

Let's talk

Let's talk

Culture &  
Technology

A white paper to inspire creative impulses  
for digital applications in art and culture.

We would like to thank:

Jerome Becker, Gustaaf Dekking,  
Josef Dorninger, Paul Feigelfeld,  
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Stephan Schwingeler, Sabine Seymour,  
Cornelia Sollfrank, Barnaby Steel,  
Olga Tykhonova, Merel van Helsdingen,  
Sofia Widmann, Marlies Wirth

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# Let's talk: Culture & Technology

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## Creative impulses for digital applications in art and culture

Vienna is globally renowned for its cultural heritage, its museums, concert halls and theatres. It boasts a higher density of cultural offerings than practically any other city in the world. When we talk about the city, we mean both its physical location and the people who define and shape it – and who increasingly do so in the digital sphere, thereby amplifying its reach and innovation potential immeasurably. Even before the pandemic, cultural institutions were already intensifying their efforts to find ways of expanding their offerings and reaching new target groups with the help of digital solutions. This endeavour opens up business areas for creatives and startups specialising in digital technologies: from software for ticketing, virtual and augmented reality for exhibitions and performances, to new educational formats through gamification.

## Developing innovative formats

What motivates audiences to participate in a dialogue and enhances their emotional engagement? Which digital solutions help to better experience and comprehend cultural heritage? How can cultural institutions and collections be made more accessible for researchers and learners? How can new technologies help to reach as yet untapped target groups and create inclusive experiences? And how can digital strategies enhance analogue formats?

When the creative industries – from architecture and design to software and game development, through to the art market – use new technologies in their collaborations with cultural institutions, the result is innovation.

The development of innovative formats in the cultural sector goes hand in hand with the boom in the so-called experience economy, where the focus is no longer on goods and services but on creating experiences. One of the most visible development areas at the interface of culture and technology is the visitor experience (see page 28); meanwhile, behind the scenes, technology-based processes are optimising operations. The areas of research & learning (see page 8), archiving & documentation (page 48) and exhibition & stage design (page 60) are closely intertwined and can hardly be thought of as separate from one another.

Intro

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## Diversity instead of monopolies

Technology-based applications are already making a lot of processes easier for cultural institutions. But they also raise the fundamental question of how to structure and prepare data so they can be analysed for machine learning processes. In view of the rapid increase in data volume, the German Informatics Society stresses that one of the key competences for the 21st century is data literacy, meaning “the ability to collect, manage, assess and apply data in a critical way”. And following on from that are questions relating to open access, ie making available and presenting the data collected.

Not even ten individuals are at the head of the so-called FAANG companies (Facebook, Amazon, Apple, Netflix, Google), which make up the fabric of today's digital infrastructure. It is vital to respond to these monopolies with diversity. The City of Vienna's Digital Humanism Initiative works towards strengthening and spreading positive social values and visions through, and with, new technologies. It promotes premium digital solutions from Vienna that stand for fairness, transparency, security and self-determination. Its aim is for Vienna to be a city where sustainable, inclusive digital solutions centred on human interests are developed and implemented in line with a new digital humanism.

Art's role in this context can be to contribute interference or intervention in order to offset the supposedly objective “decisions” made by machines, and to counter the chaos of new media through active skill building.

## Creative potential in the digital world

In 2020 many artists and cultural institutions migrated into the virtual world, initially at their own expense – a move that had become necessary overnight. In doing so, and in the hopes of not losing their platforms and their audiences, they often reached people who would never have known about them without these decentralised articulation media. These offerings were initially perceived as extra services; now sustained efforts are needed to establish them as a new, long-term playing field.

While the past two years mainly stimulated the exploration of what can be presented, told and experienced online, the question of how to blend the virtual and analogue spaces – and how to make the most of the resulting creative potential – is increasingly being raised.

## Perspectives for culture and technology

Which uses of creative, digital technologies can museums, theatres, concert halls and other cultural institutions benefit from? What possibilities are there in the areas of research and education, in relation to the visitor experience, documentation and archiving, and visual design? Where can new sources of income be generated for the cultural sector and business areas be established for creatives?

This *Culture & Technology* white paper provides an overview. Its aim is to inspire creatives, institutions and art and culture initiatives and offer concrete ideas for their areas of work by sharing many local and international examples of uses for digital technologies in the cultural sector, as well as interviews with experts, and specialist articles.

Intro



The Vienna Business Agency has been focusing its attention on culture and technology since 2019. Many conversations with stakeholders and representatives of this scene in Vienna took place in preparation for this publication. A two-day symposium, lectures held by international experts, workshops and a podcast series – *The Culture & Technology Podcast* – inspired the content and the selection of featured projects. Stefanie Schmitt has been providing advice and support in connection with the *Culture & Technology* focus since 2020 and also wrote the chapter introductions for this white paper as well as contributing other texts.

This white paper also forms the framework for one of the Vienna Business Agency's funding focus areas: a funding programme specifically tailored for museums to support the implementation of newly developed pilot applications. Moreover, the Vienna Business Agency invites Viennese companies to submit new projects and processes in the area of culture and technology – also in collaboration with cultural institutions – to its ongoing funding programmes. This paper seeks to give impetus to new business models, strategies, services and products in Vienna's creative industries. At the same time, it is a compass for the development of future examples of innovation and a sensorium for the status quo in Vienna and beyond.

Elisabeth Noever-Ginhör, together with Cornelia Lein, Stefanie Schmitt, Alena Schmuck, Elisa Stockinger and Heinz Wolf (editorial team)

## The Culture & Technology Podcast

How is technology changing culture? With *The Culture & Technology Podcast*, we invite leading curators, researchers, artists and cultural experts from fields ranging from exhibition design to the performing arts to explore how technology is shaping the future of cultural experiences and sparking new opportunities in the process.

*The Culture & Technology Podcast* is a virtual salon – hosted by the Vienna Business Agency together with Severin Matusek.

Past guests on *The Culture & Technology Podcast*:

Francesca Bria  
Paul Feigelfeld  
Eva Fischer  
Mavie Hörbiger  
Natalie Kane  
Ben Kidd  
Julia Körner  
Aino Laberenz  
Greg Lynn

Shannon Mattern  
Bika Rebek  
Agustin Schang  
Sabine Seymour  
Stefanie Schmitt  
Cornelia Sollfrank  
Barnaby Steel  
Xiaowei Wang  
Marlies Wirth



The Culture & Technology Podcast

“ Vienna’s rich tradition of culture and science is truly inspiring and lays the foundation for a vibrant, democratic future society. And digital technologies open up new possibilities in this context – also in the creative industries. Find out how you can turn digital technologies into a business opportunity. ”



Peter Hanke  
Executive City Councillor of Finance  
and Business of the City of Vienna

# Research &

- The future of learning
- Alternative reality & authenticity
- Digital objects as performance
- Inclusive platforms & open access

# Learning

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In what way can digital technologies help us rethink research and learning in cultural institutions?

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What motivates audiences to participate in a dialogue and enhances their emotional engagement?

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Which digital solutions help to better experience and comprehend cultural heritage?

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How can cultural institutions and collections be made more accessible for researchers and learners?

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Which digital solutions can contribute to a new way of seeing culture production and its conditions?

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What can be done to reinforce the understanding of cultural institutions as platforms for research and learning?

# Research & Learning

Research and learning in art and culture



The digital revolution has changed virtually all areas of our lives for good – including how and where we obtain knowledge. In the beginning, the World Wide Web was nothing more than a collection created in response to the need to systematically organise content and to be able to navigate from one piece of information to the next by means of hyperlinks. Then Web 2.0 heralded the start of interactive formats and user-generated content, which changed how we deal with the internet's archive character. By now we are accustomed to being able to access information and communicate anywhere and anytime with the help of our mobile devices.

At the same time, the social web offers many possibilities for active participation, which increasingly calls into question the role of educational institutions – including museums, theatres and concert halls – as traditional knowledge carriers. In today's day and age, learning is no longer just about content but above all about how it is packaged: How can analytical and reflective skills be strengthened in the face of conspiracy narratives and fake news? And what signals does it take to be recognised as a trusted source? Successful science communication places the focus on presenting content in an understandable way and on having a dialogue with the audience. One example of this is chemical scientist and science influencer Mai Thi Nguyen-Kim, who imparts knowledge on her social media channels in an easily digestible way.

## The future of (play-based) learning

Cultural institutions need to come to terms with being secondary media. For centuries they enjoyed the exclusive attention of their audiences. Now, however, there is a growing need for formats that do not forfeit quality through the use of second screens – ie second devices used parallel to computers or TV screens – but rather add value. After all, interaction across several channels intensifies emotional engagement. Cultural institutions can benefit from the experiences gathered in the gaming sector, as Konstantin Mitgutsch (page 14) and Stephan Schwingeler (page 18) explain on the next few pages. Small "tasks" or "missions" help to focus users' scattered attention by encouraging active participation. Hybrid formats efficiently establish interconnections and address multiple narrative categories at the same time, thereby inviting visitors to dive more

deeply into the content. Both the degree of gamification and the visual appearance depend on the target audience and their technological capabilities. More complex adventure formats – eg those designed as treasure hunts or paper chases – send the visitors on a journey that plays with elements like anticipation, surprise and amazement. Their dramatic structure corresponds with step-by-step narratives (eg ascending levels), which speak to the reward system in the brain. The design parameters needed to achieve the desired immersion vary greatly. Under certain circumstances, an abstract visualisation that actively requires the user's imagination to supply the missing information can elicit stronger emotional engagement than a faithful replication.

## Virtual representation: from IRL to URL

The progress of digitalisation is clearly visible in the museum sector. People can experience and examine entire collections or individual pieces thanks to 3D or 360° technologies – online, in an interface, or as a freely scalable 3D print. Theatre productions, concerts and performances, on the other hand, require an entirely new dramatic structure in order to be translated into virtual events. Interactive formats, for instance, that are designed as a choose-your-own-adventure enhance the feeling of being physically present and experiencing something live. In the context of performative experiences, the question of long-term availability arises: How can they be made experienceable anywhere and anytime? Are there any artefacts or multimedia (re)productions, for instance, that allow an ephemeral event to be transmitted retrospectively?

## Leaving an impression on the senses

In January 2021 France declared smells and sounds a cultural "sensory heritage". Experiences stay fixed in our minds if they are somehow extraordinary, different, emotionally intense and if they involve the body, eg when several senses are stimulated at once, such as when memories are linked with smells. Screens and interfaces, on the other hand, often deny us an object's tactile quality. But hybrid extended reality installations can bring back the haptic materiality of a surface, while virtual reality applications can stimulate the other senses through sight. Take, for example, a virtual experience where we are standing on a ship's bow and hearing the sound of the waves. We inevitably imagine the wind in our face.





In order to permanently embed a memory in our mind, it is vital to collectively remember it in the form of narratives and stories. Sharing memories is key to building and maintaining social relationships. By asking, “Do you remember when ...?”, we invoke a shared experience and foster closeness and emotional connection. Collective storytelling, like that promoted by the 2021 YOUKI International Youth Media Festival in cooperation with *NAKE* teen magazine (page 21), has two important effects: it strengthens our sense of belonging while also helping us find our own identity.

### Recording bits & bytes

How to deal with objects whose characteristics only become apparent when they are used in the context of an exhibition? Unlike when analogue objects are digitised, the parameters for digital objects and their carriers – eg storage media, computers and consoles – need to be designed from scratch. A specific language is needed to describe, cluster and categorise them, and the methods of preserving and presenting them must be developed on a case-by-case basis. Moreover, the use of digital objects is usually restricted in terms of time; hardware and software are subject to a “natural” transience, and licensing procedures (which are often inconclusive) similar to those for copyrighted artistic content are required.

Long-term perspectives are key to building successful research & learning structures: Is the system modular and thus expandable? How complex is its maintenance (in terms of time, staff, money)? And what alternatives are there in the event that the software used changes in the course of updates, and certain functions are no longer supported?

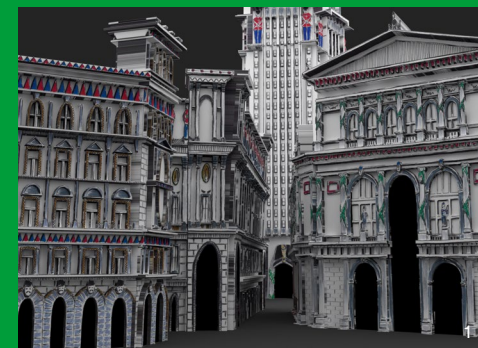
## ● Literature in the virtual space

### Studio Brauneis & Poesie Media

*Inside Lieutenant Gustl* transforms Arthur Schnitzler's novella *None but the Brave* (*Leutnant Gustl*) into a spatial experience. Viewers are invited to explore a fictional Vienna set around 1900 with the help of VR. This virtual play allows for multiple changes of perspective that go beyond mere observation: from Gustl's (Lukas Watzl) internal monologue to the dialogue with his “shadow” (Christoph Radakovits), the viewer sees the story unfold through the protagonist's eyes. The literary characters come to life in the set painted by artist Deborah Sengl and feel close and real.

In addition to bringing culture/theatre to a technology-savvy audience, *Inside Lieutenant Gustl* also opens up new ways of thinking about research and learning. The culture connected initiative of the Austrian Federal Ministry of Education, Science and Research, for instance, incorporated the project in German classes. And the VR experience itself was designed as an artistic research project to explore the potential of narrative extended reality formats: What is the right amount of text in a VR experience? Does the medium keep its empathy promise? How do you create presence and agency in a virtual environment? And which elements of physical storytelling – ie storytelling that involves the body – help us tell more impactful stories?

[insideliutenantgustl.com](http://insideliutenantgustl.com), [poesie.media](http://poesie.media)



## ((☹)) Hijacking the system

### With Cornelia Sollfrank

What can early internet art teach us about the paradigms of digital technology?

This episode of the podcast features Cornelia Sollfrank, an early pioneer of Net Art and Cyberfeminism. Cornelia's early work in the 1990s explored how the World Wide Web – which was a newly introduced system at the time – could be used to do things in a different manner. To this day, her work explores many themes that are still very relevant; mostly digital cultures, self-organisation through new technologies, and data as a tool that can be utilised to both positive and negative effect.



The Culture & Technology Podcast  
episode 8



# Bringing play into play

Konstantin Mitgutsch on gamification in the cultural sector



When Friedrich Schiller argued that we are only human when we play, he was not really taking play seriously. In fact, he distanced himself from real-life playing and limited his statement to play in thought and imagination. Today, 220 years later, this attitude has partly persisted. Games are trending, there is gamification in almost all apps and videos, and financially, games have even surpassed the music and the film industries. Play is, and always has been, a part of our culture. But are games today allowed to find their way into our high culture? Can they be transferred from children's screens into the stately rooms of our cultural institutions? Of course not, Schiller would say. But maybe he is overlooking the exceptional power that play-based experiences have achieved in our current century.

In recent years much has been said about the potential of play, and technological developments have made new forms of digital, hybrid and virtual play possible. The cultural sector would do well to acknowledge these three aspects of play: interactivity, immersion and structure. Every game contains an interactive challenge that players must actively solve. In doing so, they dive into the narration, into the game's world and objective, and immerse themselves in it. Games are something of a "magic circle" that players enter for a certain time and where they can forget time and space. Gamification means taking individual elements from this magic and using them to enrich real experiences. So what magic can play bring to the cultural sector?

Before we look at those areas that have already opened their doors to play-based experiences – such as museums, theatres and events – let's knock on the locked doors of concert halls, cinemas and auditoriums. At first glance, experiencing a concert as play probably only makes sense to the TikTok generation, as these youngsters are accustomed to seeing their favourite stars performing via a digital medium. But if we give it a second glance and look for the potential of play-based interactivity, immersion and structure, we can find new possibilities.

## Gamified concerts

In the past 10 years streaming services and the prevalence of inconspicuous headphones have changed how we listen to music. But concerts don't seem all that different now from 30 or 40 years ago, apart from the fact that

we now see mobile phone flashlights being held up instead of lighters. From the perspective of play, this raises the question of how visitors might be able to interact in this context, and what fictional problem they could solve. What game mechanics could enhance the immersion, and which technology would be able to intensify the experience of the music? What if you could feel like you're part of the music during a concert? Or if you could even play along and create something new in the process? The fact that we can't picture this scenario should actually make us curious to experiment. Take, for instance, the holders of tickets to a "secret concert" by the band Mando Diao. For weeks they had to try and solve puzzles to decode the venue, which was revealed on the day of the concert: a forest in Sweden.

## Play-based museum

Museums recognised the value of interactivity early on. Visitors want to actively participate or try their hand at something, and they want meaningful experiences. As an example, the Nintendo 3DS audio guide of the Louvre in Paris allowed visitors to search for works such as the Mona Lisa. At Geneva's Museum of Art and History, an AR app made it possible for visitors to see statues with their missing body parts restored. But only when the magic of play is truly utilised does it really get interesting from a play-based perspective. Okay, so you're probably familiar with the Mona Lisa, but do you also know the Louvre's garden? Exactly! And that's precisely what you can explore as you and your team play a mystery adventure game entitled *Mysteries at the Tuileries*. While the game draws the visitors' attention to as yet undiscovered parts of the museum's premises, they are having a valuable, joyful social experience and creating memories.

## Film as a tricky area

One medium that has been successfully resisting the integration of play for a long time is film. Apart from a few examples from the 1970s, an experiment with audience participation carried out by the television channel Arte, and semi-interactive attempts such as *Black Mirror: Bandersnatch* on Netflix, play and film seem to be reluctant partners. But what if we rethink films, cinemas and viewers? What if our mobile phones are no longer just devices that ring at awkward moments, but rather useful tools for experiencing films in cinemas? What if these very places are a meaningful home for VR and AR? And what if the most intense cinematic experience of your life is yet to come? What if theatre, film, music and play form a synthesis? Cirque du Soleil's interactive show *Toruk*, inspired by the movie *Avatar*, proved that this utopia isn't as fanciful as you might think. The app that was available to the spectators allowed them to immerse



themselves in the story before the event, access more levels of the game during the performance, and even control the piece's visuals themselves, thereby becoming part of the experience.



### Interactive playing areas

The Van Gogh Museum in Amsterdam also offers an immersive, play-based experience in which visitors can experience the artist's view of the world through interactive animations of his paintings. In this way, the pictures themselves become a playing area. The objective of the game is to dive into the life of Vincent van Gogh. Seeing how different fields intermingle in these experiences is also exciting: the visual arts, technology, game design, experience design, dance ... The focus is always on the players as active agents. As an example, at Playful Solutions we carried out an experiment for BMW relating to the topic of data analytics. We created an extraordinary experience with sensor-controlled interactive visual space design by the Vienna-based agency Bildwerk and game design by Lost in the Garden. The staff got to experience for themselves how data analytics and AI can be creatively used to solve problems and what that has to do with their real-life work – and all of that while participating in an exciting sci-fi story. We further developed this interactive approach by using mobile phones as a collective controller in a team game for a project entitled TeamPLAY. When the digital and real worlds meet in a meaningful way, previously unheard-of forms of collaboration and communication can emerge.

With this in mind, and in the midst of the trend towards interactivity, play and gamification, it's important to remember that these experiences should generate added value. They shouldn't be degraded to mere gimmicks, an attempt to jazz up something boring, or a joke – but should rather, as Schiller said, make us more human. Bringing play into play means using excitement, storylines, structure and active participation with all kinds of technologies to create worthwhile experiences.

## Konstantin Mitgutsch

Games developer, researcher & author

Konstantin Mitgutsch is an Austrian games developer, author and researcher. He obtained his doctoral degree in Education from the University of Vienna, works as a researcher at MIT in Boston and founded the game design agency Playful Solutions in 2014. His focus is on transformative learning processes and the intelligent use of interactive technologies in transformation processes.





# “No medium is superior to another”

18 Computer games in the cultural sector  
Interview with Stephan Schwingeler, conducted  
by Jutta Scheibelberger



Research & Learning

1 Stephan Schwingeler © Kevin Momoh  
2 Habitat by Heleen Blanken with Navi and Stijn van Beek  
© Peter Tijhuis  
3 Adam Scarborough: The Democracy Machine! (2016)  
© ZKM, photo: Elias Siebert

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Research & Learning

*YOUR FOCUS AS A RESEARCHER AND CURATOR IS ON COMPUTER GAMES AS BOTH AN ART FORM AND EDUCATIONAL FORMAT. WHAT RECOMMENDATIONS DO YOU HAVE FOR MUSEUMS AND CULTURAL INSTITUTIONS WHEN IT COMES TO CURATING EXHIBITIONS AND INCORPORATING DIGITAL GAMES AND OTHER DIGITAL MEDIA?*

In my research work as an art historian, there is no *paragone*, ie no competition between the arts. I believe that no art form, material, medium or technique is superior to another per se. Consequently, it may be a good idea for museums and cultural institutions to integrate digital games in exhibitions and collections. Computer games – even outside of the contexts of the art world – can say something about the status quo of the society in which they were created. There are plenty of examples of digital games in a museum context, either as exhibits themselves or to convey content. My recommendation is to generally be open to this new medium, as it has huge potential.

*WHAT ARE THE BENEFITS OF PLAYFULLY EXPLORING INTERACTIVE CONTENT?*

When you invite visitors to interact, you give them the feeling of participating and being involved. This has the potential to give them terrific new experiences.

*YOU WERE RESPONSIBLE FOR DEVELOPING AND MAINTAINING THE GAME PLATFORM AND PERMANENT EXHIBITION ZKM\_GAMEPLAY AT THE INTERNATIONALLY ACCLAIMED ZKM CENTRE FOR ART AND MEDIA KARLSRUHE. WHAT WAS YOUR TAKEAWAY FROM THIS PROJECT?*

From a curatorial point of view, interactivity is much harder to handle in every respect than the so-called “flatware” that hangs on a wall and generally stays there. The technical and curatorial care required for an exhibition with interactive content is both time consuming and labour intensive. And the term “interactivity” doesn’t always necessarily mean the same thing, nor are computer games always the same. There are so many facets and differences in these areas, which means that exhibits need to be selected very thoughtfully. Not every game is suitable for a museum. That’s why it’s so important to have curators who feel comfortable in this field as well.

Stephan Schwingeler

Art historian and media scientist

Stephan Schwingeler is an art historian and media scientist with a focus on the areas of visual studies, media art and computer games. He is a professor of Media Science at the Faculty of Design at HAWK University of Applied Sciences and Arts in Hildesheim. Prior to that, he was a professor of Game Design at media Akademie in Stuttgart. He also works as a curator.

“Not every game is suitable for a museum.”

Stephan Schwingeler

WHAT'S KEY WHEN IT COMES TO ARCHIVING DIGITAL GAMES?

That's a problem that hasn't been solved yet, and too little is being done in that area. Should we use physical data carriers, software or emulators? Do we need to include all file versions? And what about online games that are played by millions of players at the same time on parallel-running servers? There is no "artefact" in this case that we can just put in a shelf or save. How sustainable are these solutions?

These questions will all play a big role a few years from now, for instance when media archaeologists try to get an outdated software version of an old game up and running on obsolete computers.

WHICH TECHNOLOGICAL DEVELOPMENTS ARE YOU LOOKING FORWARD TO?

I'm curious to see what Mark Zuckerberg will do with his Metaverse. I wouldn't say it's a development I'm looking forward to, but rather one I view with a critical eye.



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Research & Learning



3

● Creating content together

NAKE & YOUKI

How can an overstimulated target group be encouraged to actively participate in something? The *NAKE Magazin* team developed an online offering for the 2020 YOUKI Film Festival that motivated creative young people to get involved in creating content for the *YOUKizine* festival magazine – while having fun. The platform they chose to use was Mozilla Hubs, which is based on the principle of utilising the interactive potential of spatial encounters in digital spaces. The participants set up avatars that allowed them to move through the virtual environment, solve puzzles and communicate, while at the same time contributing to the editorial process. The content created was the result of this collaborative effort. The outcomes were then archived according to format, meaning that the 3D morphs designed in the game *GLITCH ME!* remain available and are published as digital objects next to other content in *YOUKizine*.

[nake-mag.com](http://nake-mag.com), [youki.at](http://youki.at), [nake-mag.com/story/become-spaces-die-interaktive-online-redaktion/](http://nake-mag.com/story/become-spaces-die-interaktive-online-redaktion/)

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Research & Learning



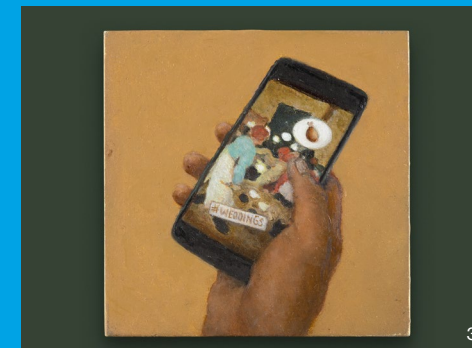
2

● Screen design as a magnifying glass

Wild & Kunsthistorisches Museum Wien

Pieter Bruegel's painted landscapes are a sensual experience. *Bruegel – Once in a Lifetime*, an exhibition hosted by Vienna's Kunsthistorisches Museum in 2018/19, was the largest exhibition of his works to date. The Vienna-based digital agency Wild created a website to go along with the exhibition and bring the painted scenes to life. The extraordinary glimpses into Bruegel's miniature wonderland given by this virtual exhibition would otherwise only be possible with the help of a magnifying glass. The clearly structured design features animations and audio and video essays that shine a spotlight on many details of Bruegel's works and allow users to explore the aspects they are particularly interested in. Interactive graphics, for instance, highlight the narrative elements of the artist's jam-packed pictures, and infrared reflectograms show how Bruegel changed his paintings in the course of working on them. Wild's outstanding combination of functionality, aesthetic design and playful exploration demonstrates how the process of exploration can be translated into pixels, as users are invited on a journey into the recesses of Bruegel's paintings.

[bruegel2018.at](http://bruegel2018.at), [wild.as](http://wild.as)



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1/2 © Marion Müller/NAKE  
3/4 © KHM & We Are WILD GmbH



# “The openness to help each other”

Interview with Sean Green,  
conducted by Elisabeth Noever-Ginthör

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NEW INC was founded by the New Museum in New York City in 2014 and is the first museum-led cultural incubator dedicated to supporting innovation, collaboration and entrepreneurship across art, design and technology. Over 540 creative practitioners have completed NEW INC’s programme, developing projects that spotlight current societal and social challenges. These include such pressing issues as data protection, climate and inclusion, as well as education and the new business worlds.

We talked to Sean Green, founder of ARTERNAL, who is one of the NEW INC alumni, to learn more about the cultural incubator, his work and the role of art in our increasingly digitalised life.





*SEAN, ARTERNAL OFFERS DIGITAL SOLUTIONS FOR ART GALLERIES, ADVISORIES AND AUCTION HOUSES, SUCH AS DIGITAL CRM, INVENTORY AND FINANCIAL TOOLS. HOW DID YOUR ORIGINAL BUSINESS IDEA EVOLVE OVER THE COURSE OF THE NEW INC PROGRAMME? WHAT WERE YOUR MAIN LEARNINGS?*

Our original business idea evolved a couple times, and we began at NEW INC as ARTLOCAL in 2014/15, with i-beacon NFC technology as a focus to enhance how people engaged with galleries and museums via iPhones. When it came time to discuss our monetisation strategy, we realised that gallery owners (art dealers) cared less about foot traffic and more about maximising revenue. We pivoted to focus on the relationship because that is what galleries said drives their business. Seeing that there had yet to be built a CRM focused on the nuances of art dealing, my co-founders and I made this our focus and in 2016 we signed our first CRM client. We learned a lot about the client research that it takes to get a product right. Also, having the right team is key. It's hard to put together the right people to attack a mission, but when you do it makes running a startup much more enjoyable. And lastly, building a business and entrepreneurship is hard, so have the right supporting cast around you with people you can trust and lean on when times are rough.







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*NEW INC PUTS A STRONG FOCUS ON ITS COMMUNITY OF CREATIVE PRACTITIONERS AND ENTREPRENEURS FROM A DIVERSE RANGE OF BACKGROUNDS. HOW DID YOU AND YOUR BUSINESS BENEFIT FROM THIS COMMUNITY?*

There were some really talented UI/UX designers as well as people who knew how to problem solve and think outside the box. For us, we were building software, and being able to tap the creative minds that were running a pop-up gallery or designing new interactions for a product they were releasing that had similar elements to ours was rewarding. The openness and willingness to help each other was an enriching part of being at NEW INC. We all worked in our own groups and always set aside time for a quick conversation to help, guide or assist each other in any way we could.

*WHAT ROLE CAN ART PLAY WITH REGARD TO THE CHANGES IN OUR INCREASINGLY DIGITALISED LIFE AND WAY OF WORKING?*

Art plays an incredibly important role in our increasingly digital world. During the pandemic, it was the first time that I got to step into an art gallery that I felt my soul being fed, as it was such a dark time. Art has this effect on your mind that sometimes is hard to express. The emotions that it unearths can be healing and powerful. The way that it makes us think and absorb happenings around us in the present day and historically is unmatched. As much as NFTs are the craze of today, whether you like or dislike the topic, it's making the art world more relevant in many ways to younger generations. As a world becomes more and more digital, I feel art is still a place and conversation that grounds us, whether digital or traditional, and humanises us.

*NEW INC DESCRIBES ITSELF AS A VALUES-DRIVEN ORGANISATION. IN VIENNA, UNDER THE MOTTO "DIGITAL HUMANISM", WE AIM TO SUPPORT DIGITAL PROJECTS THAT HELP US TO IMPROVE THE WAY WE INTERACT, COMMUNICATE AND LEARN, AND THUS, TO LIVE BETTER. WHICH VALUES ARE CRUCIAL FOR YOUR BUSINESS?*

The values that are crucial for our business are diversity of thought and people, communication, leading with grace and good vibes, and the motto "work hard and play harder".

“Diversity of thought and people are crucial for ARTERNAL.”

Sean Green



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# Visitor

28

- Storytelling in art and culture
- Emotional engagement
- Creating virtual connections
- Becoming a trusted source

# Experience

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Which digital tools help cultural institutions be better storytellers?

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How can cultural offerings be presented as immersive experiences to promote emotional engagement?

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How can digital technologies build sustainable communication with the audience?

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In what way can new technologies help to reach as yet untapped target groups and create inclusive experiences?

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How can cultural offerings be presented as at-home experiences?



# Visitor Experience

Telling stories and shaping experiences



Sixty times. That's how often Facebook founder Mark Zuckerberg used the word "experience" when presenting his Metaverse in October 2021. As early as 1998, the authors Joseph Pine and James Gilmore used the term "experience economy" to illustrate the inestimable market value of experiences and urged businesses to create memorable experiences for their customers. Ideally, an experience is a transformative event, and this transformation energy then also flows into the value of the offerings. The "attention economy" follows a similar approach in that the limited resource that is attention becomes a currency. The cultural sector is also reacting to this and is making use of user experience (UX) design strategies.

One of the features of good UX design is intuitive navigation. If the technology-enhanced experience is accessible, easy to use and clearly marked for better orientation, the audience will be happy to remain in the experience to the very end – especially if the common thread running through the story is easy to follow and the design is immersive or even interactive. Learn more about this in the article by Sofia Widmann and Olga Tykhonova (page 34).

## New formats through interdisciplinary collaboration

What if cultural institutions made their own TV shows? A celebrity adventure format in the Natural History Museum, a casting show in the Musikverein, a dating series in the Crime Museum, or a soap opera based on a bourgeois tragedy?

In order to create experiences within cultural offerings, competencies in the areas of visual design, programming, psychology and interaction design are required. Accordingly, a growing number of new terms can be found in job announcements in the cultural sector. The increase in educational programmes in the area of digital psychology, which examines the psychological effects of digital technologies and media, shows that social media channels require as much attention as everything else.

They need precise strategies tailored to the institution and/or project in question. While the areas of dramaturgy, PR and marketing, and educational work are becoming more and more interwoven, the overlap between staging and curation is also growing. At the same time, it is important for the design of an experience to be based on the content: which stories can we tell, and do we want to tell, in order to reach our audience at an emotional level – not only to reclaim a share of the attention economy, but foremost to play a formative and identity-building role in society?

## Turning a barrier into a springboard

It pays to think about accessibility in the virtual world early on. It often only becomes apparent during trials with test audiences that using the new Apple technologies, for example, is far less intuitive than founder Steve Jobs promised in the beginning. The National Museums (Staatliche Museen) in Berlin, for instance, are offering "telephone tours" as a pandemic format that brings artworks to life, based on descriptions for visually impaired people; Vienna's MAK Museum of Applied Arts has a digital museum guide that features audio stories (page 33); and SONIC TRACES adds the spatial dimension with an augmented reality app that leaves audible marks at real locations (page 44).

## Overcoming spatial limitations: (hyper-)local & international

Attempts to enhance offerings' quality of experience frequently draw on nostalgically charged formats. Take, for instance, a drive-in museum in which stories are heard coming from a car radio – an idea developed more than 50 years ago by Wolf Vostell (*Project for a Drive-in Museum*, 1970). And the postal service is also often a knowledge carrier and functions as a "letter box theatre" or as a performative hybrid that auditorily connects the local geography with the digital experience with the help of a smartphone-based app and physically by means of a starter kit that users receive by mail.

Besides installations bound to a specific locality – such as Animaker by OMAi (page 39) – the demand for "home-based stories", ie experiences for home, is also rising. These work well in and of themselves, but they can also take specific storylines further at a specific locality – an exhibition or performance, for example. "Second-screen" practices, ie the parallel use of a second device, are not an impediment here, but can rather be used productively by integrating them in a cross-media narrative. After all, people's viewing habits in the virtual space favour nonlinear storytelling, which draws on interruption, distractions and simultaneity as its integral components.



## Creating virtual closeness

Online tourism brings the inner life of cultural institutions into our own four walls: digitised architecture evokes memories of an earlier, physical visit and our corresponding emotions. Virtual visits whet people's appetite for a "real" visit in the not too distant future. The Artificial Museum, for instance, combines the aesthetic experience with concrete GPS data (page 47). At the same time, the internet's broad reach creates connections that would never have been possible with analogue mobility alone. This includes factual interconnections as well as work contexts and transnational teamwork. When physical space is suspended, an unprecedented mobility emerges. And the audience changes. If the audience addressed is no longer limited to physically present individuals but rather global, what impact does this have on the content?

## Building relationships and networking

Because cultural institutions are having to do without casual visitors during the pandemic, "building relationships" has shot up their list of priorities. One way of building a friendly expert image is personalisation, ie making the people behind the projects visible. Personal stories and shared moments touch us more deeply than the abstract concept of an institution. However, speaking before an audience is a skill that requires practice. Professional support can significantly improve the impression you make before the camera or behind the microphone.

Successful content curation interacts with affiliated persons and institutions, integrates "external" content, and includes guest contributions, thereby allowing a wide range of voices to be heard. The key is to see online presence not primarily as a promotional tool. Rather, it is about establishing meaningful relationships with the public and meeting them at eye level.



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# 33

## ● Tales from the museum

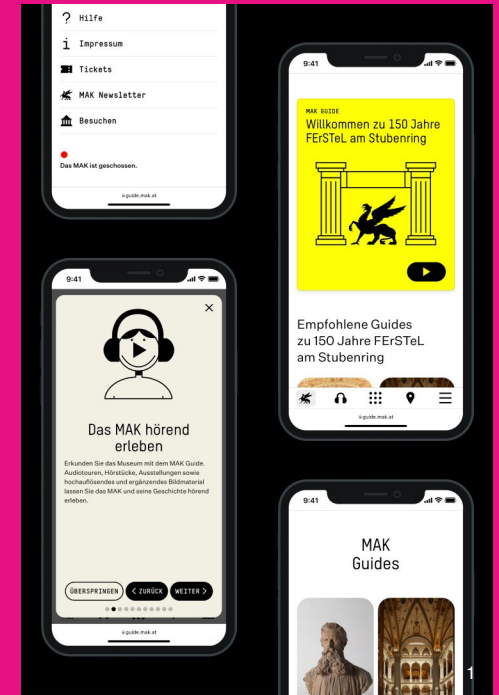
### LWZ, Huangart & MAK

The digital MAK Guide offers narrations to go with 100 selected objects on display at Vienna's MAK Museum of Applied Arts. Among other things it provides information about their background, historical and socio-political contexts as well as materials.

The web app guides users through the museum with the help of audio recordings and high-resolution images. Visitors can take themed tours, either in person at the museum or from home, they can navigate through the building, look for specific pieces, and save and share their favourites online. The guide was designed and developed by the Vienna-based design and animation studio LWZ in cooperation with the digital agency Huangart.

What is the most important thing to keep in mind when designing a digital museum guide? "The interplay between the individual disciplines. Many museum guides only meet the technical and content-related requirements but leave a lot to be desired when it comes to feel and look," says Stefan Lechleitner of Huangart.

[guide.mak.at](http://guide.mak.at), [lwz.studio](http://lwz.studio), [huangart.at](http://huangart.at)



## ((( ))) Art's role in our new extended reality

With Eva Fischer and Barnaby Steel

In our perceptions of the world, we're all stuck in our own minds – right?

What if technology could help us transcend the limits of our own brains and bodies, and connect us to the experiences of other living beings? That's precisely what artist Barnaby Steel and his studio, Marshmallow Laser Feast, invite you to do through their multisensory installations and virtual reality interfaces. For this episode of *The Culture and Technology Podcast*, Eva Fischer, curator and initiator of CIVA, Vienna's new media art festival, talks to Barnaby about how VR can help us to reconnect with the world beyond our filter bubbles.



The Culture & Technology Podcast episode 2

# A smooth visitor journey

How to matter more to more people  
Practical insights for cultural institutions by  
Sofia Widmann and Olga Tykhonova

Once visitors arrive at a cultural institution, what do they expect? This was one of the key questions explored in the course of the two-year European *Future Museum* research project, initiated by MUSEUM BOOSTER in cooperation with research institute Fraunhofer IAO (Institute for Industrial Engineering) in 2019. The project examined the potential of technologies and the possible innovations in the cultural sector. One of the findings was that visitors were mostly looking for a seamless experience. The behaviour and preferences of visitors are significantly shaped by other industries, for example hospitality, tourism, entertainment, retail. Future Museum's research and ideas were enriched with lessons learned by those industries that have more financial means to experiment with.

How can museums and other cultural institutions create a seamless experience for their visitors? It is crucial to analyse the existing and potential audience and create a hybrid visitor journey with various touchpoints for the visitor. In order to achieve this, it requires a digital culture and hybrid management structure in a cultural institution.

## Know your audience

Every successful cultural endeavour (an exhibition, performance, concert) starts with an analysis of potential audiences. This can be achieved by gathering data from various sources, such as general trends, household information, ticketing data, website traffic, response to newsletters, CRM, social media or surveys.

Of course it is important to be able to interpret this data in order to gain insight about the visitors, how they perceive cultural institutions and – as a result – how they behave. Having knowledge about potential visitors helps cultural institutions create the right message for the right audiences. The main factor for success – ie a growing, loyal and happy audience – is knowing how to respond to the needs of the visitors. Therefore, it is fundamental to incorporate your message in every step of digital marketing communication as well as in relevant moments of the onsite visitor journey. This can help to establish an emotional connection with the audience.

The *Wonderland* exhibition, created by the Australian Centre for the Moving Image (ACMI), is exemplary in its approach to visitor journey optimisation. The exhibition, designed to reference Lewis Carroll's book, was accompanied by a digitally enhanced paper map: *The Lost Map of Wonderland* created by Sandpit. Through NFC technology, it revealed "hidden" animations and content and served as the canvas for visitors' creations in the activity space, alongside basic wayfinding and exhibition branding. More importantly, it acted as a post-experience call to action and the key to further online experiences. With the help of the map and smart solutions applied throughout the visitor journey, data was collected at each stage, including the duration of the stay and the time and place of checking in. After the visit, the visitors' online activity gave further clues about their interests and motivations.



## Creating a hybrid visitor journey

As part of the *Future Museum* research project, together with Fraunhofer IAO, we elaborated on the model of a museum visitor journey in order to analyse the visitor path and break down possible touchpoints with the museum. As a result, we created the Future Museum Visitor Journey, which is made up of four main stages: pre-arrival, arrival, visit and post-visit.

Each step of the visitor journey is divided into actions that can be taken by a visitor (see figure 2). For example, in the pre-arrival phase, the visitor searches for and selects the site, plans the date and time of the visit, purchases the ticket and travels to the site.

The visitor journey can also start without the visitor being physically active. The awareness of the cultural institution might begin through media exposure on the radio, television, online or in the press (figure 3). The potential visitor becomes interested in, considers visiting, and wants to learn more about the museum through media, blogs, reviews or social ads.

For the pre-arrival phase, a cultural institution should consider creating and/or improving touchpoints by targeting search engine optimisation, using personalised marketing, becoming part of multi-attraction passes and city cards, creating posts on “prepare your visit” apps/websites, using combined offers with other tourist stakeholders, or working on transportation partnerships.

Alongside the “seamless experience”, in which visitors move fluidly between the physical and the digital experience, it is vital to ensure consistency between these physical and

digital touchpoints. However, this consistency is not only visual, but also functional and gestural. Visitor experience mapping is an essential exercise that helps to define driving principles for developing an appealing welcome ecosystem, such as an attractive entrance area sensitive to specific audiences of a specific institution. It is therefore relevant to talk about experience strategy, one that puts the visitor at the heart of the experience, whether that is digital or physical, or rather a mixture of both.

Designing a good experience not only serves visitors, but also helps institutions in achieving their business goals (eg raising the membership bar). We need to understand when and where in the visitor journey we should be presenting different calls to action: When best to collect customer data? When to encourage visitors to become members? When to ask for donations or to place offers? These questions apply both to physical and digital visits – hence we must actively work towards bringing the two together.

In practical terms, it is crucial to recognise people as a vital part of the experience, to create more visible touchpoints (both digital and physical), define a clear purpose for each of them and to connect them in a consistent experience. A simple rule to remember is to provide the right information at the right time.

### How to establish a digital culture

Digital technologies and tools empower teams and are handy in many ways. However, a genuinely transformative boost implies integrating the digital into the DNA of institutions. Rather than just doing shiny audience-facing things, like yet another app, it’s about how we initiate transformative processes that involve people’s needs as much as technological innovations. Technology allows us to amplify the message and widen the outreach, becoming more adaptive to the individual and more interactive, but it is not a magic wand in itself. New ways of working imply cultural change within institutions, structural shifts, seeding new skills and developing new types of relationships to enable information flow and gradual qualitative change.

Artificial intelligence (AI) has the potential to positively influence how quickly and effectively museums respond to evolving needs, challenges and opportunities, be it on the visitors’ side, such as visitation pattern prediction and experience evaluation, or on the internal operational level. For example, the Art Institute of Chicago has tailored a model that enables them to predict attendance rates and membership dynamics, and to adjust their programming and launch of offers accordingly. The data they lean on includes the institution’s own his-



Figure 2

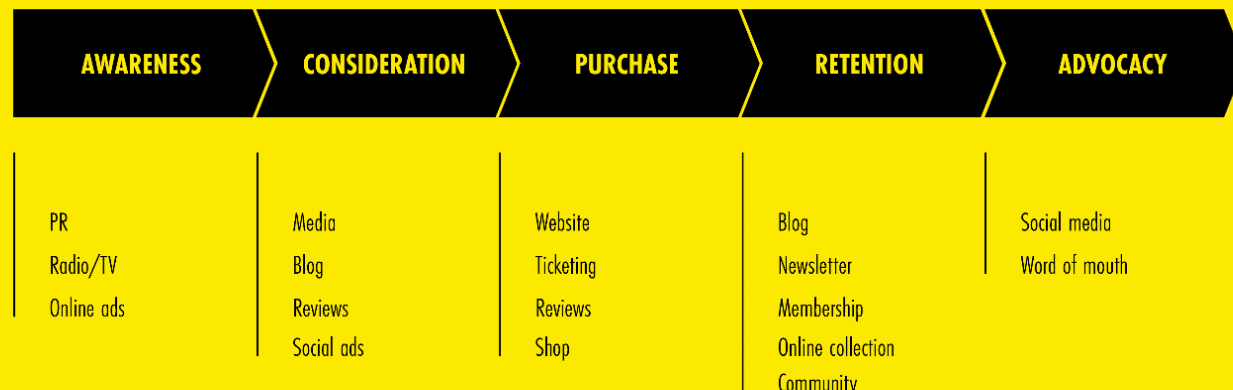


Figure 3

torical data (collected accurately) as well as overnight stays at the hotels in the city, and both domestic and international mobility patterns, among other things.

Although the opportunities and expectations for faster processes and boosted capacities are mesmerising, AI is not a “one size fits all” technology. The volume of user data is growing exponentially, collected from the visitors’ physical experience and from various digital touchpoints of that journey: web, social media, ticketing, and mobile apps, among others. However, the resources and capacities of institutions underlie a different growing structure. In the given climate, for data-driven approaches, particularly AI, to be most effective, there must be a clearly defined focus and action area.

For museums and cultural institutions that are new to applied data and analytics, focusing is the key in building changes without making large investments in staff or technology. A common pitfall is the temptation to perfect the dataset, analysis and/or report before trying to answer the actual question. Less precise data can still allow for a quick but meaningful observation of institutional trends so that in-formed decisions for further investments can be made.

Change is not easy. However, the challenge is worthwhile. The audience-centred paradigm, the need to honour multiple voices (diversity and inclusion, outside and inside institutions) and multiple sources of knowledge, is here to stay. Cultural institutions are all fighting for relevance in an often indifferent world. An important question to ask is how to matter more to more people. Cultural institutions should function as producers of meaning, as places of exchange, and progenitors of social re-imagination, facilitating ownership and empowerment. They should work on establishing themselves as a bonding medium for society. There can be no beginning and end to this endeavour, just a consistent effort.



## MUSEUM BOOSTER

Research & consultancy company

MUSEUM BOOSTER is a Vienna-based research & consultancy company with a focus on the strategic advancement of museums and cultural institutions through digital transformation and organisational innovation.

[museumbooster.com](http://museumbooster.com)

Sofia Widmann

Initiator and managing partner

Sofia Widmann is the initiator of the Future Museum research project and managing partner of MUSEUM BOOSTER. Her special focus is on new media technology and its influence on the success of museums.



Olga Tykhonova

Head of Strategic Development

Olga Tykhonova is the head of Strategic Development at MUSEUM BOOSTER and a research curator of the Future Museum project. Olga's long-term research focus is on art institutions as a medium and relevant support structures for artists.



## ● Educational play

OMAI

Office for Media and Arts International (OMAI) has been combining projection art with innovative software since 2007. Its Tagtool app allows users to collaboratively design visual content in real time. It is used to create animated worlds, eg for imaginative artworks and stage sets, and for educational purposes.

One such educational project is Animaker. It gives audiences of all ages a better understanding of technologies such as machine learning, 3D scanning and XR (cross reality) through play. A large immersive projection shows an ancient jungle temple and invites visitors to use building blocks to build animals. Their creations are placed on a 3D scanning station, where a virtual, AI-powered robot identifies the animals and brings them to life in the projected environment. By doing without headsets and other technological barriers, Animaker puts the focus on the shared experience.

It was developed by OMAI in collaboration with the Israeli AI startup Resonai, and artists and educators. It is installed at The Tech Interactive in Silicon Valley and at the Ars Electronica Center in Linz.

[omai.at](http://omai.at)



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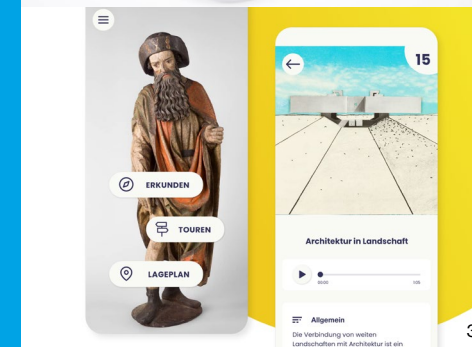
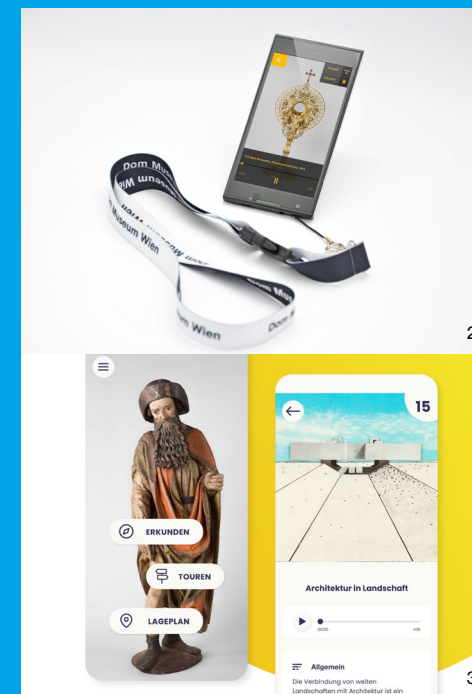
## ● Inclusive learning

Fluxguide

Fluxguide develops tailored educational software for the art and cultural sectors including learning apps and multimedia guides for visitors, participatory platforms and digital exhibition spaces, as well as digital education programmes for museums.

One example is the inclusive media guide for Dom Museum Wien, the museum adjacent to St. Stephen's Cathedral in Vienna. It allows children and adults to explore the collection at their own pace. The Director's Tour option features museum director Johanna Schwanberg giving her own personal take on her favourite exhibits. A special mode designed specifically for children and school groups offers age-appropriate content in an interactive, entertaining form. Fluxguide also installed iBeacons, small transmitters positioned throughout the museum, which allow additional elements of a certain exhibition area to automatically appear in the guide upon entering. The content is also available in the form of videos in Austrian Sign Language. In addition, the talk-back or voice-over mode for blind and visually impaired people can be activated. Visitors can either use the museum's handheld devices or download the app.

[fluxguide.com](http://fluxguide.com)



# No barriers, no boundaries

How to create an inclusive visitor experience  
An essay by [Sabine Seymour](#)



How do we explore culture in a future that is non-binary yet emotional, inspirational and educational? What is the role of data and technology in creating such an experience? And which models are there that connect the audience with the artist and designer in as yet unimaginable ways, such as peer-to-peer networks?



## Inclusive visitor experience

In this essay I want to extend the questions: How can we create an inclusive visitor experience at any physical or virtual venue and provide inspirations from the digital and analogue world? Although some ideas were explored almost a decade ago, they are now relevant, technically possible, and acceptable in society. I use the term “inclusive” to describe people with a physical impairment, people who are blind or who use a wheelchair. At the same time, I also use it to draw attention to discrimination in respect of the digital divide, the extent of which has become especially apparent during the pandemic. How can cultural institutions become more than just a “curated container” and participate in the creation of artistic experiences? What is the impact of the digital divide on the consumption of culture and the ability (or inability) to participate in a discourse? How can we experience a music performance at a venue in Vienna that was developed for real-time streaming if there is no high-speed internet – something that is still lacking in rural Austria?

### Digital obstacles

During the lockdown in 2020 due to COVID-19 I curated *Get.Inspired* at Ars Electronica as part of the Home Delivery conference. The project submissions ranged from teleportation in performances to virtual graduation ceremonies hosted by the campus student organisation Blockeley through the game Minecraft. The projects were created on the premise that the creative content would primarily be consumed online. This assumes that the visitors have a basic knowledge of digital tools and access to them. The technology that delivers digital or hybrid content that is highly engaging needs to be simple. The reason the internet was able to advance so quickly is because of an intuitive browser graphic user interface. The next phase of distributed technologies, which was the initial intent of the internet, will explode when such simplicity is achieved. NFTs (non-fungible tokens) provide artists and creators with a new way to directly engage with the visitors online via platforms like OpenSea, NiftyGateway and SuperRare, which charge a fee for their services. The artists, however, can choose to participate in the increase in value on a secondary market when a collector resells the artwork. Therefore, digital technologies not only provide a new revenue stream for artists, but also empower the creation of new ways to consume art.

### Diverse sensual experiences

Most digital experiences are visual, using the screen, VR (virtual reality) or AR (augmented reality). This raises the question of how to extend the sensory experience. Neil Harbisson

is colour blind and uses an antenna to translate colours into sounds. He describes himself as a cyborg and founded Cyborg Foundation with fellow artist Moon Ribas. The metaphor of an antenna can be used to create devices or even just mobile apps that offer an inclusive user experience.

What if the visitor experience could be extended to all senses? In 2014 Harvard professor Blake Armstrong developed the oPhone, a phone for aroma. The oPhone is an app that lets you choose a photo of a smell – say, a croissant – and a device that emits the smell of a croissant. I also physically visited the exhibition of the first installation of the oPhone at Le Laboratoire in Paris. Various installations explored the aroma of coffee, thereby extending the ability to explore the same subject with different methods.

The analogue exhibition *The Art of Scent* at MAD in New York in 2012 was an inspirational excursus into ways of exploring artistic interventions with a different sense, independent of a physical impairment. What if we can create a hybrid experience? One in the museum and one using an installation like oPhone?

### Inclusive design process

The artists Bojana Coklyat and Shannon Finnegan collaborated on the project *Alt Text as Poetry*, which is designed as an ecosystem for disabled people who have been asking for and producing thoughtful and creative approaches to alt text and descriptions for a long time. The artist Yo-Yo Lin developed *The Resilience Journal*, which she describes as a tool dedicated to visualising the overlooked soft data in our lives. Yo-Yo Lin created this journal as a means of tracking her illness experience in a way that felt more representative of how she experiences chronic illness. Such tools are essential to developing new modes of experiences. Yo-Yo Lin is also the founder of Rotations, a collaborative movement practice that works towards deepening and challenging our understanding of artistry, disability and access.

- 1 [ars.electronica.art/keplersgardens/en/get-inspired](https://ars.electronica.art/keplersgardens/en/get-inspired)
- 2 [www.youtube.com/watch?v=an\\_Qc0Q1MHE](https://www.youtube.com/watch?v=an_Qc0Q1MHE)
- 3 [www.cyborgfoundation.com](https://www.cyborgfoundation.com)
- 4 [www.indiegogo.com/projects/ophone-duo#](https://www.indiegogo.com/projects/ophone-duo#)

Grace Jun, a former student of mine at Parsons School of Design, launched OLS Open Style Lab to design functional, wearable solutions for people with disabilities. The work shows the importance of user experience design and of including visitors in the design process. The wearability of a piece of clothing or even putting it on can be difficult and even humiliating. This shows that we need to remove all obstacles, from public transportation in a wheelchair to the knowhow required to experience online content. To further develop meaningful, accessible and inclusive visitor experiences, I argue that it is imperative to create a taxonomy, a catalogue of all possible impairments, and to encourage novel approaches to design for the consumption of culture that is empowering and engaging for all.

## Sabine Seymour

Entrepreneur,  
investor and author

Sabine Seymour, PhD, is an entrepreneur, investor and author focused on distributed technologies and data for good to achieve a regenerative lifestyle. She advocates the democratisation of data to fund social and environmental impact endeavours. She is currently a Singularity University Portugal faculty member.

Sabine Seymour has been working at the intersection of fashion, technology and science since the mid-1990s and became the inaugural professor of Fashionable Technology, a term she coined in her first book, at Parsons School of Design in New York. She was featured for her life's work at the Museum of Applied Arts in Vienna in 2014.

- 5 [madmuseum.org/sites/default/files/static/ed/The%20Art%20of%20Scent%20TRP\\_0.pdf](https://madmuseum.org/sites/default/files/static/ed/The%20Art%20of%20Scent%20TRP_0.pdf)
- 6 [alt-text-as-poetry.net](https://alt-text-as-poetry.net)
- 7 [www.yoyolin.com/resiliencejournal](https://www.yoyolin.com/resiliencejournal)
- 8 [www.rotations.dance](https://www.rotations.dance)
- 9 [fashionista.com/2017/09/parsons-open-style-lab-clothing-for-disabilities](https://fashionista.com/2017/09/parsons-open-style-lab-clothing-for-disabilities)



# Rethinking audio storytelling

Interview with Peter Kollreider, conducted by Heinz Wolf

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Visitor Experience

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SONIC TRACES is an augmented reality audio experience that leaves audible marks. Real places are augmented with sounds, narratives and moods. The pilot project, developed by Thomas Aichinger and Peter Kollreider, tells the story of Vienna's Heldenplatz. While our eyes stay in our current environment, our ears go on a journey.

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Visitor Experience

*WHAT SETS SONIC TRACES APART AND HOW DOES IT DIFFER FROM CONVENTIONAL AUDIO GUIDES?*

Some traditional audio guides are well made, and we respect the effort that goes into them. For us though, they're usually just too much like an instruction leaflet, which is why we decided to push the limits of what is technologically possible and rethink audio storytelling. When you use our applications, you're immersed in the sound and in the stories, and you can walk through them. The sounds and stories react to the direction you take. This is a new way of communicating content. It imparts knowledge and is also entertaining. At SONIC TRACES, we take care of the content; technology is our tool.



1 Thomas Aichinger © Sonic Traces

*WHAT IS AUGMENTED AUDIO REALITY TO YOU?*

It's AR for your ears, while your eyes stay in your current environment. There's a special kind of tension that arises when visuals and audio diverge. As humans, we feel the need to fill in the gaps with our imagination. This allows us to build bridges to faraway times and places. It creates a connection between the content and the user.

*WHAT TYPES OF APPLICATIONS DO YOU ENVISION FOR CULTURAL INSTITUTIONS?*

There's huge potential. Cultural institutions are places that impart knowledge and are full of stories. Every good presentation stands on a strong foundation made of information and is topped with an appropriate layer of emotion. These two layers belong together. We hope our applications illustrate this. We believe that the technology should be invisible and not be a distraction. Our visitors just put on their headphones and start walking – that's it. And it works both indoors and outdoors, at cultural venues like museums, in parks and in archives.

*WHAT SHOULD CULTURAL INSTITUTIONS GENERALLY KEEP IN MIND WHEN WORKING WITH AUDIO?*

Audio is more than just someone reading a brochure out loud. Often cultural institutions think they need to say everything there is to be said (about an exhibit, for example). But for some pieces of content, the catalogue might be the better medium. The question is which content is suitable for audio and which isn't. I often wish institutions would make this pre-selection. If you think of the available media as overlapping, but without any one prevailing over another, then you can get the most out of each one. Audio is an excellent option for presenting characters and linking them to other topics in broader strokes. It reduces the distance between ourselves and the narratives, because we are encouraged to paint a picture of things in our minds by drawing on our own references and memories. Good audio content places great value on the voice. Voices connect humans. That's why direct quotes such as short statements are helpful. Musical anchors can help with orientation, ie knowing where we are in the story. And there are many other aspects that can optimise the experience. Today we can put visitors in an audio space and allow them to interact with stories. They experience a mood, not only a voice. The stories can even take into account where the person was before. That dramatically changes the parameters of how we can use audio.

*YOU ARE RESPONSIBLE FOR THE STORYTELLING AT SONIC TRACES. WHAT'S KEY TO TELLING A GOOD STORY?*

You need to consider the environment, the medium, the format and the technology, as well as the circumstances you're writing for, and





2

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Visitor Experience

### AND WHAT DOES THE FUTURE HOLD FOR SONIC TRACES?

We are constantly working on making the experience of stories more interesting and more interactive and immersive. We try to get the most out of the existing technologies – in order to then enhance the storytelling with sounds and voices. It's an eternal, and very satisfying, spiral. At the moment, we're putting the finishing touches on our indoor navigation for an exhibition at the Audioversum in Innsbruck in collaboration with artist Deborah Sengl. We're also experimenting with musical use cases and dedicating a lot of effort to exploring the interactive potential of storytelling.

[sonictraces.com](http://sonictraces.com)

“Audio is more than just someone reading a brochure out loud.”

Peter Kollreider

the corresponding advantages and limitations of those circumstances. That's key in my opinion. On top of that, when I'm doing my research, I always find it extremely helpful to talk to people; that way, you get the information and the emotion. The better the research, the smoother the ride. I generally tend to go one step too far and then rein it in again if need be. Usually some “extreme” aspect sticks and makes it into the final product. The many storytelling experts on YouTube can tell you about the other elements of good storytelling.

#### LOOKING TO THE FUTURE: WHICH INNOVATIONS OR TECHNOLOGIES WILL IMPACT OUR LISTENING EXPERIENCES IN THE NEXT FEW YEARS?

The latest earbuds (wireless earphones) already contain a lot of technology. They recognise the user's head movements and have built-in microphones that add the ambient sounds to the headphone content. I'm convinced that in the future more people will use these earbuds more often and for longer. They will navigate us, deliver information and entertain us, while still letting us hear the “outside” world. Because their microphones can amplify sounds, they'll even be able to serve as hearing aids, which will reduce the stigma of wearing hearing aids. Moreover, everyone's own individual ear and head profile will be stored centrally. This will make it possible to tailor 3D audio content to their specific physiognomy.

2 © Peter Kollreider

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Visitor Experience

## ● The public space as a museum

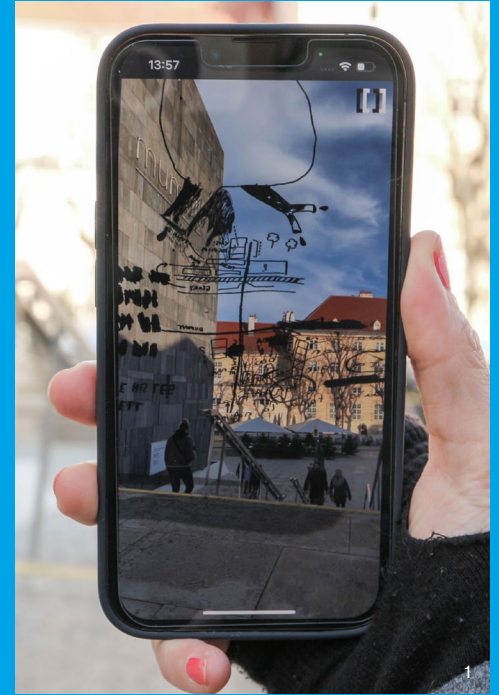
### Artificial Museum

Museums have more artworks by dead people in their storehouses than they could possibly exhibit. But what is art today? Who takes note of it? And how can the sheer limitless space of the virtual world help? That's what the Artificial Museum is all about.

Using a decentralised platform based on augmented reality, the Artificial Museum makes GPS-anchored, digital artworks publicly accessible. Public participation expands the Artificial Museum's “location”. Digital artefacts are placed in public spaces and can be explored either in the physical or in the virtual space. Besides stimulating the imagination, the aim is also to promote collaboration between the fields of performance, music, painting, sculpture, film, multimedia and 3D art.

The Artificial Museum was founded by SystemKollektiv, an affiliation of artists, programmers, scientists and activists. The Artificial Museum is currently building communities in other cities in addition to Vienna. In November 2021, for instance, SystemKollektiv organised a transnational, digital group exhibition at Vienna's MuseumsQuartier and in Toronto.

[artificialmuseum.com](http://artificialmuseum.com)



## ● Augmented listening

### NOUS

NOUS grew out of a Viennese educational project focused on digital handhelds and has since become one of the world's leading providers of digital solutions in the exhibition sector. Since its inception, the company has expanded to Berlin, Denver and Dubai and now specialises in digital storytelling and experience design.

In late 2021 the Austrian electronic musician Fennesz created an interactive, immersive headphone installation that transformed the Wiener Konzerthaus foyer into a customised virtual soundscape. The audio technology provided by NOUS Sonic allowed the audience to individually participate in and explore the soundscape. NOUS Sonic gives participants an augmented listening experience by precisely determining their position, movement and viewing direction. In the exhibition context, this results in multimedia content flows that interactively accompany visitors with location- and context-specific content.

[nousdigital.net](http://nousdigital.net)



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1 © SystemKollektiv  
2 © David Meran

# Archiving &

- Preserving and (further) developing
- The archive as an emotional filter
- Identity and memory
- Digital memory
- Creating open classification systems

# Documentation

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How can digital technologies be used to optimise archiving and documentation processes?

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What possible solutions are there for archiving digital cultural assets?

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What role do augmented reality (AR), virtual reality (VR), electronic displays and projections play in this context?

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How can digital solutions preserve our memories and refresh them?

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Which digital strategies can make analogue archives more accessible? And how can this generate new income streams?



# Archiving & Documentation

Archiving and documenting cultural goods



Physical objects react to touch and to use, to humidity and sunshine. They are always fragile to a certain degree and subject to a more or less speedy process of decay. A digital reproduction, on the other hand, once it has been virtualised, is no longer subject to the context in which it is displayed. While the original can be stored under ideal conditions, the digital “copy” can be reproduced, expanded, restored, scaled or broken down into its individual components any number of times. The digitisation processes that make this possible also encourage users to engage with the object at a deeper level or intensify their emotional connection with it. The DISC3D high-performance scanner (page 59), for instance, enlarges even the tiniest insects so that they can be studied; the FloatScans technology (page 59) allows rare exhibits to be viewed from all sides and creatively incorporated in new presentation contexts. Technology can restore an object’s original condition and also visualise the context of its use. While physical objects are bound to a certain location, digital copies can travel, be shared with other institutions and projects, and be integrated into new artistic contexts. This freedom from material constraints opens up new possibilities, and principles from one area of life can be translated into other areas. Bionics, for example, takes observations from the animal kingdom and applies them to constructions for the aviation industry or for nautical and maritime transport.

## Collecting for the machine

These developments didn’t just appear out of thin air. The first conference on the topic of computers and their potential applications in museums was held at the Metropolitan Museum of Art in New York more than half a century ago, in April 1968. Initially, machine-readable collection systems were developed primarily to record, inventory and structure existing collections. The process of digitising objects in 3D formats took place around the same time that touchscreens and interfaces were emerging. Serious efforts in the realm of augmented, virtual and extended reality aiming to make archives “experiential” are a more recent development. Behind the scenes, digital technologies are optimising planning processes, conserving resources (time, logistics, travel), bringing international teams together, visualising design drafts and making work processes easier. At the same time, it is important to have

open conversations about the ethical implications of big data, deep learning and artificial intelligence, which are being used in more and more areas. And then there is also the question of how to preserve digital content and transfer it into long-term archiving systems, as access to content always depends on the end devices and carrier media, and these do not have infinite lifespans.

## Creating democratic knowledge systems

The idea of exploring the world with the help of a linguistic classification system was famously manifested in the mid-1700s in Diderot and d’Alembert’s *Encyclopédie*. One hundred fourteen writers contributed to this *Systematic Dictionary of the Sciences, Arts and Crafts*. The Wikipedia online encyclopedia is regarded as the modern equivalent of Diderot and d’Alembert’s mammoth project. It was launched in 2001 with the aim of initiating a perpetually self-revising process of collecting shared knowledge.

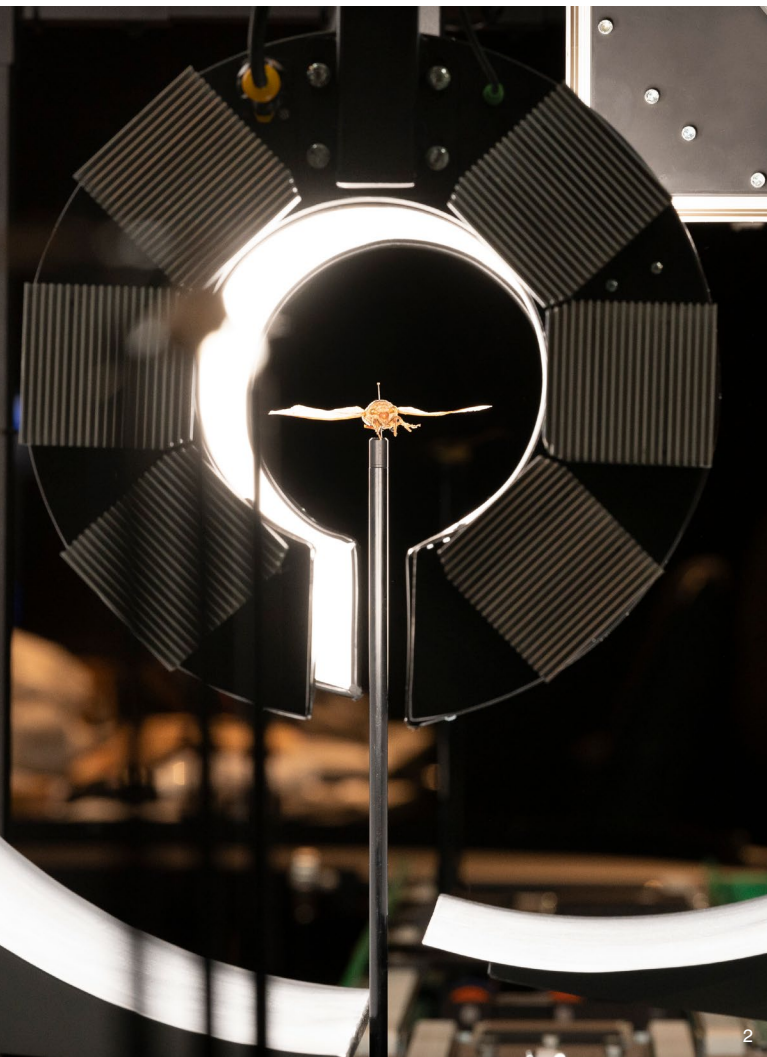
We can learn something from this self-updating collective memory with the help of multiple contributors and cooperative participation, eg by collaborating with the Wikipedia community. The first official Transcribathon – an online format where a large number of laypeople transcribe and annotate historical artefacts – was organised by the Folger Shakespeare Library in 2014. Its volunteer-based approach appeals to our inner Sherlock Holmes and our need to feel clever and useful; at the same time we are making a valuable contribution to an important undertaking. Well-planned research assignments, a team that is competent in both content and technology, and a specially developed digital infrastructure are all key to successfully realising these kinds of crowdfunding projects.

## The archive as an emotional filter

Digital devices take the emotional value of memories into account. The iPhone’s photo app, for instance, regularly reminds us of past events, and social media bring to mind special moments, experiences and occasions. Our memories strongly inform our sense of identity. And cultural institutions are part of a collective memory structure. They reconstruct and represent how we see, or want to see, ourselves as a society. Archives and collections establish structure, provide an overall view and present a degree of order in response to the anti-science narratives egged on by fake news and conspiracy theories. They are places where we can learn and apply techniques of self-reassurance. Digital technologies support these processes; they offer models that allow us to try things out, promote categorical thinking and encourage us to engage with the past and future in a fun way.

## Objects from the past as pillars of memory

Many everyday items have disappeared in the course of digitalisation; our language still contains relics of them, eg the phrase “picking up the phone”. This makes it all the more important for generations to show each other things: parents and grandparents using objects to tell stories about their own childhood, (grand)children adding these objects to the picture they have in their mind’s eye and expanding their understanding of the recent past. By the same token, looking at formerly familiar objects can help reactivate dementia patients’ memories. Melodies, verses or lines of poetry from their childhood can trigger powerful emotions and revive moments from a previous identity. By asking, “Do you remember when ...?”, we invoke a shared experience and foster closeness and emotional connection. Education formats for dementia patients can also be translated into the virtual space to reach people with limited mobility, something the Albertina has already implemented.




## ● Next-generation art patronage

### Artifund

Non-fungible tokens (NFTs, for short) are digital, tradeable goods – from music to digital art. They are non-exchangeable, or non-fungible, their value varies and, as part of a blockchain, each NFT has a uniquely identifiable owner. Even before Beeple’s *Everydays: the First 5000 Days* was sold for USD 69 million at Christie’s, NFTs were already being hyped in the art world. But how can museums and other cultural institutions take advantage of this technology in the long run?

Since 2019 the Dutch company Artifund has been looking into how NFTs can be used to develop solutions for the cultural sector. Founder Gustaaf Dekking and his team are developing a platform that will allow museums to build a community of patrons and sponsors and to monetise their own collections through licensed, digital collectibles.

[artifund.com](https://artifund.com)



ARTIFUND

**Invest in culture.**  
Join the next generation of art patrons.

We’re building a platform where you can buy, collect and trade officially licensed, digital collectibles from your favourite museums.

[Sign up for early access](#)

### Archiving & Documentation



## Collecting digital objects

### With Natalie Kane and Marlies Wirth

Within a short space of time, digital objects such as photos, videos and memes have not only changed how we communicate and find information, they’ve become our interfaces to reality – the screens through which we experience the world. So that makes me wonder: in a world where our devices are constantly upgrading, how can we preserve our current digital culture for the future?

In this episode of *The Culture & Technology Podcast*, we look at the role of museums in collecting and presenting the digital objects of today, for tomorrow. Our first guest is Natalie Kane, Curator of Digital Design at London’s Victoria and Albert Museum. From Vienna, we’re joined by Marlies Wirth, Curator of Digital Culture and Head of the Design Collection at the Museum for Applied Arts in Vienna.





# Archiverse: Perverting the Metaverse

An essay by Paul Feigelfeld




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“The historian of tomorrow will be a programmer or he will be nothing.”

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Emmanuel le Roy Ladurie, *The Territory of the Historian*. Paris, 1973

Interconnective digitalisation turned arcane – ie inaccessible but at least dispersed – archives into centralised databases, mass storage media, profit machines. From the mid-2000s onwards, platforms were built to make it easier to extract and refine the new resource, aka data. The buzzword of the hour was “new oil”, and platform and surveillance capitalism emerged.

## The hierarchical archive

The words archive and hierarchy essentially have the same origin: ἀρχή archē – in English, the beginning, origin, dominion, power. The hierarchising aspect of archiving and data storage is not only the mere accumulation but also the relativisation of the connections between what is stored and, in a broader sense, what is not stored. It isn't just the *what*, but above all the *who with whom* that is especially conducive to generating profit.

The generation of Silicon Valley billionaires who declared the Metaverse the new internet and a new brand in 2021 were barely ten years old when the term was first used in *Snow Crash*. Stephenson invented the Metaverse for one reason alone: to illustrate the consequences of those media technologies. The question is whether Zuckerberg & co ever read the novel. If not, that would explain their sinister, naive, dystopian approach to a ubiquitous system of “hierarchiving” our existence. And if they have, even more so. There's no other way to explain why the tech giants are all using a clearly negative term for a new, even more comprehensive surveillance capitalist world that purports to bring us salvation. The intention behind the Metaverse is to be an “embodied internet” that completely absorbs us and dissolves the boundaries between those parts of the world, of life and of existence that the platforms previously found inaccessible or at least difficult to access. Fully immersive virtual reality, meetings, distance learning and remote work in virtual spaces, sport ... The aim is for all kinds of activities to be possible in the Metaverse – all the while becoming parameterised and monetisable as tradeable metadata.

Twenty years ago Wolfgang Ernst, a media theorist from Berlin, sensed “stirrings in the archive”. In 2002 the rule of the philologically musty card index box system in the archives seemed to be over; in its stead came the promise of a new, *an-archiving* “oscillation between a cemetery of facts and a garden of fictions” that would henceforth flicker through the lovely new internet.

In 1992 – ten years before Ernst's vision of an imminent era of creative, open places of knowledge, replacing the closed, archaic archives – the science fiction author Neal Stephenson dreamt up a virtual world for his famous novel *Snow Crash* which he dubbed the “Metaverse”, a name that is not unfamiliar to us these days. Stephenson's Metaverse wasn't a utopia, but rather – as is typical of good science fiction – a logical further development of various spaces of possibility. As Stephenson says, we always end up repeating the same patterns and establishing the same power imbalances and inequalities in the virtual world as we do in the so-called real world. Or we might even make things worse.

Today, in 2021, we are living with the comprehensive political, social, economic, ecological and psychological consequences of the internet. During the decade that lay between *Snow Crash* and *Stirrings in the Archive*, the big dream was to democratise, heterarchise and decentralise knowledge and access to knowledge. The truth of the matter is that this was, and still is, pure fiction.



As such, Meta, as the Facebook corporation now calls itself, has no connection whatsoever with metaphysics or meta humour. Contrary to popular opinion, that wasn't the case in Aristotle's day either. Even back then, meta was a preposition used in the context of archives, libraries, media: *Metaphysics* was the work that originated after or *next to Physics*. Meta is power. From now on, Meta will always be *after* or *next to us* – whether we want, know, notice it, or not. Archives and thesauruses become safes, data become bank transactions, and cultural and media technologies for organising and searching become search functions that create power structures instead of order. These processes may not be new, but the “extension of the domain of struggle” (Michel Houellebecq, *Whatever*, 1994) is unmitigated.

Sadly, the stirrings that Wolfgang Ernst sensed back in 2002 probably weren't a global spirit or a new global knowledge accessible to all, but rather a mining vehicle extracting copper, coltan, lithium, etc, from the earth or the ocean bed for the production of semiconductors and rechargeable batteries. It is the “wretched of the earth” (Frantz Fanon, *The Wretched of the Earth*, 1961) who toil in these copper mines. At the same time, they are the ones who are not represented in the image databases that feed the machine learning systems for individual facial recognition, or who are classified as monkeys; the perpetuation of racist and sexist discrimination is going strong in the bias of databases. Like when Google Images tagged two people of colour as “gorillas” several years ago, and Nikon cameras assumed that Asians were simply squinting. The carefree Metaverse has a real-life equivalent in the form of discrimination and the exploitation of resources and third-world populations. So what now?

## The role of the cultural institutions

What role do our cultural institutions, schools, universities and museums play? What is their responsibility in a global, technological society that is becoming more and more divided, that increasingly excludes and shuts out? Do our archives belong to us, in a time when we no longer own our data? How can we transform the stirrings in the archive and turn the Metaverse into an “Archiverse” that learns from its own history and has a memory?

The answers are both manifold and difficult. Archives are shaped by the questions asked of them. This means that if they aren't used, the number of interpretations diminishes. But because you could almost say that the existence of things and people today is measured by their appearance in Google's top search results, we need to rethink the culture of asking questions and learn new techniques: serendipity, ie finding without seeking; coincidences, something classification systems also always offer, such as the book you notice when you turn around after taking the book you were actually looking for off the shelf; the gaps in collections, where unexpected things may be found ... And playful, artistic, critical and funny perversions are also essential for activating archives.

At the same time, word of the existence of archives and their accessibility must be spread more widely. Like media, archives are only what they are if they are used. If they aren't used, if the knowledge they store is not processed, they are non-places in a knowledge vacuum. Archives are not behind the scenes of institutions. They *are* institutions. They may function differently in terms of time, but they inhabit the same space as us. This is why they must be made more visible. Digital tools can make it possible to experience such places and their resources, as demonstrated by the ONB Labs at the Austrian National Library: machine learning can do other things with large data





volumes besides convert them into sellable metadata. Institutions can make a big contribution to a more sustainable approach to the world's knowledge, as long as they keep working towards democratising and opening their archives in creative ways – both in the real and virtual worlds. To do this, they will also need new models for intellectual property that protect and remunerate the knowledge producers without selling everything to monopolistic publishers and online service providers.

After all, our planet is, and always has been, an archive in itself: we can trace back millions of years in rock layers, tree rings, sediment deposits on the ocean bed, in permafrost and the Arctic ice; and we can look ahead into both our immediate and distant futures in the form of marine microorganisms that serve as living archives for microplastics. The so-called Metaverse of the global corporations is busy destroying the climate and extracting resources from the earth. This will result in the disappearance of the archives in the form of eternal ice or the ocean bed. The same can be said of us, the suppliers of raw materials.

Transforming the Metaverse into an Archiverse needs to be a priority.

1

The ONB Labs offer digital collections and metadata from the Austrian National Library to promote and inspire research, active experimentation, and artistic and creative work. Selected datasets were prepared and documented for the ONB Labs. Read more at: <https://labs.onb.ac.at/en/>



## Paul Feigelfeld

Professor for Knowledge Cultures in the Digital Age

Dr Paul Feigelfeld is a professor for Knowledge Cultures in the Digital Age at the Braunschweig University of Art and university assistant for Cross-Disciplinary Strategies at the University of Applied Arts Vienna. He studied Cultural Studies and Computer Science at the Humboldt University in Berlin, where he was also an assistant to Friedrich Kittler, chair for Aesthetics and History of Media, until Kittler's death in 2011. In 2019 he curated the Vienna Biennale exhibition *Uncanny Values. Artificial Intelligence & You* at the MAK Museum of Applied Arts in Vienna.

1 © Thomas Rosenthal  
2 © FloatScans

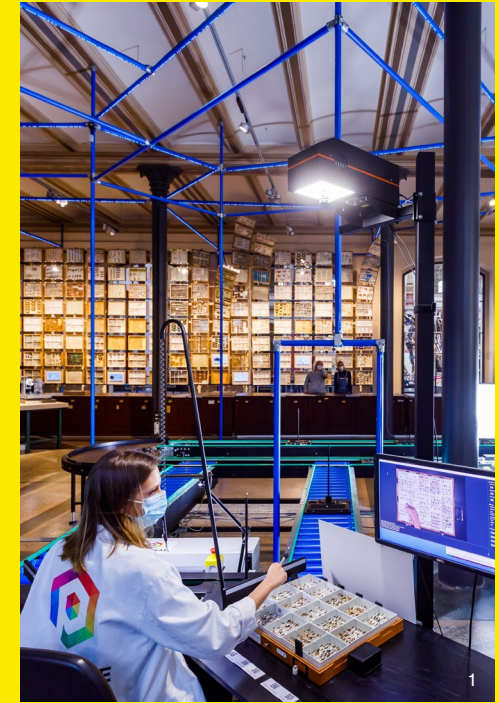
## ● Miniature creatures – scanned and scaled

### DISC3D

The Darmstadt Insect Scanner (DISC3D), located at the Natural History Museum (Museum für Naturkunde Berlin) in Berlin, is capable of scanning vulnerable, fragile objects and creating precise images of even the tiniest specimens of no more than a few millimetres in size. In a process lasting several hours, DISC3D takes approximately 25,000 high-resolution photos from 400 perspectives. These photos are then used to generate a 3D model that can be scaled as desired.

The museum plans to create a database of 30 million interactive models over the next few years. The aim of this open research project is to stimulate worldwide interest in the collection beyond its brick-and-mortar space. Frederik Berger, head of the Collection Digitisation Department, sees great potential in the symbiosis between scientific exploration and artistic creation: “Berlin’s medical research, art and startup scenes work with the collection and draw inspiration from it.”

[dinarda.org/disc3d](http://dinarda.org/disc3d)  
[museumfuernaturkunde.berlin/](http://museumfuernaturkunde.berlin/)



## ● Collections in 3D

### FloatScans

What started with a visit to a museum storage warehouse became the Amsterdam-based company FloatScans. 90% of the world's art and cultural heritage is stored in warehouses and hence inaccessible to the public. FloatScans aims to solve this problem and promote the digitalisation of the cultural sector with its 3D scanning technology. The push of a single button activates fully automated scans that digitise individual objects in situ within 15 minutes. This makes it possible for collections and archives to be digitally explored, connected and preserved.

Thanks to their extremely high resolution, the scans capture the geometry and colour of the objects, and how they interact with light. The digitised objects can then be used for interactive storytelling – via HTML code, augmented reality on mobile devices, or on social media.

[floatscans.com](http://floatscans.com)



# Exhibition &

- Immersive spaces through virtual architecture
- Defying gravity
- Making the invisible experiential
- Real bodies in virtual spaces
- The art of cyberflânerie

# Stage Design

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What new digital ideas could exhibition and stage design benefit from?

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How can digital strategies enhance analogue formats?

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Which interactive elements are a good idea, and how can their use and maintenance be organised efficiently?

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How can architecture and design meet visitors' evolving expectations?

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Which digital tools in the exhibition and stage design sector allow audiences to experience cultural production processes?



# Exhibition & Stage Design

New ways of staging



“The office is also always a stage on which the performers act out a work scene.” This headline, featured in *Die Zeit* on 1 July 2020, points up how theatrical mechanisms are at play in everyday activities. Theatrical imagery is always useful in contexts that aim to have a formative impact on our perception. As the sociologist Erving Goffman already stated in the 1950s in his book *The Presentation of Self in Everyday Life*, our daily lives are a stage. Each place has a different predominant script, which is activated as soon as we enter it. People behave more reverently at church, for example, than at a football stadium; and clubs have different social codes than concert halls. This principle must also be applied to virtual spaces. Many virtual spaces do not yet have such clearly defined behavioural patterns and still need to actively negotiate and shape them.

## Multisensory experience design

Cabinets of curiosities, the precursors of the modern museum, owed their appeal to the beauty of imperfection and the power of wonderment. The obligatory crocodile suspended from the ceiling affords an astonishing view of its underside – a literal change in perspective. Digital experiential spaces tap into the creative potential in unusual arrangements and in breaking with familiar visual habits. The London-based collective Marshmallow Laser Feast visualises the hidden forces of nature and uses virtual reality to open the door to a world that defies sensory perception, as co-founder Barnaby Churchill Steel explains in *The Culture & Technology Podcast* (page 33). One of the museums featuring Marshmallow Laser Feast’s virtual worlds is the innovative Nxt Museum in Amsterdam, which presents new media art in space-filling installations. Learn more about Nxt Museum in our interview with founder and director Merel van Helsdingen (page 66).

## Virtual architectures shape how we think and feel

The virtual stage has sheer unlimited possibilities. While Elon Musk dreams of colonising Mars, digital technologies have long been able to not only explore new spaces, but to uniquely design them from scratch and even invert the laws of physics. Deliberations on the aesthetic response pick up on this: What do visitors actually stand to gain from entering the virtual world? What should they feel and experience? Digital spaces are always subject to questions of representation; on social

media this includes the question, How do others perceive me? Developing aesthetics and options for action from the users’ perspective can prevent them from feeling frustrated or taken by surprise. Inclusion aspects should also be taken into consideration from the very beginning of the design process.

In the past few years, experience has shown that minimising entry barriers is key to a digital offering being used: Do I need to bring my own hardware? Do I have to install an app? Learn my way around new software? The threshold to access should be as low as possible, and the technologies used should be those that people already have (eg smartphone, browser). This motivates casual users to try out new experiences. Well-structured, compact introductory tutorials fill users in on any requirements for the virtual experience and get them excited for what lies ahead. If these are seen as more than just plain instructions for use and if they are integrated in the overall experience, the aesthetic component will stick in users’ minds, even outside of the cultural institution’s opening hours and beyond their brick and mortar.

## The art of cyberflânerie

“Because curiosity centres on observation, the flâneur is its pinnacle,” Walter Benjamin wrote in his examination of Baudelaire’s work. Today, what better way to stroll around in search of things to see than in the virtual cosmos, which is strongly based on visual perception? But in 2012 *The New York Times* pronounced the cyberflâneur dead – not only because one of the main characteristics of the (predominantly male) flâneur, namely anonymity, is not guaranteed on the internet. Rather, it is because the internet is all about efficiency, which counters the idleness of association-driven strolling and squeezes out the future once painted as playful and full of accidental discoveries. See also Paul Feigefeld’s comments on serendipity (page 54).

Cultural content is a valuable counterweight to the performance-oriented thinking of technologically supported processes. It defies the consumerist logic of the internet and invites people to find their own pace and soak in the mystery and ambivalence: from “wow” to “awe”, the contemplation of a picture as a meditation technique, the digital garden as a place to forget time.

## Real bodies in virtual spaces – who am I when I enter a virtual space?

What is the relationship between the virtual space and its audience? What effect does the architecture of the virtual space have on its visitors, and how can immersive design encourage them to interact? These are some of the questions the multidisciplinary design studio Space Popular explores (page 72). Visual reference systems based on real, recognisable architecture, and iconic elements facilitate navigation within the digital offerings. Drawing on memories or prior physical experiences also intensifies cultural experiences. If the virtual space is location-based, multiple interrelated levels between the real and the virtual space can be put to good use. While consciously designed visual interrelations reinforce the experience of “authenticity”, the targeted integration of interfaces can guide attention and immersion: whoever is active – or even better, interactive – does not get distracted.

The principle that reality should not be replaced but rather extended is especially applicable to the design of extended reality (XR) experiences. A virtual replica of a building, for instance, allows us to explore its overall architectural concept, also from perspectives that only birds and air travellers would otherwise get to experience. In this context, Bika Rebek (page 65) regards 3D modelling and scanning methods as “experimental tools for studying, archiving and evaluating architecture”. The design parameters needed to achieve the desired level of immersion vary greatly. Under certain circumstances, an abstract visualisation that actively requires users’ imagination to supply the missing information can bring about a stronger emotional engagement than a faithful replication.



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## ● Design that creates itself

### Process Studio for Art and Design, Some Place Studio & MAK

In 2019 the MAK Museum of Applied Arts Vienna explored the theme of artificial intelligence (AI) from an art and design perspective in an exhibition entitled *UNCANNY VALUES. Artificial Intelligence & You*. The main focus was on questions relating to culture and technology, humanity, power, control and orientation in the “uncanny valley” of AI.

Process, a Vienna-based design studio, created, among other things, the exhibition graphics, such as AI-controlled forms of communication and installations. Their so-called Almojis, ie AI-generated emojis, self-generate on the basis of a dataset of several thousand commonly used emojis. Each Almoji brings new, previously unknown “artificial” emotions to life. Five AI Pod stations distributed throughout the exhibition gave the audience the opportunity to experience concrete AI applications. The exhibition design was developed by Some Place Studio, which created a fitting setting for the multimedia installations.

[uncannyvalues.org](http://uncannyvalues.org), [process.studio](http://process.studio),  
[someplace.studio](http://someplace.studio), [mak.at](http://mak.at)



2

3

## ((E)) The architecture of culture

### With Bika Rebek and Agustin Schang

Until recently, spatial experiences have been resolutely material, taking place within cities, buildings and rooms. Over the past year, however, the pandemic has moved museums, performances and gatherings online, into virtual environments from games and video calls to VR hubs.

To get the lowdown on how technology is rebuilding our notions of space, episode 6 invites two architects and curators, Bika Rebek and Agustin Schang, to share their take on the shifting form of architecture within our emerging hybrid reality.



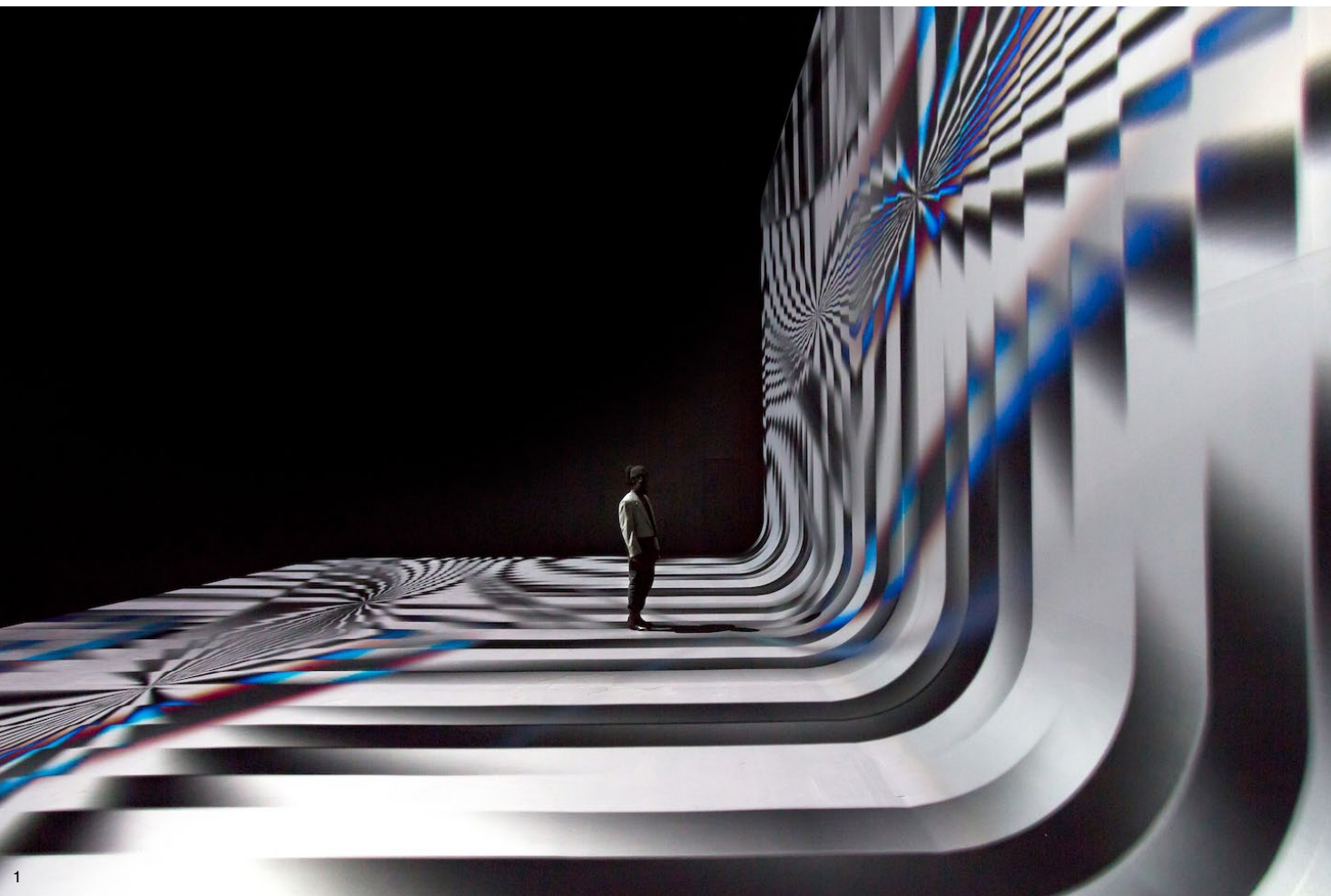
The Culture & Technology Podcast  
episode 6



# The freedom of the digital space

Interview with Merel van Helsdingen,  
conducted by Eva Fischer

66



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Exhibition & Stage Design

*MEREL, YOU ARE THE FOUNDER AND MANAGING DIRECTOR OF NXT MUSEUM, WHICH USES "MODERN TOOLS TO EMBODY MODERN TIMES". CAN YOU TELL US WHAT THESE TOOLS ARE?*

When we say "modern tools", we mean the latest technology used by artists to create and show their works. In past times, those would have been the latest brushes and newest paints, or the latest cameras for photography. Today's "modern tools" are the latest technological developments in software, such as Unity for game development, or TouchDesigner or other kinds of digital tools and hardware, like projectors or speakers – from 4D sounds to tracking devices.

*NEW TECHNOLOGIES CHANGE HOW WE CREATE, RIGHT? HOW WE LEARN FROM OR COMMUNICATE WITH EACH OTHER. WHAT IS THE BIGGEST RECENT TECHNOLOGICAL EVOLUTION, OR EVEN REVOLUTION, THAT CHANGED THE WAY YOU WORK?*

I think a recent evolution that is having a really big impact on the art world is blockchain technology. For the first time in history, digital art can not only be screenshotted or filmed or recorded and shared by everyone, but can finally be fully monetised, which means that the value actually goes back to the creator. Artists become part of a global and decentralised environment where everyone can drop and sell their artworks and also where everyone is invited to buy. In addition to monetising digital art, this also opens up the space for collecting and selling art to a much broader, global audience.

*DO YOU THINK THIS ALSO CHANGES HOW WE CREATE ART?*

Yes. Coming back to "modern tools to embody modern times", I think blockchain gives artists the opportunity to develop and globally show their art in the metaverse. And what I really like is that this digital, virtual world has fewer rules and is not bound, for example, to be part of a white cube where the artwork has to hang on a certain wall, or where you have to think about how big the canvas can be or how much light is available for photography or sculpture. In this digital realm, there are almost no boundaries anymore, which means a lot of freedom. And I appreciate that artists use this freedom to create works of art that are technically highly advanced and also significant and critical. An example of this at Nxt Museum is *Zoom Pavilion*, an interactive video installation that uses facial recognition software and

surveillance technology to make us aware of the surveillance industry we live in. To me, this is a perfect example of an artist using the tools of our time to shine a critical light on current developments and the impact of technology on our lives.

*IT'S VERY INTERESTING TO HEAR YOU TALK ABOUT THE FREEDOM OF THE DIGITAL SPACE AND THAT ARTISTS ARE USING THAT VERY SPACE TO REFLECT CRITICALLY. WHAT I FIND INTERESTING ABOUT BLOCKCHAIN, OR MORE SPECIFICALLY NFTS, IS THAT IT'S NOT JUST ABOUT MONETISATION, BUT AS YOU SAID, ABOUT POTENTIALLY CHANGING THE FLOW OF MONEY. CAN I ASK YOU AT THIS POINT WHAT YOUR BUSINESS MODEL OR FUNDING SITUATION LOOKS LIKE?*

We increasingly see brands that want to be part of what is culturally relevant. They want to move away from just showing their product to doing something that adds value to community building and to the world of arts and culture. For instance, we recently had two brands supporting us in commissioning works for our space, which helped us to create new art during the six-month lockdown in this time of crisis.

Usually, ticketing is our main source of revenue, together with our restaurant – although it is still in the style of a pop-up owing to the pandemic.

We are a privately funded museum and have several private as well as strategic investors from the world of music, arts, technology and theatre. So we have a diverse group of partners from relevant backgrounds that can also add value.



“Using modern tools to embody modern times.”

Merel van Helsdingen

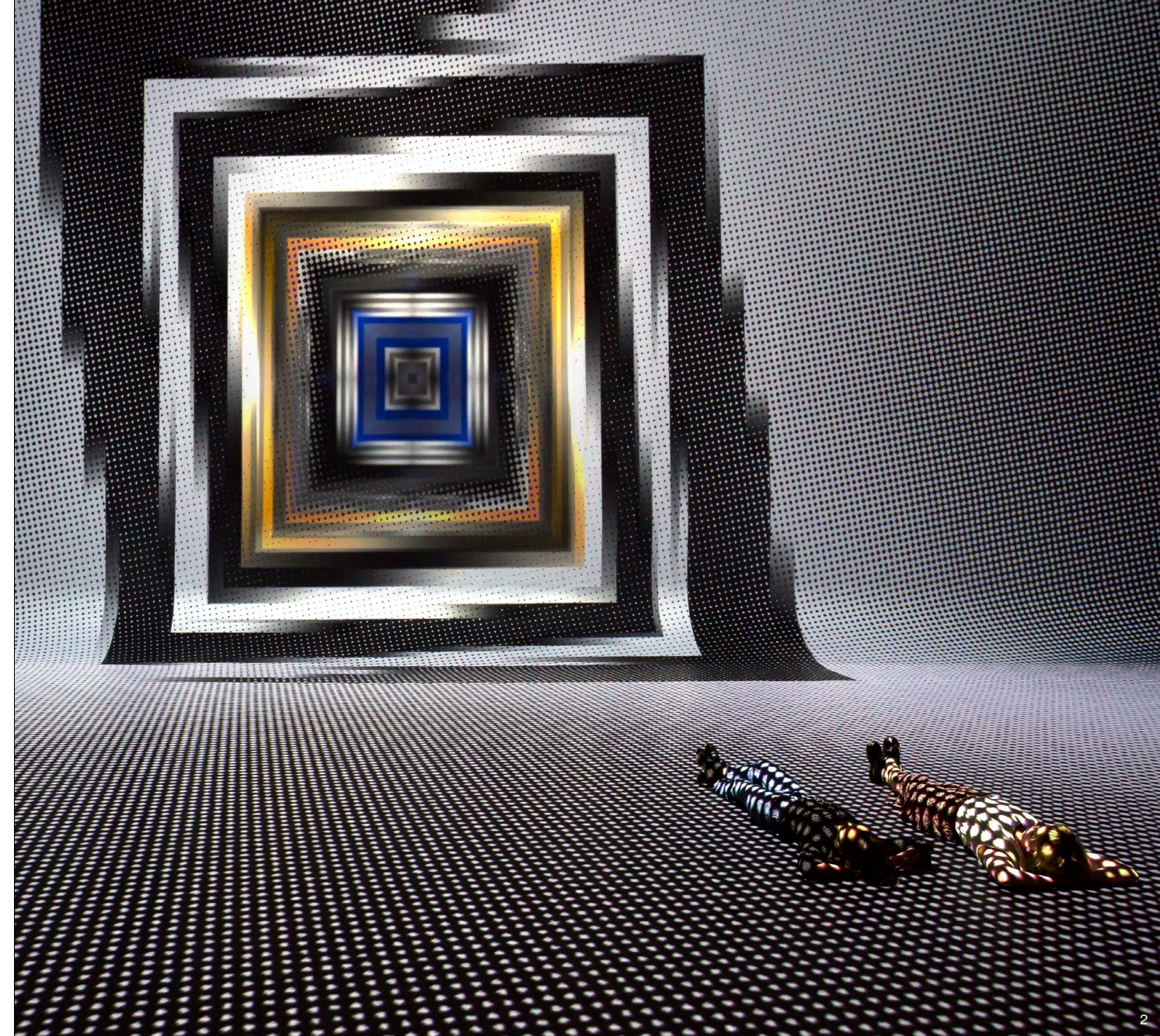
*COMING BACK TO THE FREEDOM IN DIGITAL SPACE: FOR ME, HAVING NO OR FEWER BOUNDARIES ALSO MEANS THAT I CAN REACH MORE PEOPLE AND ULTIMATELY ENGAGE THEM. AS THE MANAGING DIRECTOR OR WITHIN YOUR CURATORIAL TEAM, DO YOU ALSO THINK ABOUT HOW TO CONNECT WITH YOUR AUDIENCE AND BUILD A COMMUNITY?*

We have attracted many different types of people, also people that would normally not go to a museum, because they find it too high-brow or complex, or they think it's too boring or quiet, or simply not for them. And when they leave Nxt Museum, they tell us that it had a great impact on them. This is what art can do, and we hope that our audience leaves us not only having had an incredible experience, but also having learnt about the impact of technology on our lives and future.

Our public programme is all about education, creation, stimulation and discussion. We offer educational formats that invite our audience to engage with art at the intersection of old and new media, technology and science, and research. Studio 404, for instance, is a special format in collaboration with Samsung, where we teach youngsters aged 16 to 24 about creative coding and filter or augmented reality creation. Many of these new technologies and skills are not yet taught in schools, so students would have to go to a specific kind of art school to even come into contact with such topics. There is a huge gap in that kind of education, so we are trying to bridge that gap a bit and give young people skills, inspire them and show them what will be possible in the future.

*YOU SAY THAT YOU INVITE OTHERS TO USE THE AUDIOVISUAL LANDSCAPE IN YOUR MUSEUM TO BE CUSTOMISED TO THEIR VISION, WHICH I FIND VERY SMART AND AN ULTIMATELY SUSTAINABLE WAY TO USE THE INFRASTRUCTURE THAT YOU BUILT. HOW DO YOU OPEN YOUR MUSEUM UP IN THAT SENSE?*

We want to create an open space for experimentation. We have artists in residency programmes and don't only show existing artworks but invite artists to use our canvas to create new works and performance formats. Not many people have ever been exposed to such a large canvas and such first-rate technology, hardware and the newest projectors. So we see an educational and creation purpose and want to support the arts and give artists this very special canvas to create, experiment and make new work.





*WHEN YOU TALK ABOUT YOUR IMMERSIVE ENVIRONMENT AS A SPACE FOR CONTEMPLATION, FOR GETTING STIMULATED AND INSPIRED OR "OPENING YOUR MIND", I IMAGINE IT'S A HUGE CHALLENGE TO MAKE PEOPLE FEEL COMFORTABLE. HOW DO YOU MEET THE CHALLENGE OF CREATING A SAFE SPACE FOR A VERY DIVERSE GROUP OF PEOPLE?*

We thought and talked about it so much before we opened. For us there are three really important elements:

One is the importance of our hosts' diversity. We deliberately decided not to let our audience go through the exhibition on their own, but to be guided. The seven hosts at various positions in the museum have very different international and ethnic backgrounds so that everyone feels represented in some way.

The second element is the curation. We really pushed to have a diverse group of artists representing different people and different types of communities in the world. And it's very hard to find, for example, female artists when it comes to large-scale tech arts, but we have managed to create a mix of Chinese artists, African-American artists, female artists from the Netherlands, international female artists. We really try to make every visitor feel represented in either the artists or the language of the artworks.

And the third one is sound and light – also in a very literal sense. We deliberately moved away from a white cube, a quiet space with lots of text on the wall and opening hours from nine to five. Instead, we decided to be a big black box that is open from 10am until 10.30pm. And every room has a certain sound. People can touch the works, they can move and interact with the artworks, run around, dance, scream! So it's much less of this silent, awkward experience. Rather, everyone can simply express themselves inside the work.



### Exhibition & Stage Design

3 Nxt Museum: Zoom Pavilion by Rafael Lozano-Hemmer  
in collaboration with Krzysztof Wodiczko  
4 Merel van Helsdingen © underpromise  
5 Eva Fischer © Matthias Heschl Studio

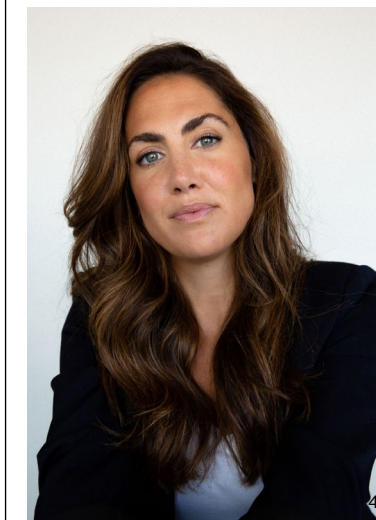
## Merel van Helsdingen

Founder and managing director of Nxt Museum

Merel van Helsdingen has worked in Marketing & Partnerships for tech, music and entertainment companies in London. Merel's passion for new media, film and music, combined with her entrepreneurial flair, inspired the idea for Nxt Museum in 2018.

She built the museum from scratch, leading on all aspects, from the concept to fundraising and artist liaison, with the support of her network of advisers.

She holds a bachelor's degree in Media & Culture and a master's degree in Marketing.



## Eva Fischer

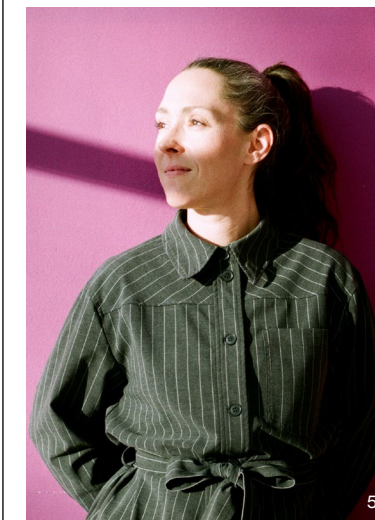
Artistic director of sound:frame and CIVA

Eva Fischer is an independent curator, cultural manager and lecturer in the fields of experimental media, immersive art, and art & technology.

Based in Vienna, she has been the artistic director of Vienna's new media art festival CIVA – Contemporary Immersive Virtual Art since 2021.

In 2020 she founded the virtual exhibition platform Area for Virtual Art (sound:frame x Pausanio), together with a team of artists, curators and cultural managers. From 2007 to 2016 she directed the sound:frame – Festival for Audio-visual Art.

In 2009 she founded the eponymous agency sound:frame – Immersive Art, which was expanded to a co-production office in 2016.





# From physical to virtual design

Interview with [Lara Lesmes \(LL\)](#) and [Fredrik Hellberg \(FH\)](#), founders of Space Popular, conducted by [Cornelia Lein](#)

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*IN YOUR WORK AS A DESIGN AND RE-SEARCH STUDIO, YOU HAVE BEEN EXPERIMENTING WITH VIRTUAL SPACES FOR EXHIBITIONS BUT ALSO FOR FESTIVALS, SUCH AS THE 2020 PUNTO DE INFLEXIÓN (TURNING POINT) FESTIVAL, THE FIRST-EVER ARCHITECTURE CONFERENCE HELD ENTIRELY IN VIRTUAL REALITY. WHAT WAS YOUR STARTING POINT? AND WHICH INSIGHTS DID YOU GAIN FROM WORKING WITH THE ONLINE-BASED VIRTUAL COLLABORATION PLATFORM MOZILLA HUBS?*

LL: We had been experimenting quite a bit with hubs, different designs and technical solutions before we got commissioned for Punto de Inflexión. For example, we created side events for conferences that showed us how gathering in this sort of way could work. We also did tests with children, where we observed how they interacted in virtual space and learned what they thought was fun.

FH: We chose to work with Mozilla Hubs because it's open source and run by a nonprofit. This is very important to us, because every choice you make in the immersive internet is like a vote on the kind of metaverse we might see in the future. In addition, Mozilla Hubs is one of the most accessible platforms.

*WHEN YOU THINK OF AN IMMERSIVE ENVIRONMENT AS A SPACE FOR CONTEMPLATION OR GATHERING, IT ISN'T ALWAYS EASY TO GET PEOPLE TO FEEL COMFORTABLE. HOW DO YOU MEET THE CHALLENGE OF CREATING A SAFE SPACE FOR DIVERSE GROUPS OF PEOPLE AND OF EXPANDING INCLUSIVITY?*

LL: To us, inclusivity starts with creating virtual spaces that are accessible from almost any device and that even work with a weak internet connection, so that as many people as possible can join them. In terms of them being a safe space, that is more a question of moderation. It's a difficult topic, because it's a case of "freedom of" versus "freedom from". The extent to which our clients want moderated spaces is up to them.

FH: During the pandemic, we chose to create virtual spaces that are primarily experienced through the screen rather than VR headsets. Even those people who own a headset mostly have a model that isn't compatible with that sort of interaction. And if they have children, pets or partners, putting on a headset is still incredibly disruptive. That's why it's

important to us to lower the expectations and make virtual experiences more inclusive, rather than aiming for the highest possible fidelity and then excluding most people.

*YOU ALSO TOOK THAT ASPECT INTO ACCOUNT FOR THE VENN ROOM AT TALLINN ARCHITECTURE BIENNALE TAB IN 2019, WHERE YOU EXPLORED THE RELATIONSHIP OF PHYSICAL AND VIRTUAL ARCHITECTURE OF THE HOME. WHERE DO YOU SEE THE ROLE OF THE DESIGNER OR THE ARCHITECT IN THIS PROCESS OF PERSONAL REPRESENTATION AND ADAPTION?*

FH: That's a big question. Architects and designers of physical objects, as we trained to be, have sort of ended up outside of this new field of design. Historically, these professions were directly involved in innovative technological processes. For instance, 20 years ago when parametric design was developed, architects and designers were very much in a leading role. But in the case of virtual architecture, the game industry is or has been ahead. Many of the projects we do, like The Venn Room at TAB, are speculative.

We are trying to find ways to bridge the physical and the virtual worlds. Maybe in two decades these worlds will already coexist in our everyday lives. When the television made its entry into people's living rooms, it was a fixed object, but it completely changed the way people would use their homes. In this case, we're not looking at media; rather, we're stepping into media, and media will be draped over everything we see. This means that designers and architects will need to react to that reality. We hope to find ways to both think creatively about how to do that and to just prepare for this kind of world.

LL: What we were suggesting on The Venn Room is how to adjust the virtual realm to the reality of your home, when different homes come together. Every home is a bit different, but we all have a very similar catalogue of furniture. Therefore, one area of work that we are starting to tap into is focused on furniture and its augmentation.





**HOW DO YOU FEEL THAT THE MERGING OF THESE AREAS WILL AFFECT THE FUTURE OF EXHIBITION DESIGN? AND WHICH TECHNOLOGIES DO YOU THINK PLAY BEST INTO THAT TRANSITION?**

LL: There are two aspects. One is to look at the impact of immersive technology in the museum itself, and the other, to look at the remote access to the museum. I think there is a lot of potential in the role of immersive media, especially in museums, when it comes to interpretation and companionship. We have experimented quite a lot with what we're calling "virtual guides". This involves a character, created by us, delivering an idea or argument in a virtual space that is specific to the location of the exhibition.

It is a very different experience to access an exhibition from home, rather than going to the museum, as far as the visitors' attitude is concerned. It is probably comparable to going to the cinema versus watching movies at home. When we create virtual conferences and exhibition spaces that are accessible via computers, we keep in mind how people are navigating from one window to another in their browsers. It is one thing to deliver content, which websites are good at, and there's a lot to learn from existing formats. But what we feel is most valuable is bringing the visitors' social experience into the spaces.

**WHAT WOULD YOU SAY IS THE BIGGEST CHALLENGE FOR YOU WHEN DESIGNING SPACES ON BOTH SIDES OF THE VIRTUAL AND PHYSICAL SPECTRUM?**

FH: The biggest challenge lies in the fact that the way people have access to virtual experiences today is generally still at the lower fidelity end, as kind of lesser version of being in a space physically. This directly affects people's expectations, and managing those expectations is a big challenge. We are indirectly preparing for the moment when they will match reality. People will enter a virtual experience or exhibition from home and expect something similar to being there physically and also receive the same level of meaning and quality, which would also mean doing it socially with friends, etc. On the next level, what will happen is that the virtual experience from home might actually exceed the physical one.

Then we'll have to think about how physical museums can still exist if they aren't even close to as attractive as the virtual experience.

LL: One interesting point in this regard for designers of virtual worlds is to know whether you're delivering a full-on experience or are working as an architect in more of a traditional sense, creating a space for things to happen within. This is important, because now most virtual experiences are created from the point of view that we want full attention from visitors, we want them to engage in all possible ways. But actually, it might be more fruitful to just create an environment for things to take place within.

**IN THE CATALOGUE FOR TAB, YOU WROTE ABOUT VIRTUAL TOGETHERNESS AND INTUITIVE ASPECTS OF TECHNOLOGY, AS WELL AS THE TENDENCY OF DESIGNING VIRTUAL ARCHITECTURE BASED ON THE STRUCTURES OF PHYSICAL SPACES. SINCE ARCHITECTURE IS A SOCIAL CONSTRUCTION AS MUCH AS A SPATIAL ONE, YOU PROPOSE THAT ARCHITECTURE SHOULD NOT ONLY BE "SHELTERING THE BODY" BUT ALSO "SHELTERING THE MIND". COULD YOU ELABORATE ON THAT?**

FH: This is a huge discussion point in architecture and design. Spaces that you experience have to have references to physical spaces that are familiar, in order for them to be accepted. Similarly, most people will find a film that is completely abstract and doesn't have any visual references very difficult to relate to. To be able to meet in a virtual environment, certain things need to be represented without having to relearn how to interact with each other. We aim to recreate worlds that you might experience physically, in order to create meaningful interactions between people, instead of imagining that now anything is possible.

There will be a time period of maybe one generation when virtual environments will still be created to look like physical environments. You can relearn how a doorknob or a chair works very quickly, but the entire grammar of the experience of human life takes a lifetime to learn. If we don't take this into account, we will shut people out.

**WHAT WOULD YOU CONSIDER THE BIGGEST RECENT TECHNOLOGICAL INNOVATION THAT CHANGED THE WAY YOU WORK?**

FH: Probably the most boring answer is simply the infrastructure of the internet itself: the possibility to connect with people in high bandwidth.

LL: Adding to that: the different forms of coming together, sometimes via text or in a text document. I think we should not forget that those tools still provide a great level of comfort and flexibility. They have really changed the ways in which we can work, but also the ways in which we can continue to build relationships. I think the more low-end forms of coming together are super important.

**WHAT'S COMING NEXT FOR SPACE POPULAR?**

LL: We're opening a big exhibition project in London at the end of June 2022 at Sir John Soane's Museum, a major research project that has been several years in the making ...

1

The Venn Room, an immersive exhibition by Space Popular, depicts a series of possible scenarios of cohabitation in which issues of integration, interface, exposure, overlap, representation, storage and ownership in the augmented future for our domestic environments are put into perspective through everyday narratives.

2

Parametric design is a process based on algorithmic thinking that enables the expression of parameters and rules that together define, encode and clarify the relationship between design intent and design response.

## Space Popular

Design and research studio

Space Popular is a multidisciplinary design and research studio based in Spain, directed by Lara Lesmes and Fredrik Hellberg, both graduates from the Architectural Association School of Architecture in London. Space Popular creates spaces, objects and events in both physical and virtual space, concentrating on how the two realms will blend together in the near future. The studio has completed buildings, exhibitions, public artworks, furniture collections and interiors across Asia and Europe, as well as virtual architecture in the immersive internet.

[spacepopular.com](http://spacepopular.com)



# ● Creating art with artificial intelligence

## CyberRäuber

The narrative “hyperstages” created by CyberRäuber combine virtual and extended realities with theatrical forms of expression. The collective’s project *Der Mensch ist ein Anderer (The Human Is Another)* incorporates AI. Every evening, a new text is created in real time before the theatre audience with the help of the linguistic AI of GPT-3, and transmitted to the actors’ in-ear monitors as a prompt. AI-controlled cameras record the onstage happenings for the live stream, and music and video projections are generated with the help of artificial neural networks. Humans are mainly needed for curatorial tasks. The experimental character of the production gives us an inkling of the future potential of AI and its potential applications (not only) in the arts.



[wp11159761.server-he.de/vtheater/staatstheater-wiesbaden.de/](http://wp11159761.server-he.de/vtheater/staatstheater-wiesbaden.de/)

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“ Vienna’s creative sector demonstrates how digital technologies and creative thinking can be combined! We are launching our Culture & Technology creative focus in order to play a part in shaping digitalisation and making it our joint topic for the future. ”

Exhibition & Stage Design



## ((☺)) A laboratory for imagined futures

With Ben Kidd and Stefanie Schmitt

How can theatre use digital technology to enhance its experience?

Ben Kidd, one half of the theatre production company Dead Centre, believes theatre must have relevance to modern-day society. Founded in Dublin in 2012, Dead Centre has built a reputation as one of Ireland’s most innovative and exciting theatre companies. In 2020, for example, they created *To Be a Machine (version 1.0)*. The German language version, *Die Maschine in mir*, was created for Vienna’s Burgtheater and premiered on New Year’s Eve 2020. In the production, the boundaries between the stage and the audience are overcome with the help of technical assistance.

Together with Stefanie Schmitt, a freelance dramaturg and stage manager at Vienna’s Burgtheater, we sat down with Ben Kidd to find out exactly what that means.



The Culture & Technology Podcast episode 9



Gerhard Hirczi  
Managing Director  
Vienna Business Agency

1 © CyberRäuber  
2 © Ben Kidd & Bush Moukarzel © www.lukasbeck.com  
3 Stefanie Schmitt © Sara Vorwalder



# Funding programmes with a Culture & Technology focus

Viennese companies that implement innovative projects relating to Culture & Technology can take advantage of the following funding programmes offered by the Vienna Business Agency:

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## creative\_pioneer

Up to EUR 50,000 in funding for startup plans and the development of creative products/services in the creative industries

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## creative\_project

Up to EUR 150,000 in funding for the development of creative products/services in the creative industries

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## Innovation

Up to EUR 200,000 in funding for the development of innovative or clearly improved services, products or processes, as well as for the implementation of organisational innovations

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## Wien digital

Up to EUR 40,000 in funding for the implementation of digitalisation plans or ideas for optimising operational processes

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## Shared Facilities

Up to EUR 100,000 in funding for the procurement of an equipment infrastructure (eg machines, systems, instruments) that will be used together with other companies/organisations

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## Content Vienna

Content Vienna, the Vienna Business Agency's competition for digital design, supports creative professionals in producing and developing their digital projects. In 2022 the Vienna Business Agency is awarding five production grants of EUR 10,000 each to support creative projects – from games and virtual reality to animation.

# Culture & Technology: Museum Focus

The two-stage funding procedure supports innovative digital solutions in the museum sector. The aim is to facilitate museum collaborations with technology-oriented creative companies to strengthen future viability in the areas of *Visitor Experience, Research & Learning, Exhibition & Stage Design* and *Archiving & Documentation*.

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## 1<sup>st</sup> stage: Culture & Technology Ideas Competition

Concepts for innovative solutions and projects in the areas of Visitor Experience, Research & Learning, Exhibition & Stage Design and Archiving & Documentation can be submitted.

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### Who?

The ideas competition is open to existing museums with premises in Vienna.

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### When?

Submissions to the ideas competition will be accepted online between 15 March and 15 May 2022.

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### What?

Concepts for innovative digital solutions and projects in museums in Vienna will receive the prize money for the purpose of further developing those concepts.

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### How much?

The 10 best concepts will receive EUR 5,000 in prize money.

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## 2<sup>nd</sup> stage: Culture & Technology Funding Competition

The concepts that were awarded prize money in the ideas competition can be submitted to the funding competition for the purpose of implementation.

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### Who?

The funding competition is open to those museums that won a prize in the ideas competition.

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### When?

Submissions to the funding competition will be accepted online between 11 July and 11 September 2022.

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### What?

The winning projects will receive funding for project-specific internal personnel costs as well as the costs relating to collaborations with technology-oriented creative companies specified by name.

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### How much?

The Vienna Business Agency will fund 80% of the project costs, capped at EUR 100,000 (a maximum of EUR 30,000 may be allocated to internal personnel costs, as well as a maximum of EUR 70,000 of the costs incurred by the technology-oriented creative company).

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📍 Mariahilfer Strasse 20  
1070 Vienna

☎ +43 1 25200

[viennabusinessagency.at](http://viennabusinessagency.at)

Idea and concept: Elisabeth Noever-Ginthör,  
together with Alena Schmuck,  
Elisa Stockinger, Heinz Wolf

Project management: Alena Schmuck

Authors: Paul Feigelfeld, Konstantin Mitgutsch,  
Stefanie Schmitt, Sabine Seymour,

Olga Tykhonova, Sofia Widmann

Editorial team: Carina Hartl, Cornelia Lein,  
Elisabeth Noever-Ginthör, Michaela Reichel,

Jutta Scheibelberger, Stefanie Schmitt,  
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# Let's talk Culture & Technology.

## A white paper to inspire creative impulses for digital applications in art and culture.

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Vienna is globally renowned for its cultural heritage, its museums, concert halls and theatres. In these times of progressing digitalisation – and accelerated by the pandemic – cultural institutions are increasingly focusing their attention on finding ways to enhance and innovate their offerings and reach new target groups with the help of digital solutions. The demand in this area is high, which in turn opens up new business areas for creatives and start-ups with a focus on digital technologies.

This white paper aims to stimulate new business models at the interface of culture and technology. Specialist articles and interviews with experts provide inspiration, and use cases show how digital technologies are already being utilised in the cultural sector.

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📍 Mariahilfer Strasse 20  
1070 Vienna  
☎ +43 1 25200

In addition to funding, the Vienna Business Agency also offers extensive consulting and networking services for creative companies.

We are happy to help!  
For more information, go to  
**[viennabusinessagency.at](https://viennabusinessagency.at)**