. Using the data collected in the above-mentioned survey, NEMO will analyse the status quo of European museums as they face the challenges posed by the climate and develop sustainable solutions. With the input of museums, NEMO will develop recommendations for policy makers and help steer the sector towards a sustainable future. This data will form a basis for proactive intervention by Europe's museum network.

NEMO would like to acknowledge and thank member MUSEUM BOOSTER for hosting the 2022 Museums in a Changing Climate survey, as well as the multiple partner organisations and NEMO members who dedicated their time and expertise to each creation.

Elizabeth Wilde

Policy Officer, The Network of European Museum Organisations (NEMO)

Making sense of digital within cultural organizations

Five decades of digital technology have influenced the shape of a museum's physical space, how its collection and/or set of experiences are communicated and interpreted, and its relationship with its workforce and the communities it serves. Museums have entered an era of 'the post digital' or a period 'where digital is managed normatively, and where digital pervasively becomes innate within a range of operations and definitions within a museum' (Barnes, 2018). Digital has shifted from something we think about to something we understand, manage, use, and create across a myriad of roles and responsibilities.

While digital has permeated and disrupted the concept of a museum, we are not yet living in the future described within the pages of Minority Report or Ready Player One. Rather, digital is subtly impacting our everyday communication and collaboration practices. In digitally augmented and digital-first spaces, we must work harder at being human and intentionally consider what is needed to foster a sense of belonging, meaningful connection, and inclusive conversations. Social, technological, environmental, economic, and political drivers and forces require cultural organizations to:

- Rethink new ways of working;
- Reimagine their digital ecosystem and
- Reframe digital community practices and processes.

This shift goes beyond an understanding and cultivation of digital competencies. A new approach to digital literacy development is essential to help support cultural organizations along their journey towards maturity, transformation, and renovation. Digital literacies are defined as 'capabilities which fit an individual for living, learning, and working in a digital society. Digital literacy looks beyond functional IT skills to describe a richer set of digital behaviors, practices, and identities' (Jisc, 2014).

Defining, improving, measuring, and embedding digital literacy

In September 2017, the 'One by One' research project was initiated to help museums of all sizes in the United Kingdom define, improve, measure, and embed the digital literacy of their staff and volunteers in all roles and at all levels. The first iteration of 'One by One' was funded by the Arts and Humanities Research Council (AHRC) and led by the University of Leicester in partnership with Culture24, together with a range of museum and academic partners: National Museum Wales; National Museums Scotland; National Army Museum; Museum of London; Derby Museums; Royal Pavilion and Museums Brighton and Hove; CAMEo (the Research Institute for Cultural and Media Economies), University of Leicester; and the Institute for Employment Research, University of Warwick.

'One by One' is now in its third iteration and is a multi-partner international initiative, bringing together cultural organizations, policy makers, academics, professional bodies, support agencies, and communities of practice, to build digitally confident museums across the United Kingdom and the United States of America. 'One by One' adopts a **person-centered**, **context-based** and **practice-led** approach to digital transformation in museums, grounded in the idea that digital literacy must start with the individual, not with the technology.

'One by One' takes an interdisciplinary approach to qualitative research – drawing together design thinking, agile practices, and management theory with ideas from organizational ethnography, museum studies and the digital humanities. Through one of the research tracks followed during the three iterations of 'One by One',the 'Take CARE to be CALM' approach surfaced - a life-centered framework to develop fit-for-purpose digital mindsets, skill sets, and tool sets.

Taking 'CARE' to be 'CALM' while leading in the digital age

As a 'One by One' researcher, I identified eight elements or conditions for the development of individual digital literacy and advancement of organizational digital maturity, transformation, and renovation. I use the acronyms 'CARE' and 'CALM' to summarise these elements. The 'CALM' elements emerged from the data in the first iteration of 'One by One' while I was embedded in the National Army Museum and the Museum of London. The 'CARE' elements emerged from the data in the second iteration of 'One by One' through our partnership with the Smithsonian Institution.

Combined, the elements of the 'Take CARE to be CALM' approach form a contextual, holistic, purposeful, and empathetic scaffolding for the design, implementation of, and analysis of digital activities.

- C — **Communicate:** The ability to actively listen, develop cultural competence and understand the most appropriate methods and practices for an inclusive exchange of information, ideas, and perspectives.
- A — **Adapt:** The ability to learn from the past to inform our present and plan for the future.
- R — **Resilient:** The ability to mentally or emotionally cope and recover from traumatic crises or experiences.
- E — **Empathy:** The ability to understand and share the feelings of another.
- C — **Collaborative:** Engaging openly and transparently with other staff to plan and develop (internal or external) work products.
- A — **Anticipatory:** Planning effectively using agile methods, being aware of relevant data (through analysis and reporting) and building in a feedback process.
- L — **Letting go of Command-and-Control Leadership and Embracing Leaderful Practices:** Locating and enabling leaders at all levels whilst developing a shared sense of decision-making and accountability.
- M — **Mindful:** Making time and space to reflect on information and decisions.

A 'Take CARE to be CALM' approach is an exercise in digital literacy building; a form of reflective practice that reframes the way people consider the role of digital technologies to support how work is completed within their specific organizational context. Determining suitable actions requires a collective understanding of the existing digital competencies of staff, as well as a consideration of what capabilities may be required of individuals, teams, and cultural organizations in potential, probable, and plausible futures.

Considering digital civility as a vital digital literacy

Across all eight elements of the 'Take CARE to be CALM' approach, the data showed 'digital civility' as necessary to foster a sense of belonging, meaningful connection, and inclusive conversations. Digital civility are online interactions rooted in empathy, respect, and kindness (Beauchere, 2019).
Since 2016, Microsoft has been conducting an annual survey to boost citizen awareness and education about online civility. The global survey, conducted in 22 countries – including ten European countries – polled teens aged 13-17 and adults 18-74 about their exposure to 21 online risks across four categories (reputational, behavioral, sexual, and personal/intrusive), their experiences of life online and how interactions in those

areas have impacted their perception of online civility. Responses are used to generate a global Digital Civility Index (DCI) score, as well as DCI score and key statistics by country.

The 2021 global DCI score stands at 65% – the most positive score since the survey began in 2016. This overall score marks a 2% improvement since 2020. The DCI score is calculated on a scale from zero to 100 – the lower the index reading, the lower respondents' risk exposure, and the higher the perceived level of online civility. The most recent global scores indicate that men and teenage boys are experiencing significantly fewer risks than teen girls and women, who reported more exposure to online risks and feeling more severe consequences as a result. Half of all women admitted to becoming less trusting of other people online, asopposed to 40% men.

For the first time since launching the digital civility project, Microsoft is making public the data that underpinned this research as part of Microsoft's leadership in the UN Generation Equality Forum. In addition to the data, Microsoft released digital safety essentials in June 2021 to support teachers and students to encourage critical online safety discussions in the classroom environment. To celebrate Safer Internet Day 2022, Microsoft launched a new adventure that helps students learn how to recognize common threats on the internet and build strategies to protect themselves and their information. The adventure, CyberSafe: Home Sweet Hmm, is available for free in Minecraft: Education Edition.

The development of digital civility is not the sole responsibility of technology organizations, but a collective, societal responsibility. Cultural organizations might consider a 'CARE' / 'CALM' approach to digital civility by reflecting on the following questions:

- **Communication / Collaboration:** How do people in your organization or work community demonstrate through their words and actions that there is a culture of inclusion and belonging, and that people's voices and opinions matter? How could you do this better?
- **Adaptation / Anticipation:** To what extent do you take responsibility for showing what healthy, reciprocal relationships look like across your organization or work community?
- **Resilient / Leaderful:** Do you and people in your organization or work community feel psychologically safe enough to raise issues related to diversity, inclusion, equity, and belonging? If not, what consequences are people scared of?
- **Empathetic / Mindful:** How might we create safe spaces for us to share our own stories and process the stories of others?

As more museum work and engagement is conducted via digital technologies, cultural organizations must consider how they actively shape and are being shaped by how they understand, use, manage, and create digital.

To learn more about 'One by One', the life-centered 'Take CARE to be CALM' framework, and digital civility, please review these resources:

- About 'One by One'
- 'One by One' Collaborative
- 'One by One' Findings
- 'One by One' / Culture24 Digital Pathways
- A 'CALM' approach to leadership in the digital age
- People. Change. Museums., Dr Sophie Frost's podcast series exploring the relationship between museums, technology, and this time of intersecting crises
- Keep 'CALM- not just carry-on business as usual
- Taking a 'CALM' approach to Scenario Planning
- Microsoft Digital Civility Resources

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YOUR DIGITAL TATTOO

D⊐ ⊏RS

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