HUMAK

Planning and Creating Virtual Events

Experiences, Economics and Technical Solutions

Lautamäki, Satu & Tikkaoja, Oona (editors)

Metropolia   SeAMK   ARCADA   Vipuvoimaa EU:lta 2014–2020   Euroopan unioni Euroopan sosfaalIrahasto

PLANNING AND CREATING VIRTUAL EVENTS

EXPERIENCES, ECONOMICS AND TECHNICAL SOLUTIONS

Lautamäki, Satu & Tikkaoja, Oona (editors)

VEVENT

Layout: Emilia Reponen

TABLE OF CONTENTS

AUTHORS

Maria Bäck

Maria Bäck (MSc. (Econ.) PhD candidate, FRSA) is currently Degree Program Director for Cultural Management at Arcada University of Applied Sciences. Her main interests in research are in Cultural leadership, organisational studies and performing arts. Involved in the Royal Society for the Encouragement of Arts, Manufactures and Commerce and acting as connector for the Finnish chapter, Maria believes international networking and design thinking is of great importance both for educational reasons and also for developing society at large. Maria has also been involved for many years in different projects connected to the arts in both business and public organisations, most recently two EU projects: as part of the project management team in a Horizon 2020 project developing the field of cultural heritage in Europe and beyond, and as part of the project behind this publication, VEVENT. Maria has also been involved in ENCATC– as board member and treasurer between 2014 and 2017.

Juhani Haarala

Juhani Haarala (BD) works as a lecturer of cultural management at Seinäjoki University of Applied Sciences. He is involved in project-based teaching and in various R&D projects. His teaching responsibilities include a focus on new technologies, visual communication, graphic design and 3D software.

Laura-Maija Hero

Laura-Maija Hero (Ph.D. Education, MA Aesthetics) is a senior lecturer/ Cultural management and RDI project lead at Metropolia University of Applied Sciences. She coaches brand management, new technologies, multidisciplinary innovation work and development projects. Her professional background is in the technology industry, marketing and the art world. As a researcher, she studies multidisciplinary innovation pedagogy and virtual event production.

Satu Lautamäki

Satu Lautamäki (Ph.D. Econ.) is a principal lecturer in Cultural Management at Seinäjoki University of Applied Sciences. She has led various business projects and acted as project manager or partner representative in nationally and internationally funded research and development projects. She has co-founded companies in the fields of business consulting and executive training. Her current research activities focus on interdisciplinary pedagogy, design thinking, creative industries as well as the development of SME businesses.

Benny Majabacka

Benny Majabacka (MCA) works as a senior lecturer at Humak University of Applied Sciences in the Cultural Management department. Benny, a multifield producer by background, has executed several development projects in the creative industries in recent years. He has also been involved in starting up businesses in the music industry. His teaching responsibilities at Humak focus on production studies, marketing, commercialization and legal studies.

Sander Mosel

Sander Mosel, cultural manager (BA), has been in the event industry for as long as he can remember. He has produced various productions for large as well as smaller companies, projects and festivals. In his final year before becoming a full-time entrepreneur, Sander worked as a technical producer for the largest B2B conferences in the Nordic countries. As an entrepreneur, he focuses solely on digital productions, including virtual events, e-commerce, websites, online courses, and everything related to digital business and marketing.

Richard Silin

Richard Silin (MCA) is a senior lecturer in Cultural Management at Arcada University of Applied Sciences. He has participated in several national development projects, including developing operational models for learning environments together with work life. Richard's professional background is in event management, cultural policy making and arts funding in a municipality context. His teaching responsibilities at Arcada focus on event production, cultural management and artist management. Richard is particularly interested in audience and visitor experiences in an event context as well as cultural policy and funding.

Oona Tikkaoja

Oona Tikkaoja (DA) is a senior lecturer working in the Cultural Management department of Humak University of Applied Sciences. She teaches courses concerning digital tools in the work of cultural managers. Alongside teaching, she works as a visual artist, which matches well with her interest in 3D space design. She worked as the project manager of Vevent, and is always eager to learn more about the surrounding world(s).

Veera Vuorio

Before diving into XR technologies and game design, Vevent's XR Media Designer, Veera Vuorio, (studying second-year XR Design at Metropolia University of Applied Sciences), had a professional background in digital marketing, project management and content production. In the past few years, along with her XR studies, she has developed a strong interest in the Metaverse and its possibilities for and beyond virtual event production.

INTRODUCTION TO VIRTUAL EVENT PRODUCTION

Oona Tikkaoja **|** Satu Lautamäki **|** Laura-Maija Hero
Benny Majabacka **|** Richard Silin **|** Juhani Haarala

We welcome you to apply this handbook as a resource on how to plan and manage virtual events. The book is a result of an application-focused approach: there are examples or hands-on experiences as well as exercises, supported by theoretical definitions and models.

The book is based on Vevent, a project conducted by four universities of applied sciences in Finland and funded by the European Union, ESF program, from March 2021 to April 2022. In the project, the participating universities of applied sciences (Arcada, Humak, Metropolia and SeAMK) conducted practical experiments on virtual event production and gathered knowledge through close discussion with experts in XR technologies and virtual event management. For that reason, this handbook offers practical tips and tricks side by side with more theoretical research.

A great number of people were involved in the knowledge-building process, including cultural management students and staff from the participating universities of applied sciences. In accordance with this principle of collaborative working, we wanted to invite Sander Mosel, a Metropolia alumnus working full-time in virtual event production, to bring his practical how-to viewpoint to this handbook to complement the research-based approach of the project staff. We want to warmly thank every single person who took part in Vevent, this knowledge-building project, by testing, collecting information, building virtual worlds and events, participating in discussions or giving feedback. The discussion continues, and the readers of this handbook are also invited to participate. So, if you have ideas for knowledge-building projects in the future, don't hesitate to contact the editors or writers.

Virtual reality offering business opportunities

Virtual events refer to online events with people attending and interacting in the web environment. Virtual events can include all types of online events, including, for instance, webinars, virtual shows, live streams and other types of events on virtual platforms. The definition also refers to virtual reality events that are held in extended reality (XR) settings, which visitors can attend in 3D with VR headsets. XR, or Extended reality, serves as an umbrella concept that incorporates virtual (VR), mixed (MR) and augmented reality (AR) technologies. Virtual reality refers to technologies that effectively provide the most immersive experience possible: users feels as though they are in another world entirely. Augmented reality literally adds virtual elements to the real world, giving the user a partially immersive experience. Mixed reality refers to a world where the virtual and real worlds mix and where digital and physical elements are able to communicate with each other. (Tech for Dummies 2021.)

It is easy to see why and how virtual environments offer opportunities in the field of culture. The rapid development and adoption of technologies is obvious in various industries, including the cultural sector, and digitalization is everywhere. Already, we see examples of advanced technologies being applied in the cultural industry, in the use of artificial intelligence or robotics to produce poems or draw portraits, or even discuss the art being created with viewers (see e.g. Ukaonu 2021). Applying technology does not have to be high-tech and complicated; various meeting places in social media channels, virtual meeting applications or virtual platforms have become everyday tools of interaction in recent years.

The concept of virtual reality can be somewhat fuzzy and various definitions have been proposed. Some definitions state that virtual reality as a concept originates from theories describing our thirst to escape the limitations of the real world. Following this path of thinking, virtual reality can be seen as an opportunity to immerse oneself in a world with highly visual elements and to explore it via multiple senses. On the other end of the spectrum, virtual reality can be seen as an environment in which to explore various options for very practical problems: a company, for example, can use virtual reality to produce and test technical prototypes before launching them on the markets. (c.f. Virtual Reality Society 2017.) The future business opportunities within virtual reality applications and technologies seem exponential and "the global virtual reality market is projected to grow from $6.30 billion in 2021 to $84.09 billion in 2028" (Fortune Business Insights 2021).

When considering these commercial and technological paths of development, it becomes evident that in order to develop new skills for the cultural production sector, new models and logics using new technologies must be sought and understood. One challenge is to find ways to get started in digital business, when encounters between companies and customers can be haphazard and customers may struggle to identify new cultural services in the virtual world (Vevent 2022). This book aims to provide ideas for and insights into various technical and economic considerations when starting to plan and execute virtual events. We are in an era of advanced technological development, but this is not necessarily the only reason to organize a virtual event. Instead, it is always
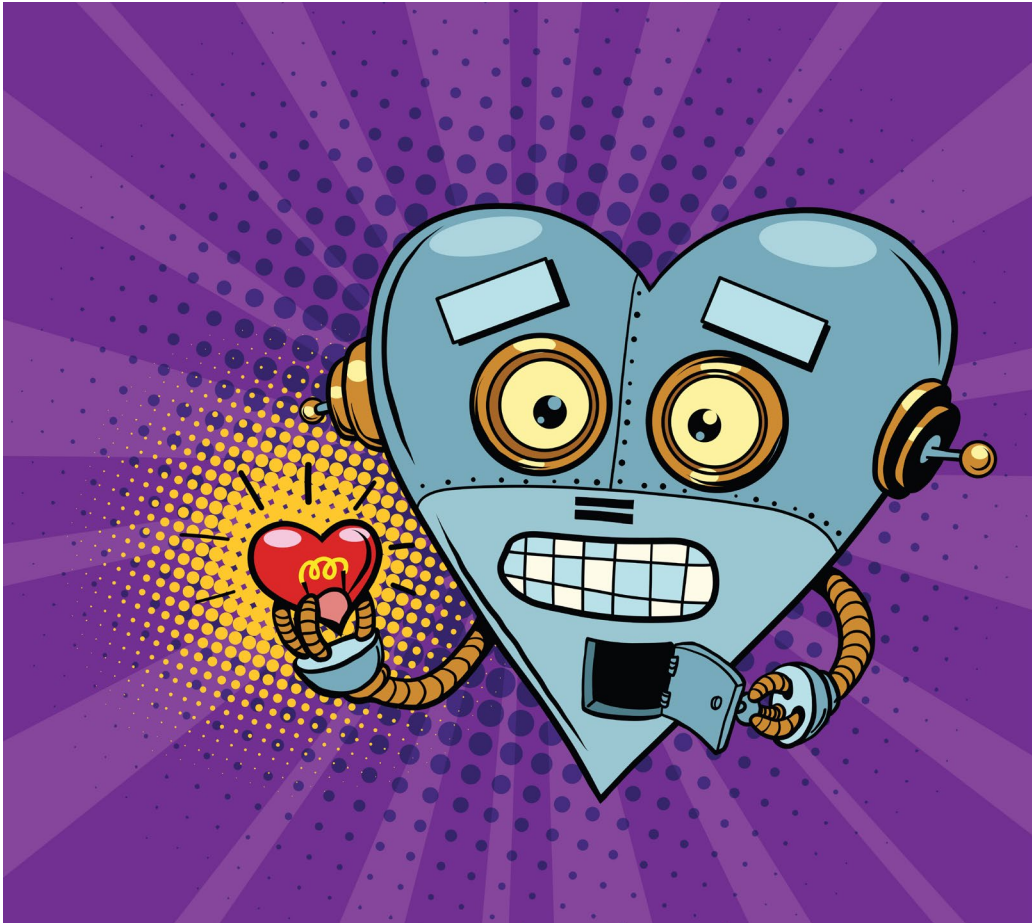
Image 1: Understanding the heart of virtual technologies (Vevent 2022).

good to start with a clear idea of what we are aiming at, at what technical terms, costs and expectations.

Vevent project as the background

The Vevent project has aimed to study and create models that will strengthen our ability to use ICT and XR technologies in the creative industries and give tools for future employment and new innovations. The project will enhance education within the cultural management field by offering new tools. One new tool needed in the event production industry - according to feedback from professionals, networks and university students - is knowledge and understanding of extended reality (XR) technologies and their possibilities in event production. We have sought to develop a solution for the continuity of event production and for the discovery of new earning models through virtuality and new technologies. (Vevent 2022.)

A long-term goal of our Vevent project is to understand how XR technologies can be made accessible for all consumer groups. The project has included four main pilots and monthly VeventForums, which have aimed to find ways to reshape the models of planning, organizing and earning from virtual events. The main target group of the project consists of producers who have not, so far, been using virtual technologies in their work or studies. (Vevent 2022.)

Change Laboratory as a method

for Vevent development activity

In Vevent we used the Change Laboratory method (Engeström, 1992; 1995) to develop and change the professional field of cultural management. Change Laboratory is a developmental work research methodology that stands at the crossroad of education, knowledge management and knowledge creation involving professionals, developers, students, companies and organizations in transforming a professional field, in this case the virtual event production. The Change Laboratory was developed in the Center for Activity Theory and Developmental Work Research of the University of Helsinki.

The method facilitated both intensive, deep transformations and continuous incremental improvement. The targeted change in the industry involved us in piloting virtual event productions, co-designing, futures thinking, cross-polluting in internal and external Vevent Forums, and research (See Figure 1 >> Both posters). During the activity, we produced materials for educating professionals. VeventForums involved educational institutions, companies in companies in various fields, creative professionals and us virtual event production developers.

Event pilots

Within the Vevent project, we have organized four pilot events where XR technologies have been tested. The project and pilots were planned and executed by four Finnish universities of applied sciences which provide cultural production degree programmes: Humak, Metropolia AMK, Arcada and SeAMK.

Humak's pilot was organized with Turun Musiikkijuhlat (TMJ) festival. The goal of the project was to create exclusive content for the event's main sponsor. TMJ consists of various concerts and events and one particular concert was chosen for the purpose. The basic idea was to give the VIP audience a short 3D-enhanced experience with the artist, which they could watch and listen to right before the actual show. The result was a video insert in which the artist explained the works and performed parts of them. Virtual reality studio Zoan designed the special features in the video based on the artist's story. The video insert was downloaded to YouTube as a private video and the link shared with the main sponsor's invited guests.

Figure 1: Vevent Method.

VEVENT

Aim	Method	Material
Virtual event experience	Observation in a VR event venue	N=16 observers
Virtual event platforms	Desktop study	N=15 platforms
Virtual event production	Semi-structured interviews	N=10 organizations
Production process of a VR event venue	Crowdsourced service design	N=18 students and N=4 designers
Teaching in VR	Interviews	N=5 UAS staff
Costs and production processes of virtual events	Pilot projects	N=4
E-sports and gaming	Benchmaking study	Literary tasks N=12, game observations N=5 of N=4 games
Consumer behaviour in virtual events	Literary review and pilot cases	N=4 virtual event production pilots
Social, technological and commercial experiences in virtual events	Observation study	N=5 observers in N=7 virtual events

HUMAK

SeAMK

Metropolia

ARCADA

Leverage from
the EU
2014–2020

European Union
European Social Fund

Image 2: Screenshot from Altspace Nummirock virtual festival.

Image 3: Screen shot from the video for Turun Musiikkijuhlat.

Metropolia piloted event venue production in virtual reality. The aim was to understand how cultural and educational organizations can build their virtual worlds in the spatial internet today. We used a crowdsourced service design process and developed Vevent Worlds, a large virtual event venue, that also enables us to teach virtual event production in authentic conditions. It is accessible with VR goggles and computers. We have piloted coaching and facilitating there and studied the virtual experience and production.

Arcada's pilot partner in the project was Superwood Festival, a boutique festival that took place between 1st and 3rd of October 2021 in beautiful surroundings by the sea at Hotel Rantapuisto in Vuosaari, Helsinki. The festival describes itself as a universe reminiscent of childhood summer camps and a sleepover experience with 45 hours of music, art, and food for thought and for the soul. The Vevent pilot *The Sound Experience* is a digital artwork that could also be used in promoting the festival even though the texts and the ambient sound were designed to fit the physical place and the theme of the festival. *The Sound Experience* is an audio adventure that consists of short stories and poems written by members of Helsinki Writers Group, inspired by autumn colours, chilly winds and mossy forests. The ambience and the audio adventure were designed and put together by sound designer Nicolas Lehtola of Noana. *The Sound Experience* was recorded in Arcada's professional recording studio. With *The Sound Experience* festival

visitors could experience the sounds of Superwood, even after the festival had ended. (Superwood 2022 & The Sound Experience 2022)

SeAMK's pilot partner in the project was the [Nummirock event](). The event was held at Midsummer 2021 in the Nummijärvi festival area of Kauhajoki. As a Vevent pilot, we crafted a customized virtual world for Nummirock in the Altspace platform. The purpose was to pilot the event production process and to test how a virtual environment could support the overall vision of the event providing an all-embracing experience. The pilot clearly provided new information on the process of planning of a virtual event, on the issues that need to be considered during implementation and on the role of community in a rock event, in both the physical and virtual worlds.

Sharing and creating knowledge via VeventForum

During the Vevent project, we have aimed to synthesize existing and future-oriented know-how, networks and different solutions using XR technologies in event production. The project has also involved a meeting place titled VeventForum, which aimed to bring together representatives of companies and associations, project developers and university teachers for regular monthly meetings.

At the same time, VeventForum has acted as an effective one-year training program, offering participants an opportunity to gain certification in virtual events production. This training combined co-development methods and participatory workshops to bring new insights and knowledge to the events field.

In addition to VeventForum, the project partners have created a virtual course, which will be available for everyone free of charge for approximately two years after the end of the project. At the time of writing, the virtual course is still under final modifications; it is due to be published by the end of April 2022. If you are interested in attending this course, please check the Vevent [webpage]() for details.

The book that you now have in your "virtual hands" includes four sections, the first of which focuses on how virtual events can be experienced and produced, with some examples of platforms and case studies. The second part examines the technical side of virtual productions, that is, the technical equipment and competences needed, also offering insights on how to teach in virtual reality. The third section of the book takes a closer look at the economic realities of virtual events: what are the possible cost categories? How can virtual events be monetized? And what lessons can be learned from e-sports, consumer buying behavior and agreements? The fourth and final part of the book looks at the future, for instance, what is and will be provided in Metaverse and Art Metaverse and other possible future foresights.

We hope this book is your ticket to the virtual world of events!

References

Engeström, Y. (1992). Interactive expertise: Studies in distributed working intelligence. University of Helsinki, Department of Education. Research Bulletin 83.

Engeström, Y. (1995). Kehittävä työntutkimus: Perusteita, tuloksia ja haasteita [Developmental work research: Foundations, findings, and challenges]. Helsinki: Painatuskeskus [in Finnish].

Fortune Business Insight 2021. Market research report. Retrieved 24.02.2022. https://www.fortunebusinessinsights.com/industry-reports/virtual-reality-market-101378

Superwood 2022. Retrieved 1.3.2022. https://www.superwoodfestival.com/

The Sound Experience 2022. Retrieved 27.2.2022. https://www.superwoodfestival.com/program-2020#soundexperience

Ukaonu, Doris 2021. Meet the World's First Ultra-realistic Humanoid Robot Artist. Retrieved 23.02.2022. https://www.techcityng.com/meet-the-worlds-first-ultra-realistic-humanoid-robot-artist/

Vevent 2022. Project description. Retrieved 27.02.2022. http://vevent.humak.fi/

Virtual Reality Society 2017. Virtual reality concepts. Retrieved 20.02.2022. https://www.vrs.org.uk/virtual-reality/concepts.html

PART 1.
VIRTUAL EVENT – HOW IT IS EXPERIENCED AND PRODUCED

TOOLBOX 1
WHAT IS A VIRTUAL EVENT?

Sander Mosel

You are probably wondering what exactly is this *virtual* thing that everyone is talking about. In short, it is an event created online and that's what a virtual event is based on. Basically, the main function of a virtual event is to allow people to interact in the virtual environment of the web rather than in a physical location. That is what separates live virtual productions from physical events.

Virtual events and online productions are typically multi-session online events – unlike, for example, online meetings. Of course, meetings are a kind of virtual event as well but the main rule in a virtual event is that there are a lot of participants and a program that has been developed especially for them and for their needs. Participants participate in an event for a specific reason. It may be a concert, a yoga class, a lesson, a product launch, a marketing event or anything that can be broadcast over the network.

The program and the lineup can be built with one or more performers. There can also be multiple performances simultaneously, meaning that there can be several virtual rooms, or "virtual stages," and participants are able to jump from room to room according to their own interests.

In virtual events, performers are based either in the organizer's studio or remotely in their own home or office. This is one of the great advantages of virtual events: even the performers can be remote, which means we don't always even need a venue. In the case of sports broadcasts, for example, the group sports instructor can also deliver the lesson from their own studio, from home or from a venue provided by the organizer.

Virtual events can be paid or free and offer the same payment options as regular online purchases, with direct bank payment, or debit and credit cards.

In short, I would say that virtual events offer significant benefits and scope for everyone – attendees, speakers and event organizers — regardless of where they are in the world, what devices they use, or when they are available. The future of human-to-human connection will definitely become increasingly centered on remote participation as the internet and technologies grow more accessible for people.

Image 1: Virtual event "stage" made in the office (Mosel 2022).

TOOLBOX 2
WHY MAKE A VIRTUAL EVENT?

Sander Mosel

There are many benefits and advantages to producing virtual events. Let's go through a few basic reasons.

Crises and pandemics

As you remember well, in early 2020, Covid-19 and the ensuing crisis caused enormous chaos and confusion in the field of culture and events around the world, followed by an unexpectedly large wave of event cancellations and delays as the entire cultural sector was postponed into the near future. No-one knew how long events would be canceled and people were not allowed to see each other.

Virtuality and virtual events emerged as the savior of the cultural sector. We had heard of virtual events and of bringing culture online, but few had practical experience of it. In the past, virtual events and virtuality were often covertly combined with video conferencing, simple webinars or social media AR filters. Michael Jackson's hologram concert from 2014 may also come to mind.

This pandemic has facilitated and expanded virtual opportunities to a whole new reach. During pandemics or crises, everything just goes online and that's what we've seen. The transmission of messages or even culture does not end no matter what pandemic engulfs the planet. Almost everything can be taken online. This is one of the most significant benefits of virtual events and a good reason to develop the competence to produce things online. The benefits are monetary and even reputational!

Costs

Costs are one of the most significant advantages of virtual production. The production of a virtual event need not be as immense or as diverse as with physical events. You can organize a large virtual event successfully single-handedly, with all participants and performers at a distance. Some of the challenges of a physical event are eliminated in virtual productions and often this is also reflected financially when production no longer costs as much anymore. Of course, this also depends a lot on the size of the production and it is very possible that a big virtual event can cost even more than a physical event. Everything is relative, but if you talk about a traditional virtual event that doesn't have a big studio or sets and the performers are remote, then the costs are usually much lower

compared to a physical event. So very often it also makes financial sense to organize a virtual event, especially if you know how to organize the event by yourself or with a team.

Accessibility and global reach

One of the biggest benefits of virtual events is accessibility. Participants do not have to travel long distances and organize flights, car journeys or train journeys just to physically participate in the event. Almost all the features that a physical event can offer are also available virtually. Sure, nothing replaces a quality face-to-face meeting and discussion, but this may just be what we're accustomed to.

However, we should not forget the large proportion of people who specifically want to be physically present and actively avoid virtual productions and events.

I know many people who are still not used to virtual meetings and are terrified of them. I would say that the world will never go completely virtual, for there is certainly not enough demand for this. The thing for the future may be more about how best to combine these two things: virtuality and physicality.

Attendee count

The possibilities for a virtual event are huge and one big possibility is the number of participants. Depending on the platform you use, you may no longer have any restrictions on the number of participants and a virtual event may accommodate tens and even hundreds of times more people than a physical event. This is immediately reflected in the event reputation, quality and, of course, the cash flow of the event.

Saves time

Virtual events take some time to prepare before going live, but they aren't as time-consuming as the actual physical events. Even hosting an event online, you'll still need to schedule time for marketing, registration, and promotion. Employees who normally attend your live event can shift their time and focus towards boosting sales instead while the live event is underway and this can help your organization save time.

Networking opportunities

In terms of possibilities for networking interaction, virtual events compare favourably. Virtual events offer many different opportunities for networking: chat, 1-2-1 discussions, group discussions, panel discussions, round table discussions, discussions with performers or just the opportunity to ask questions during the presentation. There are more opportunities than in a physical event and often the threshold for networking is lower because within a short period of time, everyone can connect with anyone else. While

real events have been made easier to engage with through a number of applications and platforms, virtual event networking possibilities are less hassle and are more accessible for attendees.

Recording and insights

With virtual events you can easily ask for attendee feedback: you can create surveys, quizzes, and polls to measure and understand feedback in order to improve and gather meaningful insights from your event right away. This is one approach to make your attendees feel welcomed and valued for their contributions. I can also say from my own experience that participants give more positive responses to feedback, surveys or polls during the event than after it, which means that virtual events make a significant difference here as well. In physical events, by contrast, implementing the same kind of data-gathering requires the use of different devices such as the participants 'mobile phones and QR-codes.

In terms of recordings - It is almost always possible to provide a recording of virtual events and this also gives a significant benefit to the participants and the event organizer. This also means that attendees do not necessarily have to attend live, because the recording allows them to participate afterwards. Recording sessions on a virtual event platform can also be really useful when it comes to following up with prospects and marketers.

Image 1: HDMI PTZ-camera capturing a virtual event (Mosel 2022).

CHAPTER 1.

VIRTUAL EVENT PRODUCTION PROCESS

Benny Majabacka

This chapter focuses on the production process of a virtual event. Particular attention will be paid to those areas of production that differ from the production of the live event. By perceiving the differences between a virtual event and a traditional live event, it is easier to find the factors of production that a digitally executed event should address in order to avoid challenges. While there is not just one right way to execute an event through the production process, the same basic laws are repeated in most events. These general factors are explored in the chapter from the perspective of practical operation and based on these factors, it is possible to check the critical points of virtual event production with different variations.

Differences between a virtual event
and a live event production

A virtual event, as defined by the the event agency Tapahtumantekijät (2020), is a completely online event that is experiential as well as goal-oriented. In a virtual event, participants meet the organizer or other participants online. Although there is no physical contact with other participants in a virtual event, it does include interactive elements. However, not all aspects of an event need to be in virtual form, for example, it might be just the performer who is brought in virtually.

The production of a virtual event is based on the same principles as the organization of a live event.

DEFINING A VIRTUAL EVENT
Client & service provider backgrounds,
goals, participants, budget

BRAINSTORMING
Concept, services, content, theme, products, cost

PLANNING

| Marketing communication documentation | Services / Productsenviroment / Event platform | Virtual event script |
| Budget = Costs and revenue streams | Sponsors / Partners | Agreements, copyright, security, accessibility |

TECHNICAL IMPLEMENTATION
Opening an event platform, creating a space, selling tickets,
selling products and services, paid content, etc.

Ticket sales, registration, foyer (info, etc.), main stage / program content,
chat rooms, exhibition stands, virtual stands

Implementing a virtual event according to the script and on a planned schedule:
streaming, hustle, community facilitation

Enabling participation: network modes, chats, queries, cross-platform switching,
hosts, speed-dating moments, outlets, Miro, Whiteboard, Mentimeter, Kahoot,
Jamboard etc.

Figure 1: Event production process (Dahlman 2021).

It is important to distinguish between those stages of production where the organization of a virtual event requires special attention and, at times, special expertise. Certain tools as well as the needs of the participants must be considered in the production of a successful virtual event (Raatikka 2020). A virtual event in its simplest form might be, for example, a livestream broadcast with interactive elements. On a larger scale, it could be a virtual world or an event arena where participants encounter others as avatars or through VR equipment (Nieminen 2020, 19).

A virtual event poses challenges for the producer, especially in terms of attractiveness. Digital events compete with other audiovisual entertainment and therefore require

PLANNING GO/NO

TRACKING / FEEDBACK / METERS

THE MO-

VISIBLE PROCESSES

INVISIBLE PROCESS - PRODUCTION

ME-NT

BEFORE THE MOMENT

AFTER THE MOMENT

Figure 2: Stages and visibility of event production processes (Hoffren).

well-thought-out functionality and content dynamics in order to maintain the participant's interest. A participant in a virtual event has a lower threshold to leave the event than a participant in a live event. The implementation should also look high-quality, as the viewer's comparison point is often streaming or a TV broadcast, for example.

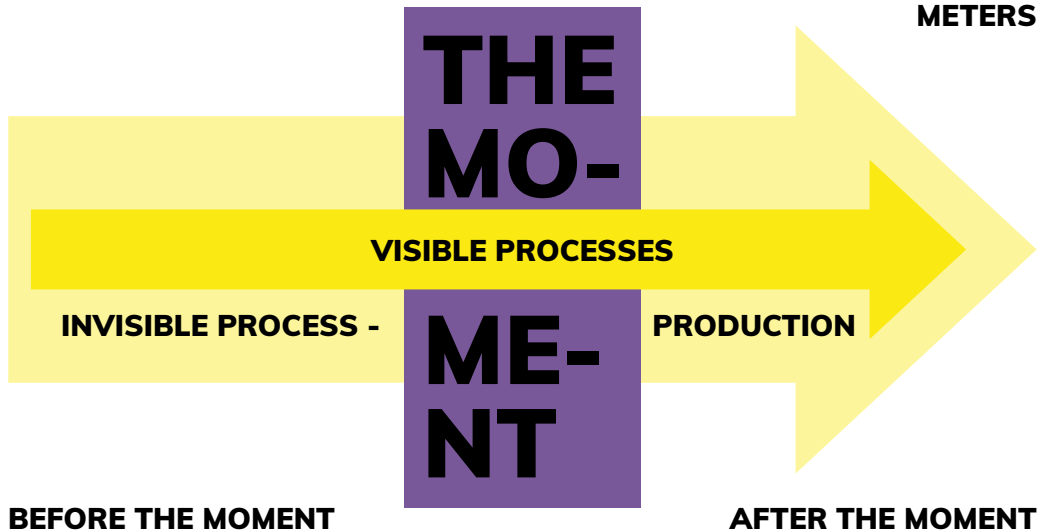At live events, it is possible to engage all the senses of the participant and use them to create a strong impression of experience. In a virtual event, the sense of sight and hearing are especially available. It is possible to make some use of other senses in the realization, but this requires special thought and ideas (Muukkonen & Putkonen 2020, 10). Whether it is a live event or a virtual event, the basic principles of event production are the same. The whole can be seen through three stages:

1. Planning, everything that happens before The Moment
1. Implementation, The Moment, ie the event itself
1. Aftercare, post-event work

The producer of the event must be skilled in content production, economic production, technical production and management of the event.

Production process

When the need to implement a virtual event arises, it is important to start by defining what is actually meant by a virtual event in that case. Is it about organizing the event completely digitally or bringing a certain aspect to the event virtually? It is a good idea to start with the person in charge of the basic issues of organizing events. Through the

questions of what, why, when, how and to whom, clear boundary conditions for implementation can be defined. It is worthwhile to take the time to answer the questions and think carefully about the details. Especially when the production service of a virtual event is purchased from a service provider, the starting points should be clear. The target audience, time, method of implementation, goals, location of the actual action, and available budget open and close certain opportunities. The event can be carried out at the client's own premises, for example, or at the premises of the virtual event service provider. The event can be hosted and presented by our own actors, or the production of content can be outsourced to a program office. Many of the bigger actors providing virtual event services have good contacts with content producers such as presenters or performing artists. Some have ready-made contracts with performers or their representatives.

If the virtual event to be implemented is small in scale, the work can be outsourced to a small company of one or two people. In this case, for example, it may only be a matter of carrying out streaming, audio and lighting. In larger implementations, there may be a variety of different service providers, from scripting and animation to moderation of staging and broadcast platforms (Nieminen 2020, 19).

The co-operation between the client and the service provider is important and requires investment, even when the entire production is procured as a purchasing service. In any case, the client's starting points must be carefully clarified. By comparing the services between with different providers, it is easy to get an idea of the opportunities offered by different companies. Through service providers, it is also possible to compare event platforms considering the needs of the target group.

Start with the idea!

When planning to design content, the needs of the target group should be given priority. We should limit our focus to the things that matter to the participants and those that matter to the producer, but the audience response weighs more heavily. The content produced must be relevant, as leaving the virtual event requires only one click from the participant (Nieminen 2020, 24). This places a demand on the implementer for high quality content and the promises must also be fulfilled if the target audience is to be kept. The virtual event should not contain insignificant elements or idle moments.

In the conception and ideation phase of the event, it is worth keeping in mind that not all the senses of the audience are used. Emotional experiences in virtual events have not yet been studied very extensively, but it is clear that emotions are not conveyed in the same way as in a traditional event, where micro-movements and sign language, for example, may be visible. Virtual events are also culturally challenging, both in terms of international and even intra-community operating cultures. On the other hand, this characteristic of bringing people together also creates opportunities for content production. Knowing your own target group is the basis for the kind of services you want to offer in a virtual event. This is no different from a live event, although for many services, different implementations need to be considered. Technological choices, content alignments,

genre choices, event communication, interaction methods, script and control are all based on familiarity with the target audience. "Three important values for any target group are: empathy, appropriateness and added value. Adhering to these values cannot fail." (Tapahtumantekijät 2020).

It is important to keep in mind at what different levels a representative of the target group can be met and the kind of needs that can be met in a virtual event. The needs of the participants can be classified into five different levels.

1. Facilities. In the first level are the psychological needs. In a live event these are most often food, drink, toilet and lodging. In a virtual event they can be easy-to-operate technical functionalities. Pay attention to the quality.

2. Feeling of safety. The basic needs can be fullfilled, but the feeling is unsecure. The participant should be aware of what is happening and where it is happening and how to get there.

   This will be reached by good information in advance. The signs are not always enough, there should be staff helping.
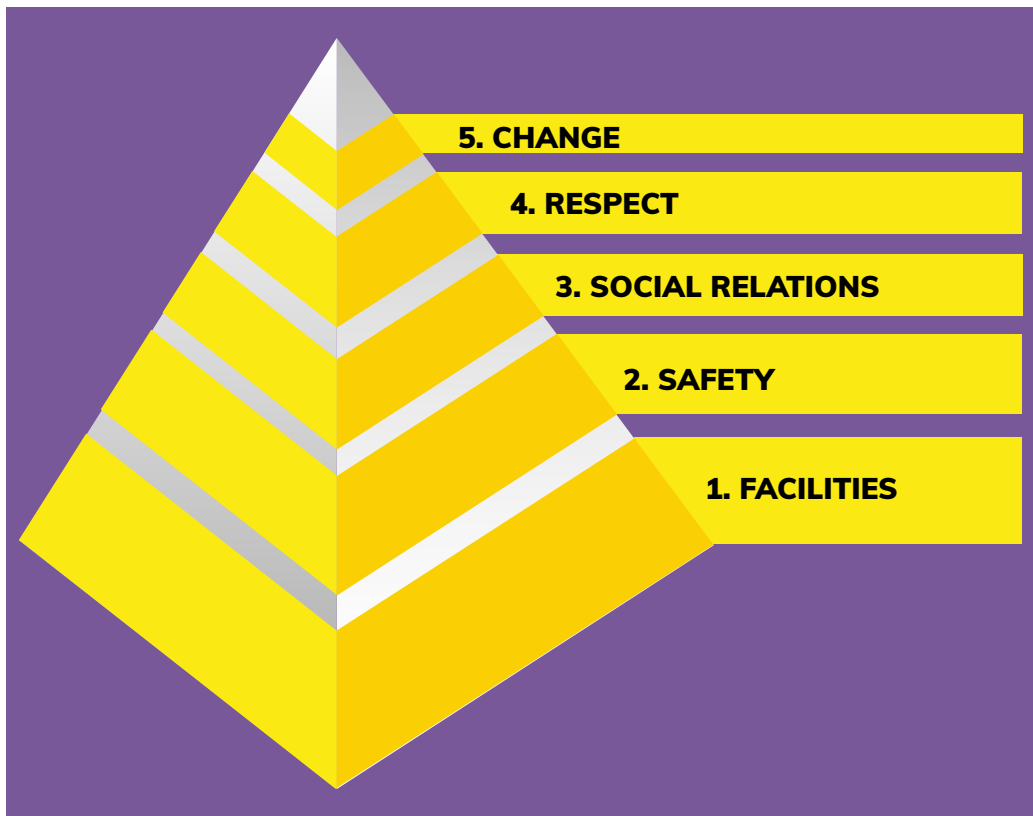

Figure 3: Needs of an event participant. Hierarchy of objectives in event production.

3. What possibilities there are to get to know and meet other people. Participants should be activated. Not only one break for a meal between 9-17.

4. People want to feel respected. Nobody should be Forgotten, Personal attention, free gift, message etc. Also the content should show respect by being good enough so that the attenders are not wasting their time.

5. The highest level will get people to want the change. The Attendant should feel that they're getting valuable information, not just learning new things but the desire to make change.

Virtual event planning

The brainstorming is followed by a design phase in which the sketches and blanks are translated into concrete actions. Every event should be written down in one way or another, but the significance of the written plan is even greater in a virtual event than in a live event. This is because in live events, production team communication during events is easier and staff can respond more quickly to situations than in a virtual world where this may not be the case. Indeed, often those responsible for the production of a virtual event and those involved in different roles are active during the event, for example in a social media group created for the event that is not dependent on the event platform. This allows, for example, uninterrupted communication during technical problems.

The script of the virtual event should be diverse in content, it should have variety, interactivity, enough tempo and relevance. It is important to approach the script in such a way that the participant seeks to encounter through intellectual, emotional and ethical surfaces. The most significant difference from a live event script is that often a virtual event is shorter in duration. Underlying the writing of the script should be an understanding of how the participants' senses are loaded in a different way in the virtual event. Because only the auditory and visual senses are available over a video connection, dynamic operation is important. The program and content should be delivered in a variety of ways and allow for participation in a variety of ways if the duration becomes longer. Breaks should be rhythmically regular if they do not occur naturally within the program. It is useful to take breaks often, but not to stretch them for long. Research data on how long a viewer can focus on different content can be found in abundance and should be used to support event planning.

Designing ancillary services in virtual events requires ingenuity. In terms of food, beverage, ancillary services and various activities, the sales stalls of a traditional live event can partly be recreated as products that can be ordered directly from home, through links, for example. On the other hand, the side event offer does not have the same function in a virtual event as in a physical event area, where people move and spend very long periods of time. Some aspects of production, such as toilet and waste management services, do not need to be considered at all in virtual events, except in terms of scheduling. The production process of virtual events, as in all event production, is closely tied to

budgeting, business cooperation, drafting contracts, and copyright issues. These issues are discussed in more detail in the chapters reserved for them.

Technical implementation and security

When choosing a virtual event platform, the same principles must be kept in mind as when planning live events. It is a good idea to choose an event platform only after designing the content to ensure that it best serves the target audience and software of the event. The choice of virtual event platform can be approached with the same principles as the choice of physical location: the audience's first experience is usually visual. The range of virtual event platforms is diverse. Traditional video conferencing rooms can be sufficient for small gatherings, but even small interactive elements can create the illusion of movement and a changing environment. If you only want to stream the finished content and there is no need to host chats, for example, there are even more options. At one extreme would be small home-produced events streamed to social media channels via a free video service; at the other extreme, large multimedia productions with multiple XR technologies broadcast from a multi-local platform on a custom-made platform, where the participant can navigate as an avatar. If the main goal of the event is to enable interactive activities between the participants, there is no need to set the same requirements for the event platform as, for example, for the simultaneous accessibility of several parallel seminars.

The majority of virtual events are broadcast from a studio. The studio can be fixed or mobile, and even at this point, the content requirements determine the final solution. It is also possible to produce smaller events by hand, but professionally implemented sound and lighting technology is less likely to be produced without special equipment. The studio also offers a wide range of staging solutions - the use of greenscreen, for example, adds value to the visual experience. Often, network connections at home are also a constraint on the high-quality streaming of heavier audiovisual content.

When organizing a virtual event, event security is an important aspect of production. The security measures for a virtual event differ significantly from the requirements for live events. In particular, security issues need to be carefully considered from the perspective of the nature of the incident (Nieminen 2020, 41). Some events use a registration link, which allows anyone who has received the link to participate in the event. Participation can also be restricted via a personal code, or even strong bank identification. It may also be necessary to pay attention to the security of network connections. If events are attended from home, home networks are generally less secure than organizational networks. Maintaining the anonymity of participants is also part of information security.

Moderators are responsible for maintaining order in virtual events, and the rules of the game must be drawn up carefully. In larger events, the cooperation of the moderator team is essential. In this case, too, the planning and direction of operations depends on the situation (Muukkonen & Putkonen 2020, 72). A good team also includes a facilitator, technical support and, in some cases, a technical facilitator.

Communication

With regard to event marketing and communication, there are some principles to consider when it comes to virtual events. Marketing per se is not very different from marketing live events, but there are bigger differences in the area of communication. It is a good idea to keep the participant's minimum knowledge of technological requirements and participation in virtual events clear and thorough (Nieminen 2020, 19). Good communication helps the participant to both prepare in time and at the same time maintain activity during the event. Good communication also guides the participant to act as desired both in the event itself and after the event.

A well-written script also serves as a starting point for the productization of the event and thus for marketing. Communicating through storytelling elements is easier and the description of the visual form is no different from a live event. In the marketing of a virtual event, special attention should be paid to promises of some special added value. A virtual event may not need to be promoted as far in advance compared to live events, since travel and related activities such as booking tickets and accommodations are often left out (Muukkonen & Putkonen 2020, 55). However, the time allotted for marketing communications is always case-specific and should be carefully planned and implemented.

Documenting a virtual event is often easier than documenting live events, as video recording of an event, for example, does not necessarily need to be considered separately when the material is created through a stream. However, the event organiser must agree with the service provider responsible for audiovisuals what material is to be documented, how it will be edited and what kind of post-processing is desired.

The key benefits of virtual events

There are many advantages to event virtualization (virtual events and hybrid events). Listed below are some of the key ones:

- Ease of participation and time management
- Opportunity to build your own event experience
- Interactivity
- Greater audience potential - also at the international level
- Agile production of recurring events; event models can even be cloned, for example in workshop and training models, while maintaining quality standards
- Gamification
- Groups of people who would not otherwise be able to take part in the event (accessibility, living in another place or in another country, busy, otherwise restricted) are also included

- It is possible to include performers who would otherwise be difficult to obtain (too expensive, do not want to be physically present, etc.)

- The importance of time and place becomes blurred when virtualization can provide an extension to even a physical event. An example of this is the availability of trade fair stands, on-demand content and voluntary activations outside the actual showtime)

- Costs in virtual events are a fraction of the cost of physical production, especially in large events

- Virtualization enables high production quality in tight budget productions if an online studio for remote performances is used instead of a webinar or Teams-like implementation. Online studio solutions enable a good studio director to produce TV-like production without cameras and heavy logistics.

(Event producers 2022)

TASK

Sketch a working group to produce a medium size virtual event:
Which roles and tasks need specialized professionals?
Which tasks can you manage by yourself?

References

Dahlman, Terhi. Event Production Process 2021. Not published.

Event producers 2022. Several locations, 2.2.2022-25.2.2022. Interviewers: Vilma Lumio, Johanna Tolvanen & Jukka Salmela.

Hoffren, Jari. Stages and Visibility of Event Production Processess. Teaching material. No date. Not published.

Muukkonen, Anna & Putkonen, Emmi 2020. Virtuaalimaailmassa tapahtuu: Käsikirja VR-tapahtuman tuotantoon. Metropolia Ammattikorkeakoulu & LAB-ammattikorkeakoulu 2020.

Nieminen, Marjaana (ed.) 2020. Virtuaalitapahtumat Miksi, miten ja niksit järjestäjälle. Tapaus.

Raatikka, Anniina 2020. Virtuaalitapahtuman järjestäminen – mitä pitää huomioida? Retrieved 17.2.2022. https://huikea.net/virtuaalitapahtuman-jarjestaminen/

Tapahtumantekijät 2020. Virtuaalitapahtumaopas - 10 vinkkiä vaikuttavaan virtuaalitapahtumaan. Tapahtumantekijöiden blogi. Retrieved 17.2.2022. https://www.tapahtumanteki-jat.fi/fi/blog/virtuaalitapahtuma

TOOLBOX 3.
DIFFERENT FORMATS

Sander Mosel

Streaming, live streams, webinars, live webinars, webcasts, hybrid events, virtual events, podcasts, VR and AR events, the list is long and quite confusing and with reason: as the industry is fresh and new, there is no single, universally-used name for online activities. Companies, the media and customers use different terms, one that is right in the moment.

Let's go through the main principles of these headings and consider these from a professional perspective.

Streaming

This is the most common term. It may be yoga or a simple exercise class or a real-time live concert broadcast online. It has recently become a very common way to attend concerts, when it has been impossible to attend in person.

You simply buy a ticket online and receive a link that will be activated at a certain time when the concert starts. Simple. Streaming doesn't usually have any interactivity and may not even offer the ability to chat. To confuse matters further, Netflix and YouTube, for example, are also streaming services, which means that the streaming material does not have to be real-time. Most commonly, when it comes to network streaming in real-time, the action is either captured via a single camera or a multi-camera implementation.

For example, a yoga stream has different cameras to record movements from far and near. If there is more than one camera, then the broadcast from the cameras is "assembled" in an image mixer, from which it is decided which camera image will be streamed to the participants. If you have multiple cameras and audio sources, you may not even need a physical mixer nowadays because there are also virtual mixers.

If the event is described as *live streaming* or a *live stream*, this simply means that the broadcast is a live broadcast and is not pre-recorded.

Image 1: Speaker Riku Lehtinen educating in webinar (Mosel 2022).

Webinars and live webinars

The term *webinar* is widely used to refer to streaming for teaching and educational purposes and for a broadcast that uses the presentation material from a trainer or facilitator as part of the broadcast. The webinar itself is distinct from video conferencing, although the difference is quite volatile these days. Zoom or Teams, for instance, might be built for video conferencing, but can be used to organize high-quality webinars without any problems. The biggest difference compared with video conferencing is that webinars often have more outside participants with different rights than video conferencing. In video conferencing, for example, everyone may have the right to share their own screen or presentation, but in webinars, only the trainer, organizer, or host has the right to do so.

Webinars can be organized in real time, as a live webinar or with pre-recorded material. For the latter, there are two options: Automated webinar or on-demand webinar.
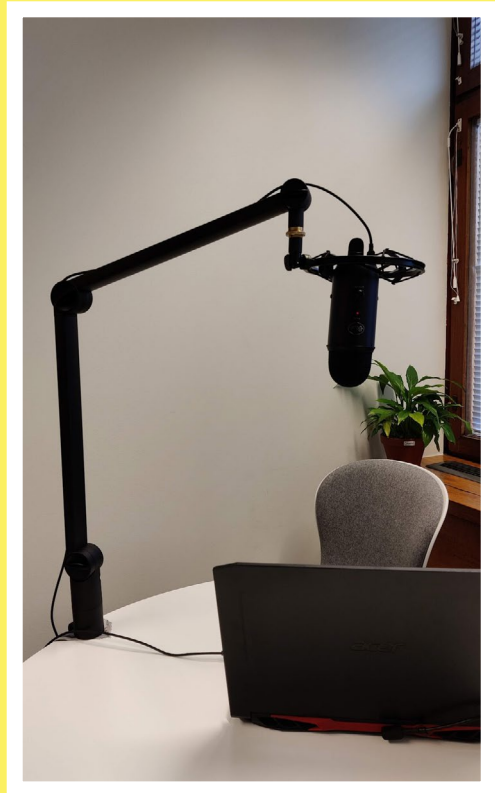
Image 2: Easy webinar setup (Mosel 2022).

An automated webinar can be scheduled to start at a certain time. Participants are able to ask questions and participate in questionnaires, but the trainer may not be answering them at the same time. Participants may not always be aware they are attending an automated webinar and may assume it is a live webinar. It is often not advertised very much, but I think it would still be fair to inform participants.

An on-demand webinar can also be called a *webinar recording*. That is, a pre-recorded webinar scheduled to be viewed via a specific link for a period of, for example, 30 days. The on-demand webinar also allows participants to ask questions and participate in interactive surveys and activities. As with automated webinars, the trainer may not respond to questions right away.

Building a webinar is pretty easy. You need a camera, a microphone, a webinar platform and a broadcast computer, but more on these later.

Webcasts

Webcasts are practically the same as streaming or webinars, but perhaps focus more on broadcast media such as video. In webcasts, participants usually don't have the opportunity to interact, although the terminology is inconsistent, and I have seen the term webcast used to describe a traditional webinar or regular streaming.

Virtual and hybrid events

While all of the terms above are basically different forms of virtual events, the word *virtual event* usually means a slightly more complex production than, for example, a webinar. A virtual conference, for instance, is a kind of virtual event. Virtual events are a step ahead of streaming and webinars: they incorporate more interactivity and involvement and are therefore often more expensive for participants. Virtual events aim to mirror ordinary physical events as closely as possible.

Virtual events can offer different spaces where you can chat with other participants via audio and video. Virtual events can have different rooms for different exhibitors, partners and sponsors. There can also be many different virtual stages, with speakers speaking on different virtual stages at the same time. That is, participants have the opportunity to build their own agenda for the day according to their own interests and to visit the rooms of virtual exhibitors as they please. In addition, 1-2-1 meetings are part of a virtual event. Virtual events can be networking events, conferences, meetings, or sales and marketing events.

A hybrid event is an event form that involves both participant groups: physical attendees and online attendees. Both have the opportunity to interact and chat or communicate among themselves. Educational training, for example, can be offered as a hybrid event.

CHAPTER 2.

VIRTUAL EVENT EXPERIENCE

Laura-Maija Hero

Virtual experiences are becoming increasingly important as part of events and festivals, but also as stand-alone events online and on VR-platforms. Events are inherently about experiences. Experiences are what motivate individuals to attend, and the multifaceted nature of motivation leads to individuals seeking and supporting different events (Jaimangal-Jones 2014). There is a particularly strong connection between the distinctive nature of event experiences, and their ability to act as vehicles of experiences. The chasm in roles creates a division between event organizers as the designers of experiences (producers), and event visitors as consumers of experiences. The division between the production and consumption roles, however, has fortunately faded as the experience economy thinking (Pine & Gilmore 1999) has taken root in event production. In this chapter, I explore one Vevent Worlds event experience and draft a tool you can use to listen to your own virtual audiences.

Often the evaluation of the experience is reduced to survey measures such as satisfaction and the probability of retention (repeat visitation). However, we should question whether such binary metrics really tell us anything significant about the experience. Researchers have recently argued that the event form and purpose are important, but that personal motivations for attending do not take away from the fact that all event organizers must attempt to understand the experiences of guests, including virtual guests. The evident differences between business, leisure and art events are rather shallow when it comes to the individual attendee and the experiential and social nature of planned events. (Davies & Jaimangal-Jones 2020; Richards 2020.)

The experience is highly dependent on the expectations and motivation, conditions, environment and the full journey of the attendee. The experiential outcomes like emotions, satisfaction and learning outcomes feed to the actual experience core in return.
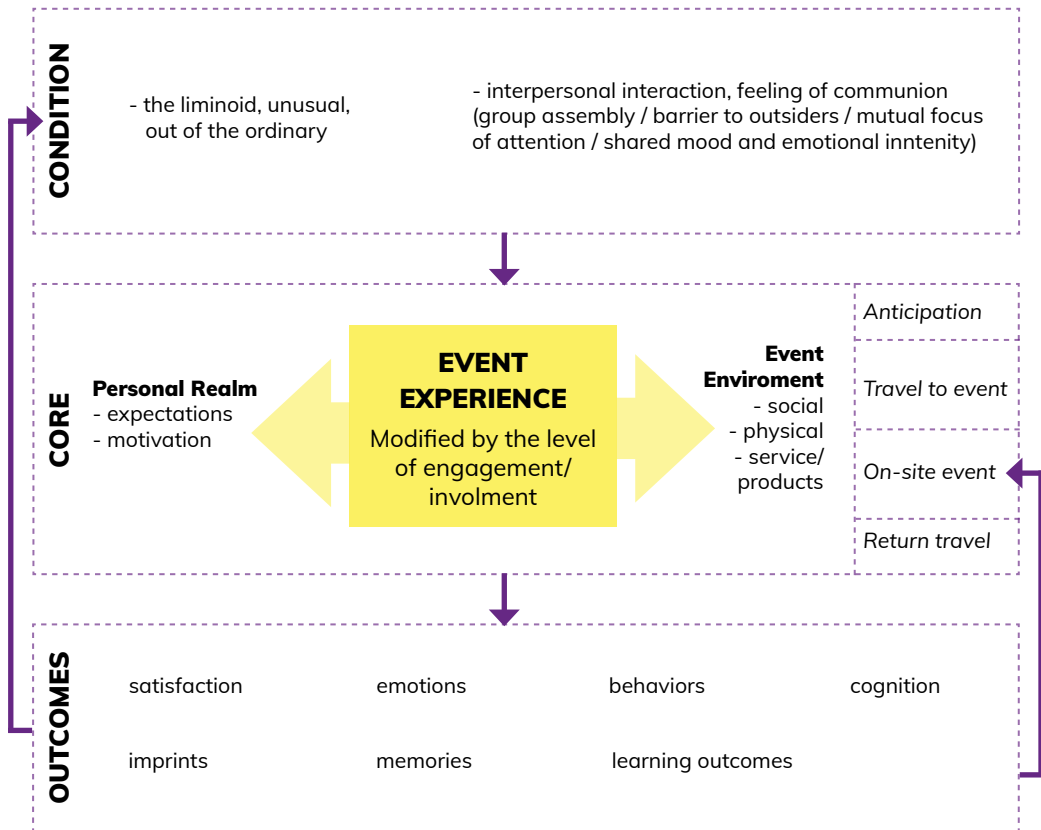
Figure 1: Event experiences framework (De Geus, Richards & Toepoel 2016).

The Event Experiences framework by De Geus et al. (2016) incorporates the conditions, the core (multi-phased and multi-influential) and the multi-outcomes of the event experience. In this model, the event experience is understood as an interaction between an individual and the event environment (both physical and social), modified by the level of engagement or involvement, involving multiple experiential elements and outputs (such as satisfaction, emotions, behaviours, cognition, memories and learning), that can happen at any point in the event journey.

Vevent Worlds as a virtual event experience

In our first observational study on virtual event experiences (Hero & Saarinen 2022), we invited N=16 observers into the Vevent Worlds and asked them to fill in an observation form. We used the event experience scale (EES, De Geus et al. 2016) and its well-defined event experience factors as an observation framework. The scale offered a structured and holistic approach to the personal experience and consisted of four realms: cognitive engagement, affective engagement, physical engagement and novelty. Interestingly, the framework was clearly constructed in physical event conditions. We found that the Vevent Worlds was welcomed with joy and praise, excitement and some

irritation, caused by technical issues. According to the visitor observations, the spaces allowed for affective, cognitive and "physical" engagement and were new and quite unique. (Hero & Saarinen 2022.)

Firstly, the affective engagement of the observers was surprisingly strong. The observers found the Vevent Worlds intimate. Intimacy was emphasized in spaces that were visually pleasant, optimally-sized and different from the real world. When the virtual walking distances were long, the feeling of intimacy was affected negatively. Most of the observers felt excited visiting Vevent Worlds. For some, the excitement came from the opportunity to freely wander around and enjoy the visually stimulating worlds. Some of the observers had participated in the idea phase of the planning of the surroundings. Visiting their "own" spaces - spaces they had designed – was exciting (cf. Pine & Gilmore 1999). Some emphasised the meaning of interactivity and games. Excitement was curtailed by technical problems; one owner of a Mac computer had access issues and two did not have enough power to run the application smoothly on their computers. The observers were either very much aware of their own values in the spaces or did not understand what was meant by values in this case. Equality was mentioned the most. Other values that were mentioned were human rights, honesty, positivity, curiosity, ecology and community. Most of the observers felt a sense of adventure. This feeling was aroused by the possibility to move freely around and by finding unexpected things around the corner in these new types of spaces. However, some people got lost and felt that they did not have an agreed mission. Most of the observers felt that the activities in the worlds distracted from stress and offered a possibility to escape the real world. Some felt that they gained emotional energy from the calming atmosphere due to the colours and sound and the possibility to meet people and interact with them. However, some felt that sitting in front of the computer might prevent positive feelings. This could be resolved with more immersion, ie. by using VR glasses. (Hero & Saarinen 2022.)

Secondly, cognitive engagement was emphasized as the content of the event was mostly new. The observers found that they had learned to use a VR application and had a greater understanding of what is possible in events in virtual reality. Virtual reality and 3D spaces based virtual events were totally new to the observers. As the content and meaning of the event was to share knowledge about virtual event production, it seems a good choice to bring the event producers into the VR and let them experience the spaces themselves. Two of the observers reported that there was nothing new to them and they did not learn anything. Most of the observers found that the spaces made it possible for them to think. They were able to focus, as they found peaceful corners and private rooms and the possibility to mute all sounds. (Hero & Saarinen 2022.)

Thirdly, physical engagement was possible as every one of the observers felt able to take an active role in the Vevent Worlds. They were not only spectators, but behaved like active collaborative members of the space. They reposted that they had had actual discussions with each other, chatted digitally by messages, moved freely around, and grabbed and used things in games and activities. However, the observers found that their senses were not stimulated to the extent that we could call this experience a multisensory experience. Although no senses other than sight and hearing were stimulated, sight and hearing were stimulated effectively. A couple of observers mentioned touch, however.

They described feeling touch when they moved around but could not really explain the feeling. (Hero & Saarinen 2022.)

Most observers felt that they could use their creativity in the spaces even though it was technically very limited; you could not draw or use paper and pen in the surroundings. The observers emphasized the possibility of designing their own avatars and dressing them as they wanted. They could do a photo shoot with the integrated camera in the VR application and use their creativity in the tasks the spaces offered. They also mentioned creative discovery, as they were able to wander freely around. A couple of observers found that there could have been more tools to get creative. After all, everything was "ready made" in the digital encoding of the spaces in the game engine. The Vevent Worlds were seen to enable audience engagement. The live discussions between the avatars with real sound, the possibility to ask, to participate in tasks and to express feelings made this engagement possible. However, for one observer, the AltspaceVR platform seemed to have quite significant limitations. (Hero & Saarinen 2022.)

Fourth, the novelty factor added positive meaning to the experience. Most of the people felt that the event was unique as it was a versatile and visually appealing 3D event environment. Some of the observers felt that the place was unique, combining learning and a VR event venue in one entity. The unique co-creation method was also mentioned: it was explained to the observers that students participating in a multidisciplinary innovation project course had come up with the idea for the spaces, that were then brought to life by three paid XR designers according to the students' draft designs. (Hero & Saarinen 2022).

To conclude, the virtual event experience can be assessed using the event experience scale. The experience is engaging when these experience factors are taken into account. It is possible to argue that the experience is very much coloured with the novelty of the venue and the 3D way of moving and the opportunity to be active. Will the results be the same when attendees visit the spaces again and get used to these types of events? When will all the attendees get their VR glasses and start attending these events properly? When mediated by computers, the experience is not complete. It is evident that for the VR event experiences, the EES framework does not account for all factors related to the virtual reality experience. Jung & Lindeman (2021) have suggested a model for exploring the quality of VR experience using the dimensions of presence, immersion, and illusion. If it is intended to be used in the context of virtual events, it may be wise to delimit the use of this model to those events solely offered in VR and only with VR technology as it is designed to be used to describe the subjective feelings that arise in a VR experience. Illusion refers to the state of being in a place in spite of the sure knowledge that you are not there. Realism (or fidelity) can be described as the extent to which the virtual environment emulates or copies the real world. Presence is understood as the feeling of 'being there' in a place or environment when physically located elsewhere. Immersion means both perceptual immersion and psychological immersion in VR contexts: the subjectively perceived, deep psychological engagement to the surrounding environment and perceived events in the computer-generated world. Immersion is also a systemically objective characteristic of a VR system. (Jung & Lindeman 2021; Matthews, See & Day 2020.)

Listening to the audience:
virtual event experience observation tool

It is time to equip you with a usable tool for listening to your audiences. With the attached practical Virtual Event Experience Observation tool (VEEO), you can collect information by A) recruiting mystery shoppers to observe your event on the spot, both as it is happening and before and after the event to gain an understanding of pre- and post-production actions; B) developing a survey tool to be delivered to audience mobile phones right after the event. The tool includes the EES and three questions related to the VR types of experiences in order to test an experience scale more tailored to the VR event. Let's try it together! Keep me posted on the results!

TASK: LISTEN TO YOUR VIRTUAL AUDIENCES!

When you produce a virtual event, it is important to listen to your audience and their experience! This VEEO (Virtual Event Experience Observation) tool helps you collect experience-related material from virtual events. You can use the variables as a survey tool, apply the propositions to your interview guide or recruit some observers to observe your event in the style of a mystery shopper. Remember that collecting private data should always be done carefully in accordance with the GDPR. The General Data Protection Regulation (EU) 2016/679 (GDPR) is a regulation in EU law on data protection and privacy in the European Union (EU) and the European Economic Area (EEA).

Description of this survey/ observation, interview (add your introduction text)

Respondent 's unidentified nickname, age and professional title and place of employment

Issue	Answer in your own words, give examples and describe.
1. Affective engagement	
I was excited in event X. Why? Why wasn't I?	
Did Event X act as a place for mental recharging? How?	
Was there an intimate atmosphere at Event X? Where, why?	
I felt a sense of adventure. What triggered it, or why wasn't it triggered?	
I was aware of my own values when I visited event X. Where, when for example?	

Issue	Answer in your own words, give examples and describe.
I felt that I really got immersed into a different world. What happened? What triggered it?	
An illusion is also called an impression of reality created by a work of art, performance or the like. Describe your illusionary experience.	
The event was digitally made and the experiences were in virtual premises. What felt realistic? Did you feel real feelings?	
2. Cognitive engagement	
Spaces allow you to focus on thinking. Which facilities? Why not?	
It was possible to use my own intelligence in event X. How, for example?	
I learned something. What?	
I got new information. What?	
3. Physical engagement	
The spaces allow for reflection and conversation with others. Why?	

Issue	Answer in your own words, give examples and describe.
It is possible for a participant to play an active role in event X.	
Event X enabled audience participation. How?	
Event X allows you to use your creativity. How, for example?	
My senses were stimulated (taste, smell, hearing, smell, feeling). What not?	
4. Novelty	
I got the impression that event is different from other events in this genre. Why? What was different?	
I experienced things I did not know before. What?	
What is unique about this event?	

References

De Geus, Sjanett & Richards, Greg & Toepoel, Vera 2016. Conceptualisation and operationalisation of event and festival experiences: Creation of an Event Experience Scale, Scandinavian Journal of Hospitality and Tourism 16, 3/2016, 274-296, DOI: 10.1080/15022250.2015.1101933

Hero, Laura-Maija & Saarinen, Santeri 2022. Participants' event experience in a VR event venue. An observational case study. Manuscript.

Jaimangal-Jones, Dewi 2014. Utilising ethnography and participant observation in festival and event research. International Journal of Event and Festival Management 5, 1/2014, 39–55.

Jung, Sungchul & Lindeman, Robert W. 2021. Perspective: Does realism improve presence in VR? Suggesting a Model and Metric for VR Experience Evaluation. Frontiers in Virtual Reality (2)693327. Doi: 10.3389/frvir.2021.693327

Matthews, Benjamin & See, Siang Zi, & Day, Jamin 2020. Crisis and extended realities: Remote presence in the time of COVID-19. Media International Australia 178, 1/2020, 198–209. Doi: 10.1177/1329878X20967165

Pine, B. Joseph & Gilmore, James H. 1999. The experience economy: work is theatre & every business a stage. Boston: Harvard Business Press.

Richards, Greg 2020. Measuring the dimensions of event experiences: Applying the Event Experience Scale to cultural events, Journal of Policy Research in Tourism, Leisure and Events 12, 3/2020, 422-436. DOI: 10.1080/19407963.2019.1701800

Wreford, Olivia & Williams, Nigel L. & Ferdinand, Nicole 2019. Together alone: An exploration of the virtual event experience. Event Management 23, 4-5/2019, 721-732. Doi: Https://Doi.Org/10.3727/152599519x15506259855625

TOOLBOX 4.
THE IMPORTANCE OF MANUSCRIPTING AND SCHEDULING

Sander Mosel

Just like in a traditional event, in the virtual event sector, it is important to define the goal, topic and target group of the event in the first stage of production, as the form of virtuality that will be used and needed depends on these. If the goal and purpose is to get the training or educational event online, there are many affordable webinar solutions. However, if the plans are a little bigger and you want to "wow" the public, you should consider other viable and budget-friendly virtual forms for making the event virtual.

Every event begins with a meticulously planned script and schedule. Nothing should be left out of the script, as a well-written script will save you in a pinch. Virtual events are no different; production is a "time game", and everything must happen according to the clock.

I recommend including all event information in the script, including presenters, performers, platforms, performances, musical performances, technical equipment, and so on. There is no set template for the script, so customize it to your liking and understanding. The script can be text-based or task-based, using a project management platform such as monday.com

A suitable back-up plan should be written for each shooting situation or piece of equipment, and the script should include a focus on what could go wrong. This gives you peace of mind because you already know what to do in any eventuality. Also, if you, as a producer, become ill just before the important moment and are unable to work on the project, the script is simple to share with another producer. It's a good idea for the entire production team to read the script before the event so that everyone is on the same page and knows what is going on and what is going to happen.

The timetable or action plan is an important part of the script as the action plan displays what is happening at any given second in a live situation. It is a good idea to prepare a schedule for the technical producer and the host of the event as well. You will often need two different schedules for this, one that is more tech-based and the other more agenda-based.

The schedule should be closely monitored during the event; it will show which camera is on in any situation, who is the presenter on any given screen and what is happening during the coffee break. According to the schedule, it is worth going through the virtual event at least twice in a test mode, mainly for the producers and performers and for equipment and platform assurance.

CHAPTER 3.

VIRTUAL EVENT PLATFORMS

Oona Tikkaoja

There are masses of platforms a producer can select from when planning to organize a virtual event. Which one is the best depends, naturally, on the budget and skills of the team and the nature of the planned event. In this chapter, I explore the field of platforms and services to help you identify a suitable platform for a specific event.

In the beginning, we have to define what we mean by *virtual events*: are all the events organized on the Internet virtual, or does the term refer only to events organized in 3D, immersive virtual reality spaces? Both definitions are used (Event Manager Blog 2021, 25), but in this chapter, I will focus on 3D virtual reality event spaces to narrow down the subject. Metaverse is the buzzword for a forthcoming virtual 3D layer mingling with our physical world (Event Manager Blog 2021, 9). So, these 3D, immersive event spaces could be called *metaverse platforms* (as VR/AR Association calls them in its 2021 report). Anyhow, the Metaverse is not here yet: it is not possible to float from one virtual world to another, but instead the user must register to all these myriad services separately and make a new avatar in every service (Oremus 2021).

Danny Stefanic, the CEO of a virtual event platform MootUp, emphasizes the level of experience offered by 3D environments compared to 2D conference platforms. In a 3D virtual environment, the participants are offered a personal experience in which they can interact with the space and with the other participants. There is a sense of agency which is not achieved in a 2D conference, where every participant has a similar viewpoint. This, according to Stefanic, is an important reason for selecting a 3D event space. (Stefanic 2022)
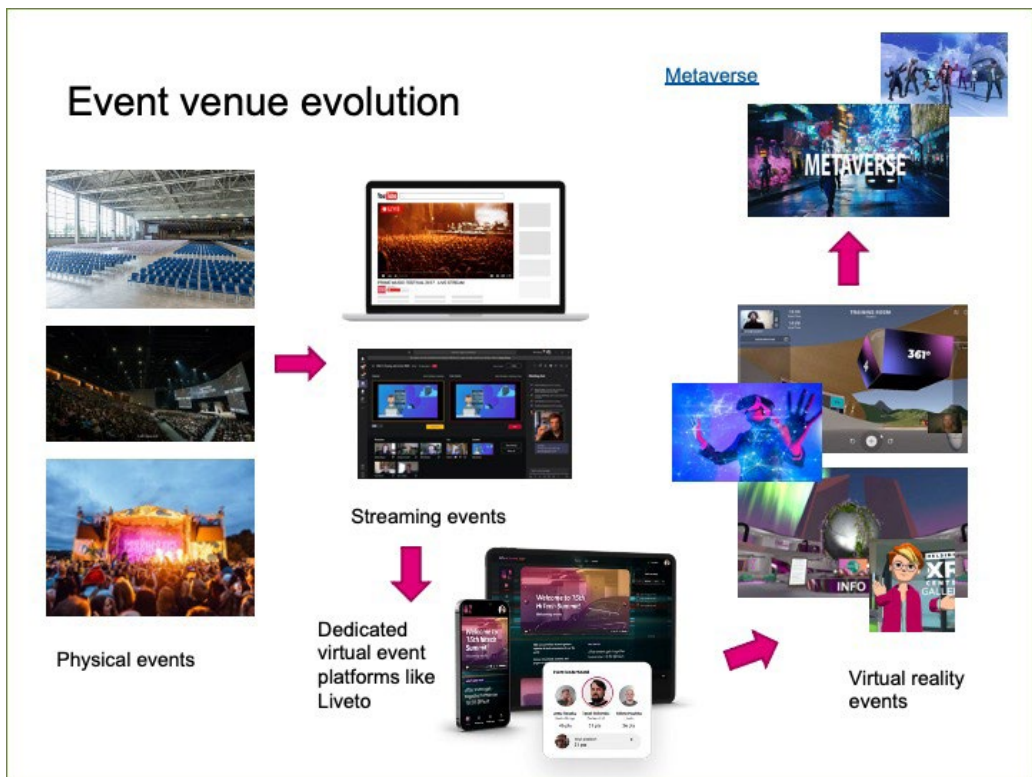
Image 1: Virtual event venue evolution by Laura-Maija Hero. The current variety of possibilities ranges from physical events to streaming and virtual reality platforms. The image credits in columns staring from the upper left corner: Suomen Messut, Arctic15, Ruisrock / Prome Music Festival, Zoom, Liveto / Helsinki XR Center, Rond Productions, The Digital Speaker

3D Event Platform Types

In terms of costs and the level of DIY, the platforms can be divided into three classes:

- Virtual event platforms with support, which offer a virtual venue and help the producer with production and technical issues (Virbela, Exvo or MootUp, to mention only a couple of examples from the vast selection) Some of the platforms are focused on professional training, health care or marketing. Here we concentrate on platforms suitable for socializing and events.

- "Do-it-yourself" platforms (like Microsoft AltSpace or Mozilla Hubs), where the platform is offered to users without technical management in specific events.

- Decentralized virtual worlds (open metaverse), which are not owned by a certain company, but based on blockchains and thus the government is decentralized among the users. (For example, Decentraland and Sandbox).

Image 2:
The writer's avatar in Virbela Open Campus.

These categories can be compared to hiring a physical event venue: in the first case, the producer hires a venue and also the technical personnel, in the remaining cases the contract includes only the event venue and some manuals to get by. Naturally, the level of support varies according to the type of service one has selected to pay for.

Virtual Event Platforms with Support

When using platforms with support, the event producer only has to take care of the schedule and performers, and any technical problems can be referred to the personnel. The visual outlook of the venue can be modified to different degrees depending on the selected platform and contract. This is, financially, the most expensive option, but also the easiest and safest, if the producer does not have a skilled team.

These kinds of services are a good choice when organizing a large event (over 50 participants) if the team does not want to take responsibility for creating the space and/or managing technical issues. The array of services is so large and constantly changing that we could not cover an inclusive selection in this chapter, but we introduce on the table below some of the most well-known platforms for your further inspection. Most of the companies offer tours and one-to-one presentations to their platforms, so I encourage you to research the possibilities. Searching "virtual event platform" on the net will give you a vast array of platforms to select from.

Image 3: A screen shot of Virtual Poetry Night organized by Humak's students Ida Hansen, Oona Kaminen and Adafiia Kärppä in February 2022. (Hansen, Kaminen & Kärppä 2022).

Do-it-yourself Platforms

Do-it-yourself platforms are like building a venue of your own, out of ready-made elements or from scratch. The platforms do not offer management or technical assistance, but naturally a lot of documentation and tutorials to support learning. It is possible to modify a ready-made event venue or build a unique one. This option requires more work than cash, which offers small organizations a good opportunity to start testing out virtual event management. When using these platforms, it is of course possible to hire a professional to create the venue for you, if learning new skills is out of scope.

Mozilla Hubs and AltSpace are 3D platforms that allow anyone to make a user account free of charge. AltSpace uses a technology called FrontRow, which makes it possible to organize large events as well (Microsoft 2022). The free version of Mozilla Hubs works well in small events, but for larger ones the recommendation is to set up a private server (Mozilla 2022).

We tested out organizing small events with a cultural management student group in spring 2022. The group consisted of first year students, who did not have any previous experience of virtual events. Many of the students had not even participated in a 3D online event before they received the challenge to organize their own event. Seven student groups organized a large array of events on Mozilla Hubs and the ThingLink platform, for example a Virtual Poetry Night, Virtual Art Exhibition, Valentine's Day Poem

Competition, Wine Yoga Event and Virtual Dinner Party. In the feedback session of the projects, the students reported that although learning to control the event space was difficult at first, they were satisfied with their events and the learning experience. Before starting the project, students were given short introductions to the platforms and examples of events to help generate ideas for the event content, but this education was not very extensive to give the students a chance to learn by trying it out.

As a result of our experiment, I can say that organizing a small event in a 3D virtual platform is possible without prior expertise or knowledge of 3D or online events. Naturally, before the event, it is important to try out different possibilities and to test one's own event space thoroughly.

Decentralized Virtual Worlds

There are various future visions of the Metaverse. One is a Metaverse dominated by large companies; another is built on blockchain technology, which allows decentralization of power. The latter is called the Open Metaverse. (Outlier Ventures 2021, 6).

Decentralized platforms differ from the services presented earlier in this chapter in one significant way: they are not run by profit-oriented companies but owned by their users and governed by them through a DAO, Decentralized Autonomous Organization. It is possible to buy digital land in the world, and thus become a citizen. Because these services are based on blockchain technology, the users have to make a crypto wallet in order to fully participate.

Image 4:
The writer's avatar visiting the Sotheby's in Decentraland, December 2021.

Decentraland, based on Ethereum blockchain, is the oldest decentralized world (Decentraland 2022). There are various other decentralized worlds, for example Sandbox, Cryptovoxels and Victoria VR, which is set to be launched during the year 2022. In Decentraland, it is possible to organize events on your own premises, which can be built on a parcel of land you own. The events can be marketed in an event listing provided by Decentraland (https://events.decentraland.org/).

Compared to the first two types of virtual event venues presented in this chapter, employing a decentralized world as one's event venue demands some extra work, in the beginning, to understand how the world functions. On the other hand, the idea of Open Metaverse is an inspiring one. With the digital world, you need to consider where to invest your time and money. If you have focused on content creation in a certain service, it is possible that one day that service ceases to exist. When digital property is tied to cryptocurrency, the risk of losing your investments is smaller than when operating with closed systems. Decentralized worlds are based on different blockchains and it's important to study these before deciding which world to invest in – or maybe you have the resources to invest in several? Virtual worlds are definitely worth exploring although we cannot currently know in what direction they will evolve.

Table 1: List of some of the commercial event platforms.

Platform Name	Website	Type of the Space
Liveto	https://liveto.io	2D
Hopin	https://hopin.com	2D
Brella	https://www.brella.io	2D
Virbela	https://www.virbela.com	3D
Exvo	https://allseated.com/exvo	3D
vFairs	https://www.vfairs.com	3D
MootUp	https://mootup.com	3D

TASK

Go to the webpage hubs.mozilla.com, create a room and invite couple of friends to join you. Try out the buttons on the dashboard. Decorate the space with some of your own images and ready-made 3D models and explore the space with your friends.

References:

Decentraland 2022. Decentraland DAO. Retrieved 28.2.2022. https://dao.decentraland.org/en/

Event Manager Blog 2021. Meet Me at the Metaverse. Exploring the Future of Immersive Online Event Experiences. Retrieved 25.2.2022. https://www.eventmanagerblog.com/meet-me-at-the-metaverse

Hansen, Ida & Kaminen, Oona & Kärppä, Adafiia 2022. Raportti. Virtuaalinen Runoilta. Unpublished report of a study task.

Hero, Laura-Maija 2022. Virtual Event Experience: Research outcomes and a tool. Unpublished presentation in a Vevent Forum 14.3.2022

Microsoft 2022. Scaling your audiences with FrontRow feature. Retrieved 25.2.2022. https://docs.microsoft.com/en-us/windows/mixed-reality/altspace-vr/faqs/scaling-audiences

Mozilla 2022. Hosting Events in Hubs. Retrieved 25.2.2022. https://hubs.mozilla.com/docs/intro-events.html

Oremus, Will 2021. In 2021, tech talked up 'the metaverse.' One problem: It doesn't exist. The Washington Post 30.12.2021. Retrieved 25.2.2022. https://www.washingtonpost.com/technology/2021/12/30/metaverse-definition-facebook-horizon-worlds/?utm_campaign=January%20Newsletters&utm_medium=email&_hsmi=200688860&_hsenc=p2ANqtz-92IFPlurPDsdXdtS5ZAHQ77h5rR1ERZEW3dxv3OrP-JSqlMvMfLgWbVz1FF7emwGyJoOqnLZ3uLxRFVxJ3KWekM14PNIg&utm_content=200688860&utm_source=hs_email

Stefanic, Danny 2022. An Interview in the MootUp environment, by Oona Tikkaoja. 28.2.2022

VR/AR Industry Sector Report: Metaverse Platforms 2021. Retrieved 25.2.2022. https://www.thevrara.com/blog2/2022/1/3/download-our-new-report-on-metaverse-platforms

TOOLBOX 5. PLATFORMS AND DISTRIBUTION

Sander Mosel

The event platform is a significant part of the production, as it is the only visible part that participants see and experience. It has to work smoothly and it has to be simple enough. In addition, it has to offer many different features such as the basics, customization, scalability, as well as involvement and engagement options. The choice of event platform must be influenced by features, possibilities, layout, functionalities and, of course, price. All depending on your needs.

Before you go looking for the right one, you should write down all the things you need for your event platform. This will make the search much easier, as there is an insane amount on offer.

These are my favorite platforms for each of the different formats.

For webinars: My absolute all-time favorites are Teams, Zoom, WebinarGeek and Webex. These have met all the requirements for my clients. There are, of course, differences between them, but all offer the basic features at a reasonable price. I have used almost all the options on the market and with others I have encountered some problems or they have not been suitable for the production - that is why I recommend these four.

For virtual events: Teams, Zoom, Webex, Hopin, Hoppier and Wonder. If you thought that Teams and Zoom could not produce virtual events larger than webinars, you were wrong. I can say that most small virtual events are produced with Zoom or Teams, as they provide almost everything you need. Even most of my larger productions have been created for customers at their request with Teams or Zoom and I have nothing bad to say about these platforms.

But if the productions grow a little bigger, then it's worth moving to bigger platforms. You may have many performers, for example, or you may want to use several studios or stages and more networking and options for involvement.

For streaming: The absolute number one right now is Vimeo. They are really in a growth position and, as a platform, already offer all kinds of things. It's worth a look, because a lot of game and exercise streaming broadcasts are done through Vimeo. And you can even host virtual events with it. You can stream straight to Vimeo or use RTMP stream from another platform or streaming studio.

1. YouTube Live
2. Facebook Live
3. Instagram Live
4. LinkedIn Live
5. Twitter Live
6. TikTok Live
7. Twitch

For VR/AR events: I have not produced these directly for customers, but I know how the production goes and the only platform of which I have heard good suggestions is ALTVR for VR events. But read more about the VR events in other chapters of this book! AR (augmented reality) technology offers plenty of great opportunities e.g. for physical events, as they need a physical trigger to launch the digital 3D elements. However, it also offers opportunities for virtual events: e.g. AR posters that launch from a visual badge that can also be scanned from computer screens.

About distribution

This is a complex case, as all platforms offer their own distribution capabilities, but I have found that they are not perfect. The only near-complete distribution channel that I have met is probably WebinarGeek, where you can customize your recordings right down to the settings and even build different channels for them. This works practically the same as Vimeo, but is more detailed and cheaper.

For example, if you need to set a 30-day viewing right, or a personal viewing right, or a maximum limit for watching a recording, or to specify that a recording opens only after you register. I've noticed that WebinarGeek really works here, but if you don't have high requirements, then the platforms' own distribution channels are usually quite good, as long as they are not running out of memory. WebinarGeek has, at least for now, unlimited cloud space for one monthly fee.

If you're looking for a good virtual studio to manage your broadcast, I recommend checking out StreamYard and OBS. Also, check out a streaming software called Manycam. By using these, you get different looks, layouts, opportunities to make the broadcasts even more inviting. For example, they allow you to stream content to many different places at the same time, you can control your speakers better, you can get different graphic add-ons, and so one. Take a look at these!

CHAPTER 4.
VIRTUAL EVENTS BY THEIR SIZE

Benny Majabacka

This chapter compares virtual events by their size. The goal is to outline the features that are characteristic of virtual events of different size classes. Several virtual event producers were interviewed for this chapter by a student group (Lumio, Tolvanen & Salmela 2022). The perspectives of the event producers showed that virtual events differ significantly from live events in terms of scale-type production effects; where an increase in the number of participants in live events has an immediate impact on a number of aspects of production, in a virtual event the number of attendees does not necessarily mean a much larger production process. In virtual events, the change in size means, in particular, an increase in the technical characteristics of production. The number of staff at large live events can be in the thousands, but in virtual events it's hard to imagine such a situation unless it is a hybrid event.

The challenges and benefits of different sized virtual events

Many of the challenges and benefits of a virtual event are the same for small, medium, and large events. The biggest variables in all size categories are related to the commitment of the participants to the event itself during the action. In practice, this means producing content of such high quality that participation is assured and the rhythm of the event is maintained so that it does not disappear during breaks. The challenges of marketing and communication affect everyone equally. Depending on the nature of the event, there should be an effort to meet participants, as there is no automatic interaction as there is in live events.

Similarly, virtual events of different sizes repeat similar benefits from a production perspective. The same basic resources can be used to produce events for a larger audience by adjusting the scale. Saving time is an integral part of the benefits of virtual events: no travel, no waste or food waste. Events can also be easily saved for later viewing

Image 1: Small Virtual Event. Small scale events can be broadcasted with light equipment and low costs (Istock photo 2022)..

and materials can be utilized to create new events. Virtual events are thus often more cost-effective than live events. Rents, reservations, and more are also kept to a minimum, except for large virtual events where the program requires an extensive framework. There is often a more relaxed attitude in virtual events.

It is not always advisable to rent space or staff for various production tasks. Also, catering costs are often not necessary to consider. A thousand-person event can cost the same as a hundred-person event. The biggest differences can be found in the technology required and the number of staff.

The following examples display the most common traits for different size virtual events.

Characteristics of small virtual events

- Equipment: Own hardware, Laptops, Webcams, Cell Phones

- Agile implementation with virtual connection to the participants

- Platforms: free social media platforms eg. Youtube, Facebook, Discord etc.

- Interactivity: Individuals have the opportunity to talk and share a picture, discussion groups, workshop templates. Interactive content based on the technical possibilities of the used platform eg. chat

- Workgroup size range: 1-5. No cameraman needed but some times used. Customer's premises, existing furniture.

- Content: Often self-produced by the event organizer

Image 2: Medium size Virtual Event. A medium size virtual event requires a small production team and some specialized skills to execute (Istock photo 2022).

- Depending on the nature of the event, the script can be quite free

- Expenses: Usually 0-1000€

- Cost structure: Production 20%, Content 60%, Tech (platform, cameras, sound, light) 10%, Other costs 10%

- Considerations: The event producer needs to be familiar with of all the sections of the production.

Characteristics of medium-sized virtual events

- Equipment: Rental equipment (It often does not make sense to invest in your own equipment, as technology is becoming obsolete very quickly, but always rent the necessary furniture depending on the event).

- Broadcast from a staged studio with capabilities for dual camera shooting and more dynamic control of lighs and sound.

- Platforms: free and paid

- Higher quality viewing experience

- Event materials customized for the event, intro animations, logos and professional speakers

- Workgroup size: two cameras description and control, video operator

Image 3: Large Virtual Event. Large virtual events require multicamera production and a detailed manuscript (Istock photo 2022).

- Content: screens according to the event animation materials. Sometimes a studio message board that connects participants comments into the content

- Interactivity: message wall in the studio, discussion groups, workshop templates

- Expenses: 1000€-5000€

- Cost structure: Production 20%, Content 30%, Tech (platform, cameras, sound, light) 30%, Other costs 20%

- Considerations: Mainly controlling the production and participation in certain areas. The manuscript is usually provided by the producer

Characteristics of large virtual events

- Equipment: Services are purchased from specialized companies

- Staged green screen virtual studio that is tailored to the customer's brand or existing space harnessed to the virtual event eg. large venue.
Possibly broadcasted from several locations.

- Platforms: Custom or high end commercial platforms

- Dynamic viewing experience, professional dictation as well as scripted content and entertainment.

- Customized interaction solutions as well as sometimes home-served catering and props.

- Workgroup size: screenwriter, studio director, chat moderator, two or three cameras and control, video operator, robot camera(s)

- Content: according to the event, screens, animated, interactive, and home-delivered materials.

- Interactivity: scripted according to the event, Several different encounter opportunities, discussion groups, workshop templates and gamification

- Expenses: 5000€-15000€

- Cost structure: Production 30%, Content 40%, Tech (platform, cameras, sound, light) 20%, Other costs 10%

- Considerations: The production is mainly agreed with the service provider. The own role will be agreed separately according to the event

Summary

Whether the production is a modest home broadcast or a big budget hybrid, what is needed is a producer who keeps everything in order. Project scheduling is also important. Clear communication and communication with participants, the performers and companies. Just one person or a couple of people are responsible for communication to make it clear to the performers, and the event organizer stays on the map for all the information. Attention must be paid to the choice of platform so that all needs are met.

TASK

Consider the following:

- **Production value requirement - is it possible to make inseparable basic production cheaply or is the goal to build a unique experience?**

- **Budget - a couple of thounsands of euros can make a decent production if the content is good, but the production value is created when more money are used**

- **What kind of special participant experience do you want to offer? Will it be the ease of participation, the smooth running of the event, the performers, the number of participants, the geographical location of participants, technical expertise or something else?**

- **Event Platform: One event platform seldom meets all the requirements of an event strategy, so it must be chosen carefully. This is the focus of a virtual event company when they don't do it on just one platform. The formats of the international seminar production and the cocktail parties of the team days are very different in terms of their feature requirements.**

- **Quality. In times of several video conferencing tools, distinctiveness and quality are terribly important if the audience is to enjoy and stay with them.**

- **Project management must be competent when it comes to quite technical issues and there is always a rush in event productions. Time management!**

References

Event producers 2022. Several locations, 2.2.2022-25.2.2022. Interviewers: Vilma Lumio, Johanna Tolvanen & Jukka Salmela.

Lumio, Vilma & Tolvanen, Johanna & Salmela, Jukka 2022. Raportti. Case-tutkimus virtu-aalitapahtuman järjestämisestä. Unpublished report.

Nieminen Marjaana (ed.) 2020. Virtuaalitapahtumat Miksi, miten ja niksit järjestäjälle. Tapaus.

CHAPTER 5.
TEACHING IN VIRTUAL REALITY

Laura-Maija Hero

Virtual reality can improve education by providing students with memorable and immersive experiences that would otherwise not be possible. Via the use of digital technology, virtual realities can be designed to be precisely optimal for human learning interaction, international collaboration, team project-based learning, learning for specific practical skills, learning about and for different topics and enhancing the community feel in education. Spatial internet and 3D modelled spaces are accessible to every student today with their own computers. Some universities of applied sciences offer VR glasses to borrow. Virtual experiences have the power to engage and inspire students in a unique and powerful way. As part of the Vevent project, we have investigated teaching and coaching in VR and even built a VR learning space. The coaches that were invited to this small-scale interview study were media and culture teachers and experts from four Finnish universities of applied sciences (UAS) who have had the opportunity to bring their collaborators and students into virtual spaces and facilitate learning. This chapter explores the stories of these coaches: how they experienced teaching in VR, how the production of the learning content and environment was made, what the role of the partners was and what kind of support they got.

Learning in virtual reality

In the 1980s, teachers first started to consider VR as a teaching medium that could substantially increase the appeal of the learning content and learners' learning motivation. Since then, VR technology has been applied to professional education and training (see Hawkins 1995). Ioannou, Bhagat and Johnson-Glenberg (2021), for instance, have

synthesized the current knowledge on the design and evaluation of learning in immersive and embodied learning environments, mediated by XR technologies. They found that the XR technologies can be integrated in the learning environment to allow learners to interact with critical elements in a domain without real risk; it can make the "unseen be seen" in ways that 2D media cannot. Using XR technologies, one may enable simulated environmental and socio-cultural interactions between students, educators, practitioners, patients, workers, or other stakeholders in a safe learning environment that authentically simulates the situation, the risks, and the opportunities for action. (Ioannou et al. 2021) There are many practical experiments that shed light on learning results. Chaker, Binay, Gallot and Hoyek (2021) examined the user experience of the learners in a 3D interactive human anatomy tool. They found a correlation between students' anatomy grades and their ability to imagine a human movement without any real movement. Yiannoutsou, Johnson and Price (2021) studied mathematical experiences and the implementation of immersive VR in the classroom with visually impaired children with promising findings.

Kang, Diederich, Lindgren and Junokas (2021) focused on gesture patterns and learning in an embodied XR science simulation. The authors found trends in the use of the science simulations directly linked to students' struggles in understanding the underlying ideas or use of the system, as well as with their learning performance. Birt and Vasilevski (2021) experimented with immersive VR learning in the context of building information modelling (BIM) in architecture, engineering, and construction in collaborative and single user conditions and found that the learners' experience was better in the multiuser condition. The development of VR technology has also enabled the creation of the most comprehensive user interfaces, thus enhancing skill development, enabling remote access to training and, ultimately, improving patient safety in the field of medicine. (Mäkinen, Haavisto, Havola & Koivisto 2020). Sun, Wu and Cai (2019) investigated the performance of learners with different levels of spatial ability in a traditional learning environment that utilized presentation slides and a learning environment that incorporated VR and found that students' individual differences have effects on VR-based teaching. Low spatial ability learners had significantly reduced cognitive loads and improved learning performance in the VR-based learning environment. High spatial ability learners did not show significant differences of cognitive load in the presentation slides and VR-based learning environments, but they had lower learning performance in the VR-based environment. Today, the challenges of designing educational VR platforms to meet the expectations of educators relate to the level of immersion, high costs, time restrictions, and the design of the learning process (see Holly, Pirker, Resch, Brettschuh & Gütl 2021). To conclude, there is quite a lot of research on VR learning and teaching practises especially in the STEM disciplines in basic school and vocational education contexts but less in the contexts of leisure and event studies, creative industries, culture and art.

Aims

The aim of this study is to understand the VR teaching experience and abilities in the creative industries sector, namely cultural and event production. As the respondents were experts in a project that studies virtual event production, we may consider their

thinking only in this context. The study was delimited to questions concerning how teaching in VR is experienced, how the production of the learning content and environment is made and what the role of the partners is and what kind of support coaches find available for them. Virtual facilitation in a UAS today is not just teaching students. It is as also the coaching of projects, collaboration and partnerships. Coaching is a professional or student relationship that helps people produce good results according to their aims. This topic is important as student-driven authentic and simulated learning of practical professional competencies is the pedagogical aim in the UAS context. After all, the innovation competencies of the labour force have to be promoted already during the studies (Hero & Lindfors 2019).

Methods

This study is a case study of one EU funded project, namely the Vevent project. The project was a one-year preliminary development project that piloted virtual event production. The aim of the project was to boost the know-how of virtual event production. The material for this chapter was gathered with a small-scale interview study of the project staff. The staff had the opportunity to develop and try VR environments in their coaching. The interview material was collected in writing due to the pandemic situation, and the topic was further discussed in a joint workshop to deepen the material. Participants were the experts of the project, and worked only part-time on the project. N=7 were invited to the interview, n=5 participated. They were UAS lecturers and project experts by profession and their ages ranged from 27 to 51.

Findings

There is an interest and some experiments in VR teaching in the creative sector of Finnish UASs. Here I present the stories of the coaches to explore their experience, production and support while teaching in VR.

Coaching experience

The respondents have some experience in participating in VR learning events and coaching in VR already. They had VR headsets available, and they were eager to experiment in different platforms.

I have been teaching short sessions in Mozilla Hubs and AltSpace. I have an Oculus headset, but when teaching, I always use the desktop versions - I feel I have better control over the situation on the desktop. Another reason is that during my experimentations there has not been a single session where every student would succeed in accessing the 3D environment, because of a lack of equipment or skills (or motivation). So, I have the Zoom channel open all the time and share screen from the 3D platform to Zoom so that every student can at least see and hear what is happening. (Senior lecturer, Humak)

I have been a teacher in an international course, where a virtual platform was partly used (however, it was not the main subject, merely a platform for cooperation). I have also been involved in planning and implementation of R&D projects focused on VR topic. We have VR goggles, but I have not really used them in teaching. (Principal lecturer, SEAMK)

I have helped, facilitated and participated in project work in VR. I have a VR headset. (Expert, Metropolia)

I am at least interested in facilitating in virtual spaces and I already took some people around Vevent Worlds, it went just fine. But certainly, much more time would be needed and I also need continuous practice. (Principal lecturer, SEAMK)

All the respondents were quite excited about teaching in VR and felt that it was important, laborious, but interesting. However, students are not familiar with VR yet.

Compared to Zoom teaching it feels good, as I can stand up and use my whole body. However, it is very time consuming to set up slides in the VR world, and there is no opportunity to write on any boards. We have put videos and ready-made presentations and text in the VR world, and they are there ready for the students to watch. It feels nice, when my students walk together, comment on their avatar appearance and discuss the learnings of the teaching materials. (Senior lecturer, Metropolia UAS)

If the correct environment is selected, it does feel natural. But if tools are missing, it might be slower than Teams, for example. (Expert, Metropolia UAS)

I am quite excited about teaching in virtual spaces but I have noticed that many of my students are not. Although teachers have been working in VR for a while now and Finland is a technologically advanced country, VR is not a familiar environment to the students. But I will continue experimenting, one day it will be as easy for everyone to access VR environments as Zoom today.

It feels interesting and intriguing. However, the first time is always chaotic as you should be able to teach and give technical instructions or IT-support at the same time. For instance, in the above-mentioned international course, there were so many technical problems that we had to provide a "normal" Zoom-platform in addition to VR surroundings. Actually, then gradually all lessons and activities moved to Zoom, except some students went to VR for chatting and drinking coffee together. To be honest, I am not very involved in the bachelor degree teaching where the focus of event production is in our degree programme. I think there are many possibilities but the main challenge is to get all teachers on board and see these opportunities, instead of focusing on traditional/physical event productions. We certainly would need more training and also inspiration for these issues.

Exploring, showcasing, and presenting ideas or products in 3D in VR or AR feels very intuitive. For example, nothing beats exploring 3D models than being actually able to experience them in a virtual 3D space. Not to forget connecting with people, being able to actually meet and speak face to face with people remotely is a great possibility for the future of teaching. (Expert 2, Metropolia UAS)

Getting together in a virtual space certainly has its benefits when it comes to learning and teaching. As humans, we tend to be good learners when it comes to seeing and experiencing, and this is what VR can offer in the best way.

Production practices and partnerships

Production of a VR learning environment (in spatial web) is something the teachers had seen, but only one had participated in building yet:

> *I do understand the stages of production of virtual learning events but have not been involved in VR productions in-depth.* (Principal lecturer, SEAMK)

> *I have built with my students and XR designers a very large VR learning environment for teaching virtual event production. I have my own personal classroom, too, where I can meet one student at a time in a more private discussions like tutoring if the student wants. I have been teaching there several times now. Next fall, I will start a whole course in virtual reality. Students will participate either with VR googles or with computer browser. I have 2 pairs of VR goggles as I also help visitors and other teachers to start learning how to teach in VR. I can also loan them easily, as we have an XR center at our campus.* (Senior lecturer, Metropolia UAS)

Teachers partly understand the partnership and earning potential, costs, and good production practices of virtual learning events.

> *This includes so many aspects, but I have knowledge of business models, at least, which brings along all forms of cooperation and earning models. However, concerning learning events in VR – I have not been involved in productions of such. But if we talk about virtual events (not virtual reality) in general – I think all teachers nowadays understand good production practices for them.* (Principal lecturer, SEAMK)

> *I think I understand the partnership and earning potential, costs, and good production practices of virtual learning events as I have been doing a little bit of research on these. There is potential, but do I have time and money to implement?.. no..* (Senior lecturer, Metropolia UAS)

> *Yes, I have pretty good knowledge on these. VR/AR, streaming, live or pre-recorded, etc.* (Expert 1, Metropolia UAS)

> *I'm quite familiar with the limitations of virtual reality. I would still argue that there are more possibilities than boundaries. The biggest obstacles come within different collaboration platforms that might have their unique limitations to what you can offer. If I would create a learning environment off the top of my hat, I would create an environment learning app that teaches about creating atmospheres in 3D settings. When you experience the changes in mood and feel and how they affect your perception through simple changes of color, shapes or composition, experiencing this in a real environment would at least for me be a learning experience that would really make an impact on how I view those basic building blocks of environment design.* (Expert 2, Metropolia UAS)

Learning content production to VR

The respondents seem to have understood how to apply their own area of expertise in virtual spaces and the laws and boundary conditions there.

Certainly I would be able to bring matters like marketing and brand management to virtual reality and teach how VR can function as a "new" platform for them. This area will definitely grow in its importance, as all applications of Metaverse are increasing everywhere. (Senior lecturer, SEAMK)

I am able to apply my own area of expertise in virtual. I teach multidisciplinary innovation projects, and many solutions students consider are VR based. I also teach brand management, virtual worlds are great for brands: New environment, global reach, direct linking to web shops etc. In addition, I teach virtual event production, so I really need to take my student online and in VR. Authentic pedagogy happens in authentic learning environment. (Senior lecturer, Metropolia UAS)

Support for the coach

The respondents also felt that they have support from their educational organization and the local XR professionals.

I would call first XR Center in Helsinki 😊. Actually, we also have our own XR team at our university, we meet every week to discuss, chat and share information on various possibilities and projects. It is a multidisciplinary group of interested people (no official resources given, based only on one's own interest). When discussing with the technical experts, I have noticed that they might not know so much on commercial or user-oriented design, neither do I have in-depth technical knowledge. But gradually we are building such shared knowledge. I have connections at least locally with expert companies and developers as well. (Principal lecturer, SEAMK)

Helsinki XR center help me when ever I need. I have good networks in XR industry. I could teach other teachers as well. (Senior lecturer, Metropolia UAS)

There is a need for teacher training and IT support. Universities should offer several platforms and support technically in taking them into use.

I understand the current possibilities and technologies of virtual learning event production, but I would like to understand a lot more. I know that the surroundings can be built on ready made platforms like AltVR by buying 3D objects and modifying the platform. And when teaching e.g. design, you can bring your students in VR to design together and directly see the 3D model there. The Glue platform would be great for teaching as it has integrated Office tools like Word, Powerpoint etc, and whiteboards, possibility to draw, workshop with post-its, and great visual outdoor and indoor types of environments. But Glue costs and my uni is not buying the licence for me. I would also like to make and use a Rond platform, but that is expensive to tailor and build. My IT department told me to find out myself, clear the

GDPR issues and make a Data protection impact assessment. I do not get payed for these, not can I do them - I am a teacher not a IT guy afterall. (Senior lecturer, Metropolia UAS)

Yes I have a pretty good understanding of the potential, costs etc. However, on the live production side, done for streaming purposes for example, I could use some assistance. (Expert, Metropolia UAS)

Discussion and conclusions

Here I discuss the findings in relation to the previous literature and conclude with a practical implication and a suggestion for practical actions.

Teachers and coaches are eager to learn VR teaching, and they independently train, test and experiment in VR already now. They feel that their own expertise and teaching content is suitable for learning in virtual world and they know how to get the content there. However, our respondents were working with virtual event production; they most likely understood the constraints and delimitations, technologies and practises better than an average teacher in UAS.

As the challenges of designing educational VR platforms to meet the expectations of educators have related to the level of immersion, high costs, time restrictions, and the design of the learning process, (see Holly et al., 2021), we can argue that our study supports this notion partly. Our coaches felt that they had cost and time restrictions. They also mentioned the dependency of the student computers: there are no VR glasses and the students participate with computers. This is okay for some of the teachers for now, but as the education becomes more international, more dependent on the 3D models and spatial design, there will be a need for VR equipment. The ability to design the learning process in VR was still in its infancy. However, the respondents claimed that they were already aware of the limitations of VR platforms and they knew where to get help fast and easily.

There seems to be an immediate need to start educating the modern teachers in virtual teaching in spatial environments. As VR glasses are soon becoming a commodity, this is the right time. As a practical conclusion, it is possible to suggest a curriculum text that emphasizes the aims of a training module for VR teacher training in the higher professional education context.

The teacher understands the current possibilities and technologies of virtual learning event production. The teacher is able to apply his / her own teaching also taking into account the laws and boundary conditions of virtual reality. He/ she understands the partnership and earning potential, costs, and good production practices of virtual events. The teacher is able to network with expert companies in the XR industry and developers in the field. He / she is able to build working life collaboration and apply a virtual event platform in guidance. He/ she understands the stages of production and is able to organize virtual learning events. He/ she is able to facilitate in virtual and help the student to participate.

References

Birt, James & Vasilevski, Nikolche 2021. Comparison of single and multiuser immersive mobile virtual reality usability in construction education. Educational Technology & Society 24(2), 93-106.

Chaker, Rawad & Binay, Melanie & Gallot, Marion & Hoyek, Nady 2021. User experience of a 3D interactive human anatomy learning tool. Educational Technology & Society 24(2), 136-160.

Hawkins, Diana G. 1995. Virtual reality and passive simulators: the future of fun. In: Biocca F. & Levy M.R. (eds). Communication in the age of virtual reality. Lawrence Erlbaum, Hillsdale, pp 159–189.

Hero, Laura-Maija & Lindfors, Eila 2019. Students' learning experience in a multidisciplinary innovation project. Education + Training 61(4), 500-522. https://doi.org/10.1108/ET-06-2018-0138

Holly, Michael & Pirker, Johanna & Resch, Sebastian & Brettschuh, Sandra & Gütl, Christian 2021. Designing VR experiences – Expectations for teaching and Learning in VR. Educational Technology & Society, 24(2), 107-119.

Ioannou, Andri & Bhagat, Kaushal K. & Johnson-Glenberg, Mina C. 2021. Guest Editorial: Learning experience design: Embodiment, gesture, and interactivity in XR. Educational Technology & Society 24(2), 73–76.

Kang, Jina & Diederich, Morgan & Lindgren, Robb & Junokas, Michael 2021. Gesture patterns and learning in an embodied XR science simulation. Educational Technology & Society, 24(2), 77-92.

Mäkinen, Henna & Haavisto, Elina & Havola, Saara & Koivisto Jaana-Maija 2020. User experiences of virtual reality technologies for healthcare in learning: an integrative review. Behaviour & Information Technology, DOI: 10.1080/0144929X.2020.1788162

Sun, Rui & Wu, Yenchun J. & Cai, Qian 2019. The effect of a virtual reality learning environment on learners' spatial ability. Virtual Reality 23, 385–398. https://doi.org/10.1007/s10055-018-0355-2

Yiannoutsou, Nicoleta & Johnson, Rose & Price, Sara 2021. Non-visual virtual reality: Considerations for the pedagogical design of embodied mathematical experiences for visually impaired children. Educational Technology & Society, 24(2), 151-163.

PART 2.
TECHNICAL ASPECTS OF VIRTUAL EVENT PRODUCTIONS

CHAPTER 1.
VIRTUAL EVENT TECHNICAL REQUIREMENTS AND EQUIPMENT

Sander Mosel

Different options for different formats

Let's go through some popular virtual forms and what stuff you need for them and what to consider. But keep in mind that these are just my recommendations and the options are really plentiful. Feel free to experiment with different equipment, learn from your mistakes and find the best set for yourself, for your idea and for your production.

Competence develops through experience and experience cannot come if different alternatives are not tried. I have learned everything, almost exclusively, from my own mistakes and bold experiments. I strongly recommend stepping out of your comfort zone and taking the time to try out the different options. Do not take the following points as a rule, take them as recommendations.

Webinars

Let's start with this, because this is the most used virtual event form. What do you need to make a webinar? You need a studio or a room. And then you need a network connection. If possible, I recommend using the ADSL network connection because it is stable and safe. If you do not have the possibility to use it, then use mobile network connection from the router. 4G or 5G, it actually doesn't matter because usually webinars are not very heavy and for this reason the network connection does not have to be faster than normal. As long as it is stable, everything is good. By stability, I mean that the connection will not be lost or broken. It's unfortunate if your network connection is lost during a webinar. If you want to check your network connection, I suggest you go to the website fast.com and check it from there. Check the speed but also pay attention to upload

Image 1:
Technical setup for hybrid events (Mosel 2022).

speed and delay. At speeds, the higher the number, the better. The smaller the delay, the better. The basic readings, I would say, would be at least 150 for speed, 40 for upload speed and less than 10 for delay.

You need a camera as well. At this point, you decide what kind of image quality you want to aim for. Don't necessarily invest anything too high quality, for example 4k quality, because it may not even show to everyone. Traditional USB webcams are of sufficient quality and work well. However, aim for HD quality and check the FPS number. FPS stands for frames per second. I recommend using 60 FPS for smooth quality but 30 FPS cameras also work well. Then there are all-in-one broadcasting systems which I call camera towers. These are a great option for those who create and organize a lot of webinars. They are easy to set up and towers include a LED light and a microphone. Great for educational webinars for example. I use the Marantz broadcasting system myself.

Another option is to use an HDMI camera such as SLR camera, a digital SLR camera, PTZ or a traditional camcorder. But you need a video capture card for changing the HDMI signal to a webcam signal. I recommend using Atem mini -products or traditional video capture cards for changing the signal.

When producing webinars, HDMI camera setup with all its accessories might be a slightly more time-consuming option so I would stay with modern USB web cameras. It depends, of course, on the webinar but I would invest more in the sound than in the picture because, to be honest, that's usually more important.

A typical webinar microphone is a wired one and directly connected to the webinar computer. If you want to level up, check different podcast microphones because they often produce clearer and higher quality sound. Wireless microphones - such as those by Rode - are another option but I don't see the point in that, especially when the performer is sitting in front of a computer. Things should not be made too difficult. Sure, headphones are also one option, but whether it looks good on the camera is up to you. The webinar computer should be a modern one. This is because online broadcasts consume a lot of power and require internal memory. Be sure to turn off all other applications during a webinar, pause all updates, and make sure your laptop is plugged in. This reduces all risks that may affect the quality of the webinar broadcast.

Sometimes a clicker might also be needed so the slides of the presentation are easier to change - especially if the webinar lasts more than half a day it can be exhausting to click the small arrow key on your laptop.

Lights. If there is not enough natural light from windows, then simple LED panels can easily give you light and make the image look so much better. If the picture background is important to you, I would use a green screen as it will give a better trace of background removal.

Virtual events

Let's move on to bigger productions. Virtual events are a bit heavier to build because the setup is bigger with a big pile of equipment, wires and tools. For organizing a virtual event, we need:

A studio with good lightning. Studio is perhaps too big a definition for this, as I myself have built a virtual event in a regular office room many, many times. Good lighting saves even a bad office environment, so prepare with enough lights. Quite traditional LED panels with a stand, work really well in every situation, but if you have a professional studio in use, go for it.

Depending on your event, you also need **furniture and interior elements** to style up your studio for performers. Use neutral-coloured benches and make sure the image on the camera is symmetrical on both sides. If you are producing a virtual event with a virtual background, then you also need a bigger **green screen** behind the performers. Make sure the green screen extends to the floor and over the performers as well as to both sides. Leave plenty of space horizontally and vertically so that the performer's hand or head does not come out of the green screen under any circumstances. This is important and could ruin the whole experience. Be sure to light up the

Image 2:
Virtual event studio made in office (Mosel 2022).

green screen well without leaving any larger shadows anywhere because they look really strange in the broadcast.

You might need **a virtual studio** in some cases. If you are already using a green screen and the lighting is OK, then you simply need a virtual studio layout picture from the Internet or if you are a graphic artist then you can create your own. For example, in OBS, you need to cut yourself off from the green screen and place to virtual studio with its small settings in the appropriate place. Easy and impressive!

A powerful computer with a lot of power, memory, HDMI-input and many USB-inputs is also needed. if possible, use i7 processor computers. If not, then powerful i5 machines will also run almost the same thing. But don't settle for less, as computers can simply overheat and shut down under excessive strain or stress. The machine must be powerful as the virtual event broadcast is produced through many platforms and devices but mostly through only one computer.

Image 3:
Green screen studio.
(Mosel 2022).

So don't overload the machine and take good care of its cooling. Keep the room temperature cool, not too warm because it immediately affects the temperature and stress of the broadcasting device. You can even use a mechanical silent fan, to cool the entire equipment on the technical table.

HDMI cameras. As you can probably guess, it is not possible to capture larger virtual events with webcams. Even if the quality is good enough, the problem arises where more than one camera is needed. When more than one USB webcams cannot be added to or controlled using one computer, the option is to switch to HDMI cameras and to a specific control unit, for example. With a control unit, you can control, move and zoom many cameras and set different positions and sets.

Make sure that you have long HDMI cables, especially if you have more than one studio room in your virtual event and many, many cables for backup situations.

There are different options for an HDMi camera: basic SLR camera, digital SLR camera, PTZ robocamera, basic camcorder or some other kind of modern HDMI camera such as an action camera. All these cameras have their own pros and cons, but I myself have been very happy with digital SLR cameras and PTZ robo cameras.

Image 4:
HDMI AND USB
PTZ-cameras in
hybrid event (Mosel
2022).

Traditionally, vlogs and game streaming are filmed with a standard or digital SLR camera, music streams with professional camcorders, exercise events with either a robotic camera or camcorder, virtual events such as educational events and conferences with robotic cameras. Funny angles, such as from top to bottom, can be captured with small action cameras. This gives you a little hint of what camera is used in different situations.

Microphones. Almost all larger virtual events, where the distances between the camera and the performers are longer, use wireless microphones. In this case, the wires are not in the way and do not impede studio movement. Personally, I use a lot of Rode wireless microphones and sure, if the distance isn't terribly long, I've also used long Boya wired microphones for performers. It's a matter of what you like and what the possibilities are.

With **wireless microphones** it is necessary to check the battery status often and charge them for example during the coffee breaks, so it requires good concentration. Hybrid events also need **wired microphones** in the middle of the room to enable live attendees'questions and discussions to be audible to online attendees. These, of course, can be wireless as well.

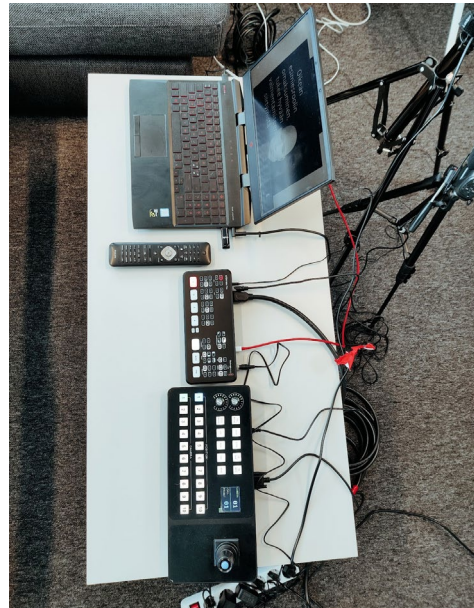**Image 5:** Wireless microphones and ZOOM H5 recorder (Mosel 2022).

Image 6: Atem mini and PTZ-camera controller (Mosel 2022).

Video capture card or Atem. This is needed for capturing a video picture to your computer. If you use Atem, you can connect many HDMI cameras into it and change the live picture to another camera. If you have a virtual event, for example, with more than one studio, then Atem is a must-have, because you often need to change the camera to another studio or room. With Atem, you can also make a backup recording straight to your computer. I would say that every virtual event needs a good video mixer and Atem is a good choice because of the price and because it already incorporates a video capture feature.

An **Audio mixer** is needed in cases where you have more microphones than cameras or more than two microphones (since Atem has only two microphone inputs). I usually suggest connecting all the microphones straight to the camera but sometimes there might be an issue that you have more microphones than cameras and then you have nowhere to connect them. Then you need an audio mixer. I recommend Rodecaster as a virtual event audio mixer.

A **prompter** is mostly needed to enable the presenter or performer to view the presentation, next slides, notes or online attendees' picture, chat or polls, because otherwise the performer has no idea of what's going on. A computer or an external screen can usually act as a prompter in front of the presenter.

Another **external screen** is needed for you, as a producer, to check all the live pictures from the cameras. The screen is monitoring all the pictures at the same time just to be sure what each camera picture looks like before going live. This is very important and that's why more expensive Atem models have HDMI-output. I would suggest using one more external screen or computer to check the live stream from the virtual event - just to check how everything looks for attendees.

Podcasts
A good podcast show usually requires a soundproofed studio or room, high-quality microphones, a computer and a soundtrack recording platform. And also, of course, audio cutting skills so you can cut and prepare your episode. A podcast doesn't even necessarily need an internet connection because they are usually recorded offline.

Webcasts and streams
Let's take a group exercise broadcast, for example. Usually these are also technically easy productions, because there's only a few things that you might need: a wireless microphone and a camcorder, SLR camera or PTZ robotic camera and a computer. High quality network connection is also needed but you don't necessarily need anything else, as you can direct the picture and sound directly to your computer, without any items or equipment between them.

Error situations and dangers

Maybe with this topic you can ask: what's the worst that can happen? In live broadcasts, lots can go wrong if things are not familiar or prepared - these are usually called fires in the middle of a broadcast. Then there are the errors that can hardly be affected in any way, so even if you're well prepared, some errors might still occur.

Let's go through a few.

No picture
In my early days, this happened many times. Mainly this happens because you're trying to connect a camera straight to your computer. As mentioned earlier, HDMI-cameras especially need a video capture card or Atem to enable your computer to receive the video signal. Without it, there's no picture.

Sometimes when everything looks right and you have the right equipment, the picture that your computer receives is black. I have faced this problem many times and I still face it sometimes. It always causes a little confusion, but the best solution for this is to simply switch to another HDMI cable. As strange as it may be, HDMI cables may just stop working suddenly and not all cameras will send a signal over all HDMI cables.

I recommend buying slightly more expensive HDMI cables with ethernet capability and, if your production goes more professional, I also recommend getting an HDMI cable tester. It allows you to test that the cable is in good condition and you have a better focus on fault situations.

And remember, do not buy HDMI cables that are too long. Like many audio, video, and data cables, HDMI cables can suffer at longer lengths —15 metres is generally considered the maximum reliable length.

Picture and sound delay

To be honest, this problem can be a pain in the ass sometimes. I also have events where I haven't managed to fix this in the middle of a broadcast. In testing, everything has looked good, but there has been a sudden delay in live broadcasting. There are few tips to lower the risk of delay. If possible, always connect your microphone straight to the camera. This means that the camera will send audio and picture at the same time through the HDMI cable. With this set up, I rarely have had any delay. The delay usually appears when audio and pictures are coming from different places, for example, if you have connected your microphones to an external audio mixer.

You can manually configure and adjust audio and video settings in OBS and Atem. In practice, if a delay occurs, you can also manually set or remove the image or sound delay.

Audio clipping

This error might occur - especially with Teams and Zoom - and it means that the platform you are using sets the volume automatically. In a live broadcast you may not understand what's going on when the audio suddenly becomes weird or really loud or it crackles. This is especially common in situations when you are showing a video with sound via Atem and an HDMI cable. If an automatically adjusted microphone volume -setting is on, Zoom or Teams does not understand that the external audio source may be a video and may automatically amplify any sound. It causes confusion if it does not suddenly hear a "normal microphone speaking sound".

To avoid this, put the default setting to off and keep the background noise setting on as well.

Echo and strange beeping

This might be confusing sometimes but usually there's a logical reason for this. If there's an echo or some equipment starts beeping, check that you do not have any speakers on in your computers. If any speaker is on and the computer is monitoring the same event you are producing, it causes confusion between the devices. So, shut down all the speakers and use headphones.

Network problems

This is a problem that you may not always be able to prepare for, but you should plan good backups for this. My tips for this are to always open broadcasts long before peak times (9AM, twelve o'clock and 4PM) and, if you're using a mobile router, have another router ready for backup situations.

Like I mentioned, I am using the dual sim card router which means that if network connection is lost, the other sim card will be activated and I don't need to make any physical changes. The network connection may recover by itself or may not even break at all but this is always situational. Try to avoid Wi-Fi connection and always use a wired one.

Computer updates

It is important to turn off computer updates before the broadcast. Updates may slow down your network connection and affect the current features of your computer such as power and memory. So, shut down all other applications and all automatic updates that are found on your machine.

Flickering

Flickering might occur if you're using a screen on your live broadcast and the camera films it, especially in situations when there is a screen behind the performer. This is because the FPS (frames per second) is different between your camera and the screen behind the performers.

Try changing the FPS to the same level on the camera and monitor by changing the image quality. If that doesn't work, try searching for and playing with the backlight setting in the camera settings or turning it off completely. There is usually an antiflicker setting in the camera menu under Exposure.

Building a virtual event from the start

Now that we have gone through all these factors, let's take a quick example. Let's say that you need to produce for your client:

- a virtual conference
- with two different looking studios in the same physical location
- one host
- panel discussion with three people in the studio
- 15 different speakers from around the world
- and 150 participants.

One of the studios is a fully virtual studio and the other is traditional with benches and interiors. How would you go and do it? What do we need to set up the broadcast for participants?

We need a large enough room or space where two studios can be built. One is set up with only a green screen with lights and the other is decorated with decorative elements - benches and so on - with lights. In this production, it was decided to have only one tech table, so the two spaces are almost side by side so that one tech table can control both studios. The traditional studio is built for the panel discussion and the virtual studio is built for the host.

I would use four PTZ robo cameras, two for each studio so then we get more than one angle of views from one studio. If they were available, I would use two professional camcorders instead of two robotic cameras but let's say that they are not in use now. So, four robo cameras with HDMI-cables coming straight to our ATEM video mixer in the tech table. In the green screen studio, we have only one presenter so we can connect the presenter's wireless microphone straight to one of the cameras.

We need a control unit for four cameras as well and we set ready different camera positions for both studios. For example, now when we have 4 persons in another studio and only two cameras, we need to set positions ready for each panel participant and for the host. So, when one camera is live, we can change the other camera's angle and positions as much as we want and it doesn't affect the live stream.

So, there are three panel discussion participants and one host. We have only two cameras there so the microphones cannot be placed directly in the camera. We need an audio mixer for the four (wireless or wired) microphones. Let's use Rodecaster pro as an audio mixer.

We also need one prompter for each studio, so two in total.

Beside an Atem, Rodecaster and a robocam control unit there is one broadcasting computer on the tech table capturing the pictures from Atem and sound from Rodecaster. The broadcast is made through OBS so we can add some small effects to the broadcast. For the virtual studio, we are still using OBS and some paid virtual background layouts to build a great virtual background for the host.

We need a good enough network connection and a virtual event platform. With more than 150 participants and 15 different speakers, some of them will be speaking at the same time on different virtual stages. I would go with Hopin as a platform; it's safe and we can create as many virtual stages and rooms for speakers and participants as we want.

We can also involve and engage participants with the different kinds of possibilities offered by Hopin.

Here were, perhaps, the most important points. I hope you stayed involved and kept up with me. Sure, there are many options, but this is the kind of plan that I would go with myself.

CHAPTER 2.
CREATING VIRTUAL EVENT VENUES

Oona Tikkaoja **|** Juhani Haarala

Virtual event venues can be easily personalized with 2D and 3D objects. It is possible to build one's own event venue from scratch or adapt ready-made spaces. The latter is an easy and fast way to bring in personalized elements without having to hire professionals. In this chapter, we will briefly introduce some content-making techniques which are easy to try out, and considerations for optimizing materials to ensure a smooth user experience. We also introduce the creation process of Vevent Nummirock as a case example of a project which included a professional team.

Today it is easy and cheap to produce 3D models which can be brought to virtual event spaces. There are various methods, which demand different amount of skill: for example, 3D modeling, photogrammetry, volumetric capture and painting objects in virtual reality. Although it is wise to utilize experts' skills when producing larger and/or more important events, it is important for producers to test out the techniques by themselves in order to get an idea of the working principles and possibilities. Sometimes a special object is required in the venue, which cannot be found in the model libraries. In that situation, it can be useful to know how to make a 3D model.

Personalizing virtual venues

I focus in this chapter on decorating one's virtual venue on AltSpace and Mozilla Hubs, because they are platforms which are economically accessible for everyone. Many 3D event venues provide access to Sketchfab, a website where one can upload 3D models or download models made by others. So regardless of the platform the 3D models can be accessed in a similar way. Also uploading one's own 2D images works in similar ways on various platforms, and the specific instructions can be found in the service's own handbooks.
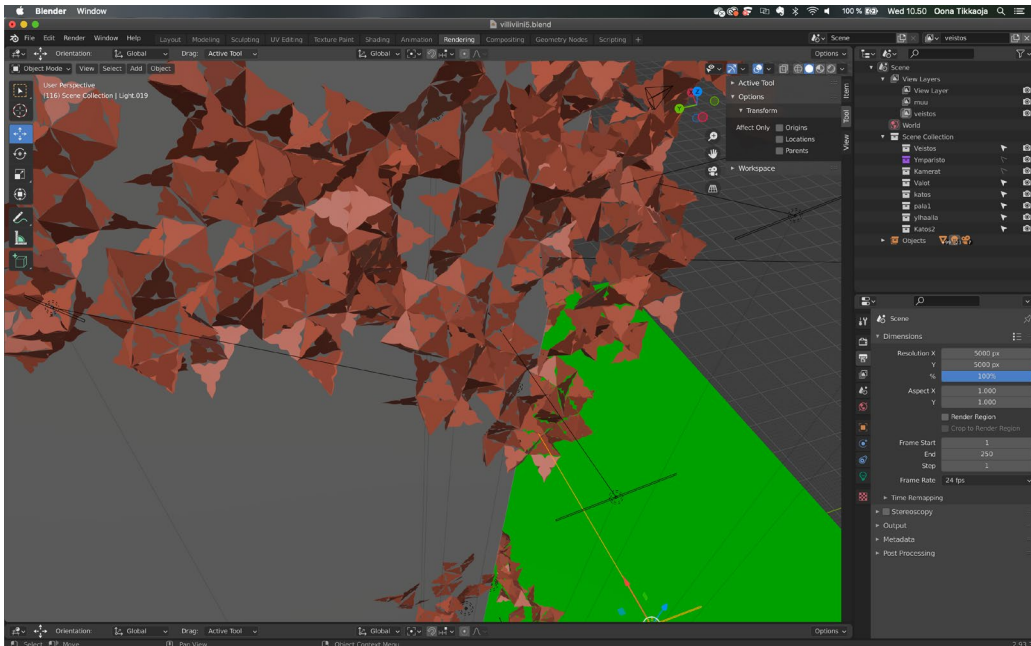
Image 1: Screenshot of a public sculpture project in Blender.

Because AltSpace and Mozilla Hubs are free of charge, they also have more limitations regarding the size of the world (in megabytes, not in square meters) and the number of concurrent participants, in order to provide a smooth experience with various devices and internet connections. The platforms which charge fees from their customers are able to host remarkably larger worlds and greater numbers of concurrent participants, so this is a problem which can be solved rather than something intrinsic to 3D platforms overall. Mozilla Hubs recommends running one's own hub on a private server if there are more than 50 participants attending (Mozilla 2022a). These limitations are important to understand when decorating the space: heavy worlds cause problems to users whose internet connection or equipment is slower. This naturally demands a balancing act: we want our spaces to look stunning, but at the same time cannot afford to risk the fluency of participant experience.

Making a 3D model

Modeling from scratch is the classic way of making 3D models. Modeling takes time and dedication to learn, and because of that it is not particularly useful as an event producer's tool. In any case, one of the professional 3D modeling tools, Blender, is open-source software run by an independent organization, the Blender Foundation (Blender 2022), and for that reason offered to users free of charge. This makes learning 3D modeling affordable for anyone interested. Blender can be used to optimize models made with different scanning techniques, and that might be a more realistic use for producers, too.
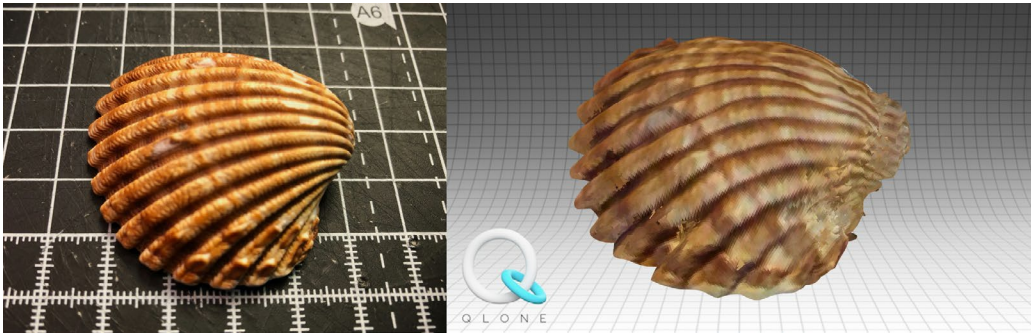
Image 2: The shell on the left has been turned into the 3D model on the right by scanning with Qlone application using an old iPhone 8. It was scanned as a casual test, and the lights and camera settings, for example, were not optimized. The quality could be much better with optimized equipment and environment. The idea was to test what quality of models it is possible to make without special arrangements.

Photogrammetry is a technology for making 3D objects which does not take long to master. The 3D object is created out of multiple 2D pictures. Many smartphones support applications which transform your phone into a 3D scanner. Polycam for iPhone, for instance, can be used on older phones via the camera, and in newer phones utilizes LiDAR technology. There are a variety of applications to try out, for instance Qlone, Scandy Pro or Trnio. Most of these offer users a free trial period or the opportunity to test with restricted features.

Drawing and painting 3D objects with a VR headset is an intuitive way to create 3D models. For example, an application called Tilt Brush is really easy to use. Drawings are created in three-dimensional space with the Oculus controllers, and it is surprisingly easy to draw a line exactly on the desired location in 3D space. The models can be uploaded to Sketchfab, where they are available for use in various virtual event platforms.

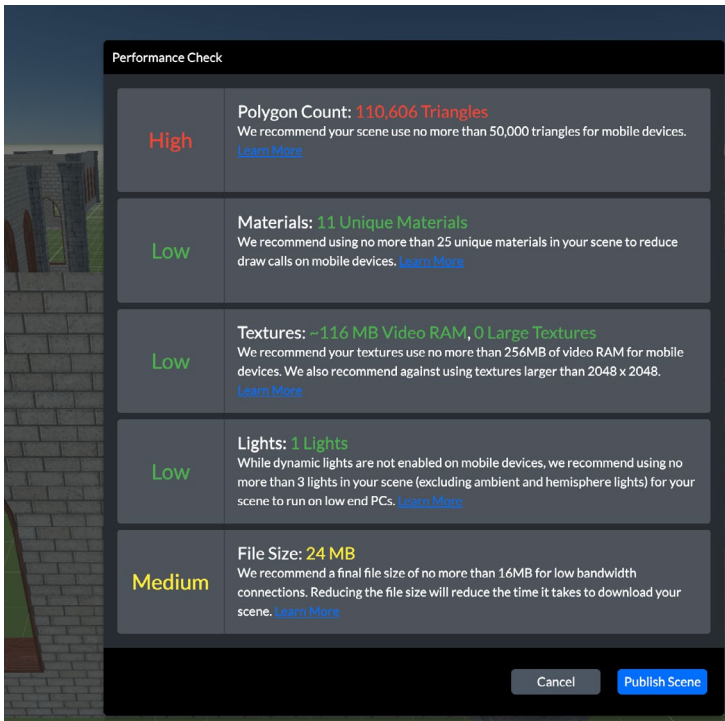**Image 3:** A flower sketch drawn in TiltBrush.

Image 4:
The performance check of a world created in the Mozilla Hubs Spoke editor.

Models made on TiltBrush can become quite large in size, so it can be good idea to take them to Blender for optimization before publishing.

Volumetric images and video are also available for consumers. This can be used to bring a performer to the virtual venue as a three-dimensional video character. Instead of combining multiple photographs to make a 3D object, volumetric capture creates a model based on the depth data of the scanned object. For example, Depthkit offers volumetric video software which can use the Azure Kinect depth sensor as a camera. (Depthkit 2022)

Optimizing images and 3D models for virtual venues

Before uploading images or videos into your event venue, ensure that the original files are not larger than needed in their location in the world. For example, reduce the dimensions to meet the actual size used in the world and check out the resolution of the images and file types (Mozilla 2022b). With 3D models, the file size grows if the textures are large, or the object has a large number of polygons (Mozilla 2022b). In this chapter, I do not give specific instructions on how to do this - it is enough to be aware of the demands of optimization.

Virtual set design

In addition to decorating 3D event spaces, computer-created virtual sets can also be utilized to replace physical sets in any event production in which the user participates via a display. Starhop, a company specializing in the creation of immersive and audiovisual experience spaces writes on their web pages: "Virtual sets are highly scalable, offering a variety of artistic and technical solutions for different projects. With a virtual set, any visual style is possible – from expressive to realistic. Real-time virtual sets allow you to engage diverse audiences in a creative and memorable way." (Starhop 2022). Since all materials in a virtual set have been created virtually on a computer, rather than in real life from real materials, they are editable, scalable and repeatable. You can change colors, create copies and add features – depending on your skills and software – quite cheaply compared to real life sets. Virtual sets can be used on any video project and implemented live or in post-production. Live implementation requires more preproduction.

In virtual set productions only a small part of the set needs to be physically built. Virtual sets can be built in various computer programs, mostly in 3D software. Virtual sets are not just for backgrounds. Instead, they can consist of a whole space. The space can be literally anything: realistic or non-realistic, an opera house, the Grand Canyon or somewhere like Moomin Valley. Sets can also transform in real time.

Vevent Case:

Making of the Nummirock Virtual Environment

Juhani Haarala

Finnish music festival Nummirock jumped into the virtual reality scene in the summer of 2021. In addition to their live stream, it was possible to attend the event in Altspace. The Altspace environment and the virtual event taking place there were made possible by Vevent.

Unity game engine. Unity is a free to use game engine (for small business). You can build games and apps in it. In Unity, you can also build Altspace worlds. Antti Kuusisto and Olli Korpi created the Altspace world for Nummirock. Most of the content in the Nummirock world comes from the Unity asset store. In the asset store, you can find free stuff, and a lot of it. If you want some quality or variation, however, you have to pay for it. We paid less than 10€ for all the assets in the Nummirock world: trees, a viking boat, a statue, campfire, logs, fences etc. Some of the content was modeled by Olli Korpi and Antti Kuusisto, elements in the ground and some editing in the cabin. Textures, fires and smoke effects were built in the Unity game engine. In the game engine, we added some sound effects. If you go near water, you hear the sounds of a rainstorm.

Modeling in Blender. I modeled the main stage and the Nummirock logo in the sky with Blender software. Blender is an open-source program. It is fairly easy to use and perfectly suits low poly modeling for Altspace. Why so? And what is low a polygon 3D

model? Low polygon 3d models are like low resolution images but in 3D. Polygon is a basic element of a 3D model a plane. Every 3D model is made of at least one these planes that is represented in a 3D space. Low polygon models consist of a small number of polygons, usually as few as possible. Low polygon models are required in the Altspace world to make it lightweight for better performance. In our stage, for example, the pipes in the supporting pillars consisted of only five polygons.

The virtual Nummirock event in Altspace. Nummirock is a midsummer day festival. A Virtual festival was also held at the same time in Altspace. Due to the pandemic, it was not possible to attend the live festival at the actual venue. Audiences came only via YouTube stream and Altspace. In Altspace, visitors had a chance to meet other visitors and watch a YouTube stream together. The event was open on the Altspace platform all weekend from Thursday to Sunday. We held meetings there on each of those days at 5pm. We did meet some people there. A few people came to speak to us and asked about the event and we had a chance to tell them. Feedback was very positive and encouraging. In the future, this way of attending festivals may become more common and more widely used. This time, the visitors came there mainly accidentally. In future, there could be some activities. We discussed potential future monetization of the virtual reality with festival organizers. One idea was to offer meetings with the artists in the virtual reality. Other ideas were advertisements from sponsors and activities and games created with sponsors. You can find more thoughts on the Nummirock virtual event by Tero Viertola on the Vevent webpage. Tero is the event head manager of Nummirock.

TASK

Install a photogrammetry application on your phone or tablet and test it out by scanning a small object. Borrow a friend's phone if your own is not suitable! Add the object to a Mozilla Hubs room in the Spoke editor. You have created your first unique virtual space!

References

Blender 2022. The Freedom to Create. Retrieved 1.3.2022. https://www.blender.org/about/

Depthkit 2022. Depthkit Core. Your Powerful Gateway to Volumetric Filmmaking. Retrieved 1.3.2022. https://www.depthkit.tv/depthkit-core

Mozilla 2022a. Introduction to Hubs Cloud. Retrieved 1.3.2022. https://hubs.mozilla.com/docs/hubs-cloud-intro.html

Mozilla 2022b. Optimizing Scenes. Retrieved 1.3.2022. https://hubs.mozilla.com/docs/spoke-optimization.html

Starhop 2022. www.starhop.fi. Retrieved 9.3.2022.

CHAPTER 3.
VR EVENT PRODUCTION PROCESS: TOWARDS AN EVENT METAVERSE

Laura-Maija Hero

Since the beginning of 2020, many of us have become familiar with attending online events, which we have come to call "virtual events." This is, of course, a different use of the word "virtual" from the sense used in "virtual reality." When people in the industry speak of "virtual events," they are mostly referring to 2D video live stream broadcasts — not fully immersive VR experiences. However, VR events are already possible today at relatively low cost as there are free platforms to build on. In Vevent, we piloted the production process of a VR event venue. This was the pilot project of Metropolia University of Applied Sciences. The aim was to understand how an organization (museum, university, hobby club, association, festival etc.) could build their own virtual world on a low budget, what kind of network is needed and what phases the production process would have and if there were any monetization opportunities. In this chapter, I try to shed some light on the event venue production process and give you a tool to plan your own crowdsourced co-design process. Watch a video and visit the Vevent Worlds with us!.

The metaverse: challenge and opportunity
for the event venue producers

Today, virtual event venues are becoming more versatile. A streaming in YouTube may soon not be called an event anymore. According to Boswijk, Thijssen and Peelen (already in 2007), event production is more than producing individual moments of experiences for participants. It has grown from the simple presentation of designed experiences to consumers (experience 1.0) to encompass the co-creation of experiences between producers and consumers (2.0) and, more recently, the growth of networks or communities linking producers and consumers around experiences (3.0). According to Getz and Page (2016), the essence of a planned event is that of an experience that has been designed regardless of who produced it. In the Vevent project, we decided to use an attendee driven production method and engaged the future attendees in the virtual event production.

Virtual worlds as event venues are opening up new realms for event experiences and community engagement. Even some eager hobbyists are building their own 3D virtual worlds for their events and community meetups. The virtualization of the event offering represents a true pivot opportunity for the whole event industry. Suddenly, audiences do not have to travel, their total event attendance costs come down and they are offered a global experience. However, the core of the whole industry is the production: how can we develop great event platforms with reasonable costs and time? Are experiences relying too much on the novelty factor, how can we guarantee that the audiences come back? The opportunities are basically endless, but still very limited from the technical point of view.
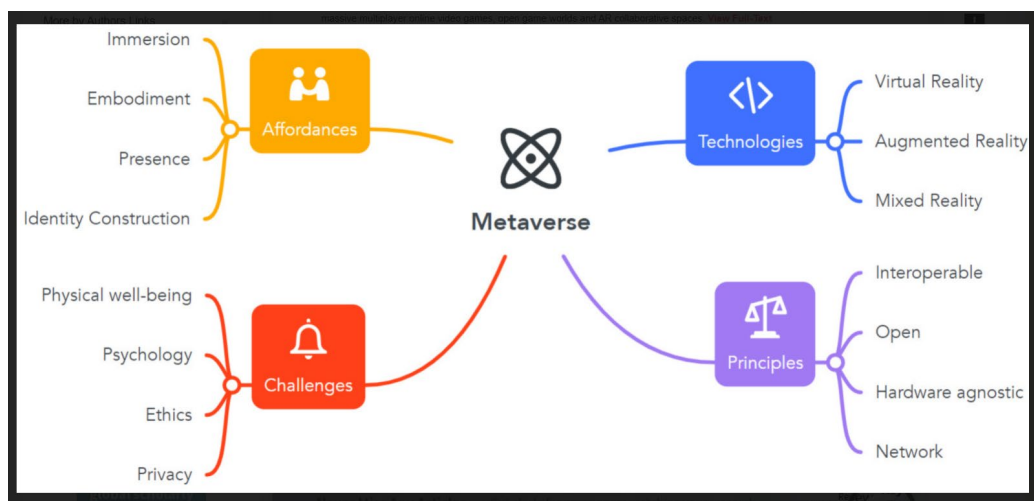

Image 1: The Metaverse is the post-reality universe, a perpetual and persistent multiuser environment merging physical reality with digital virtuality (Mystakidis 2022).

From a practical perspective, the metaverse is a collection of virtual venues where people can meet, perform, play games, hold meetings, buy services and products and much more. These networks of social virtual realities are interoperable networks of immersive venues where people may a) interact, socialize, play, learn, work; b) attend activities, concerts or meetups; c) build their own spaces and organize gatherings; d) create and use avatars expressing their creative desires and/or e) create, share, and monetize content regardless of geographical distance or other physical limitations. The key enablers are 5G, cloud computing, wireless AR/VR headsets, artificial intelligence, blockchain and NFT technologies (Helsinki XR Center 2022). The term "metaverse" was first coined by Neal Stephenson in his science-fiction novel Snow Crash, published in 1992. In short, a metaverse is a network of 3D virtual worlds focused on social connection. The term is often described as an iteration of the Internet as a universal virtual world that is facilitated by the use of virtual and augmented reality headsets. The term got a boost when Facebook launched Horizon, a VR massive-multiplayer world. Interest in the metaverse has also been boosted by recent advancement in VR headsets. (EventMB Studio 2022.) Prices are coming down and soon all gamers will have a VR headset as they come with Xboxes and Play stations, and prices for stand-alone VR glasses like Oculus Quest 2 are falling. In addition, the impact of the pandemic has been huge. It has offered a leap for all producers in virtual event industry as it forced us all to learn and engage in virtual spaces.

Yesterday, the metaverse was mostly occupied by gamers on gaming community platforms where gamers could socialize and enjoy various kinds of entertainment. Today, the event industry is getting closer with their virtual platforms that can be cross-connected to these gaming and entertainment, even business universes. The virtual event industry is rapidly learning and taking up virtual reality and 3D virtual venues. The metaverse has become more accessible to consumers of all sorts, as the most recognized brands – such as Meta (Facebook Horizon) in the entertainment and community industries and Microsoft (Microsoft Mesh, as integrated in Teams) in business – begin to offer accessibility. Online gaming communities teach us virtual event producers about the opportunities for venue-building in the metaverse and about community feel (see EventMB Studio 2022). Applications such as Fortnite, Animal Crossing, Roblox and Minecraft already know how to engage the audience, build community, and monetize by integrating in-game type offers, sales and exchange of virtual goods by users, not to mention the vast commercial networks bringing in their offers and new types of global audiences for culture and art as well.

Gaming does not interest everyone. The virtual cultural events held during the pandemic showcase the opportunities today. The international cultural event SXSW online XR 2021, for instance, which included a conference, exhibitions and festivals, was built by six producers in less than three months on a ready-made VR platform. Using the VRchat platform, the event included game-like surprises for attendees, who immersed themselves in VR activities. In spring 2020, US rapper Travis Scott performed a live show inside the game Fortnite, with his virtual performance attracting 12.3 million live viewers. The concert demonstrated the opportunities for creativity that come with hosting events in the virtual space today. The Fortnite Island was the stage, with Travis' digitized avatar teleporting to different parts of the island. Gamers had dancing options for their

avatars and were able to run across the water to get closer to the giant virtual replica of the artist (EventMB Studio 2022). Cultural managers and digital artists are riding the wave.

Now that even a cultural management department in Metropolia University for Applied Sciences has built its own multiple VR world metaverse, Vevent Worlds, it is time to ensure the retention of the audiences. As the large metaverse-type of connected entity with four worlds and possibility to enter from one of the most connected virtual worlds VR Pavilion Finland, there is certainly an opportunity. Vevent Worlds is a 3D virtual event venue accessible with VR glasses and computer browser comprising four large environments for hosting events and for teaching and learning virtual event production. The Vevent Worlds was designed by students from different disciplines based on service design (see Miettinen, Valtonen & Markusela 2014) and a facilitated innovation process and built in less than three months using the free AltspaceVR platform as a base. To get to the Vevent Worlds, download the free application and use an event code to find the Vevent Worlds. (see instructions in Appendix 1.)

The VR venue production process

The VR venue production process was rather smooth, but still a facilitated collaborative learning process like any innovation journey.

Phase 1 Crowdsourcing great ideas. Inviting 18 young innovators from different fields. Involving an external company network.

Phase 2 Technology selection. Choosing, concepting, testing the ideas, planning their implementation

Phase 3 Building the world's first prototypes. Hiring 4 XR designers. Feedback rounds and development.

Phase 4 Launch of the VR venue. External communications.

Phase 5 First smaller events. Studying the event experience. Inviting premium users, training them.

Some of the tools used in the production process included:

For choosing ideas, we used Shark Tank coached assessment of solution pitches.

For developing the user journeys in the worlds, we used Service Blueprinting and User Journey Mapping.

For ensuring constant learning of the innovators, we used Learning Diaries.

We introduced Business Model Canvas for business opportunity discovery.

For experience prototyping we used Observational Journals (see e.g. Design methods for developing services 2021).

Vevent Worlds was made according to a crowdsourced service design model. The idea work was opened to the potential producers who would then use the event venue for their events later. In practice, we facilitated a seven-week multidisciplinary innovation process with 18 students, 4 XR designers to build it in three weeks. When the draft visuals and functions had been designed by the students, the XR designer built the premises. The XR designer who designed the Nature surroundings described the process:

> *I started creating the worlds, first in Unity as a game engine which has a special plug for Altspace. I created the environment there by using ready assets from Unity asset store and also modeled some of my assets in Autodesk 3ds max. I also used audios and lights. Then I uploaded the environment to AltspaceVR. To do that, I first had to create a world and a template in AltspaceVR and then the uploading happens there. In the next step, I used AltspaceVR assets and possibilities in creating live projections and buttons and teleport and all the added games.* (Parinaz Mohammadi, XR designer)

Finally, the event content – learning materials for virtual event production – was developed by the teachers and companies.

Let's visit the Vevent Worlds!

Let me walk you through the Vevent Worlds in pictures and highlight some facts about the event venue production on the AltspaceVR platform.

Image 1: The Innovation Plaza is the main square of the VW. When you enter the Worlds, you end up here, and when you want to visit the other spaces (Nature, Backstage and Cloud Castles) you will need to find the teleportation places. You always have to come back here when you visit the other places. We have implemented one large size presentation video, one audio file where you can listen to some content, as well as some content on the digital displays. It is very important to guide people around! You will need to offer the short buttons for people to understand how they move around, teleport, grab and let go of the objects. You will need to carefully guide the way: People get easily lost!

Image 2: Partners and sponsors deserve a place that they can use for their meetings, and where the visitors may be able to jump right into partners' services via links. The commercial side of the event can be placed in limited spaces, but still offering experiential interactions with the brands.

Image 3: It is possible to facilitate "Aristotelian walks" where visitors can discuss aloud and wander together in pairs. Picnic places, more casual, quiet corners are needed for teams and families, or concert audience groups of friends to meet.
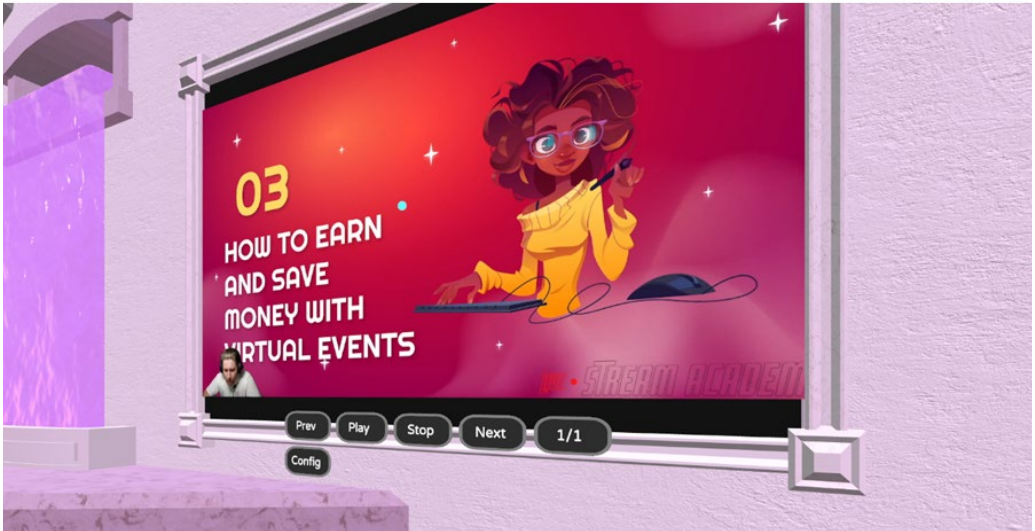
Image 4: Performances and art content has to be in video format or live streams broadcast from cloud services. Presentations have to be in cloud services like Onedrive. Only avatars can perform "live", but this may deliver a poor experience as the sounds may be affected.

The spaces can be further modified to allow for a unique appearance in each event. However, all changes have to be made in the game engine and 3D modelled, and the costs may be several hundreds, even thousands, and take some weeks. They are still feasible, as the AltspaceVR platform itself is free for the owner of the Vevent Worlds.

As in every event venue development, there are pros and cons that mainly relate to the platform.

Table 1: Pros and cons of building a virtual event venue accessible with browser and VR glasses on the AltspaceVR platform.

| +	-
More "realistic" feel in collaboration	Not easily modifiable
Avatar can give a new identity	Access: .exe has to be downloaded by the audience as well
Meeting, discussing, audience engagement	Large data files slow down
Discover, search, play	Only one video per room is feasible in pratice
Varied spaces, atmospheres, experiences	Technical facilitators are needed
Integration to web shops possible, but only links	
Free, usable with browser & VR goggles	
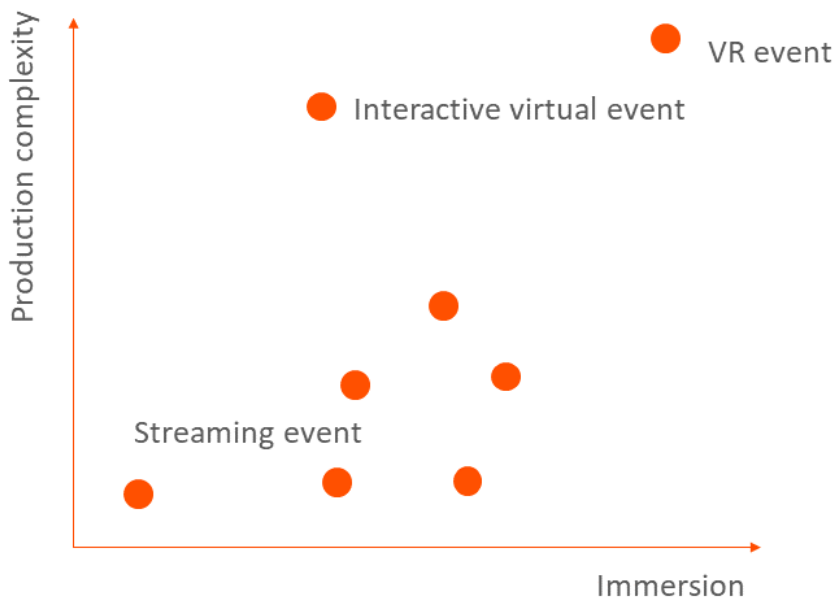
Figure 1: Production complexity grows as you aim at more immersion in the visitor experience.

Based on our experience in piloting VR event production, we can conclude that the more immersion wanted, the more complex the production is (Figure 1). The costs may not be exponential, as there are ways to crowdsource and co-design. However, this type of collaboration is always based on joint benefits and the cooperation will always be based on the interests of each beneficiary party.

The opportunities of the virtual economy

The monetization of virtual events is in its early phases. Not all the opportunities are used today. The commercial potential is huge, however. In the Vevent project, we got a hint of what is soon to become the marketing potential and the revenue opportunities of a totally new type of economy. In Vevent, we were able to pilot the negotiations of VR event platform collaborations. We pilot negotiated with Zoan, Arrange and FlyAR for in-event collaborations and put their service links to the Cloud Castles in VW. The idea was that when learning about virtual event production, you could find a production partner in the Partner Galleries of Cloud Castles and just press a floating button for full service. This was quite an easy negotiation as no money was involved, just joint benefits of visibility. In return, we gained some lectures that we could video and present on the screens and for our webinars.

We now understand that "The virtual economy" is made up of any trade that involves digital products or currencies - we could not apply any sales in the spaces within this short production time. In the near future, we may be able to implement non-fungible tokens (NFTs), cryptocurrencies, for selling land in our virtual reality spaces and sell NFT objects like unique art or some equipment usable in the spaces. We could rent some event spaces with cryptocurrencies or sell clothes, dance moves, tools and equipment,

real estate, and more for our digital avatars. Ralph Lauren and Levi's have already made some moves into this business by creating a fashion line for Bitmojis (EventMB Studio 2022; Helsinki XR Center 2022). We could also call the Vevent Worlds a DAO (Digital autonomous organization) if we totally opened its development for anybody interested and started a virtual economy. In the coming years, we should learn from DAOs about independence, monetization, open collaboration and virtual art production. Decentraland, for example, an ethereum blockchain powered virtual world, is developed and owned by its users who can create, experience and monetize content and applications.

TASK

Visit all four worlds in Vevent Worlds. The instructions are available in Appendix 1. Answer the questions below by reflecting on you visit.

Name, title, company/ university, age:

How would you use Vevent Worlds in your own work / future work? How much would you be willing to pay for rent for one day?

Plan an event at Vevent Worlds, for example, for your own workplace or hobbies.

Target

Audience / participants

Program and duration

Budget

Revenue. List different ways to earn money from your event.

Audience involvement and facilitation

How should the spaces be edited?

References

Boswijk, Albert & Thijssen, Thomas & Peelen, E. 2007. The experience economy: A new perspective, Amsterdam: Pearson Education.

Design methods for developing services 2021. Retrieved 2.9.2021. https://www.design-council.org.uk/sites/default/files/asset/document/Design%20methods%20for%20developing%20services.pdf

EventMB Studio 2022. Meet me at the Metaverse. Exploring the future of immersive event experiences. Retrieved 1.3.2022. https://www.eventmanagerblog.com/meet-me-at-the-metaverse

Getz, Donald & Page, Stephen 2016. Event studies: Theory, research and policy for planned events. Abingdon-on-Thames: Routledge.

Helsinki XR Center 2022. Helsinki XR Center: Home of extended realities. Unpublished presentation material.

Miettinen, Satu & Valtonen, Anu & Markusela, Vesa 2014. Service design methods in event design. In G. Richards, L. Marques, & K. Mein (Eds.), Event design: Social perspectives and practices (pp. 41–52). Routledge.

Mystakidis, Stylianos 2022. Metaverse. Encyclopedia 2(1), 486-497. Retrieved 1.3.2022. https://doi.org/10.3390/encyclopedia2010031

PART 3.
ECONOMICS OF
VIRTUAL EVENT
PRODUCTIONS

TOOLBOX 6.
HOW TO EARN AND SAVE MONEY WITH VIRTUAL EVENTS

Sander Mosel

Where to save money

Now we go through some situations where virtual events could save you money as an event organizer. As mentioned earlier, a virtual event is a smart alternative to a physical event. At its best, it offers more opportunities to participants and, at its best, it can make a lot of financial sense.

As with a traditional event, it's worth focusing on the costs and it's not a good idea to produce a virtual event quickly. It's still worth focusing on the idea, the goals, the look, the innovations, and these may not be free, either.

At its best, you can make a virtual event without any additional cost, as your organization probably already has Teams or Zoom, for example. On the other hand, is that exactly what the participants expect? I would say that there must always be some kind of a wow effect, in a physical event or a virtual event.

Here are some of the key costs that will save you money when producing a virtual event. Venues. The venue is nearly always one of the most expensive aspects of a physical event. The venue fee often consists of daily pricing, booking fee, electricity, insurance and water. You are not paying for a venue if you want to produce your event virtually. You may produce it from anywhere, and guests can join from wherever they are.

The visual look of the event. A big expense in physical events is also the visual look, decor, goods, equipment, exhibitor and partner booths, permits and licenses, furniture - everything you don't need in virtual events - at least on such a scale or even at all.

Security. Depending on your physical event, security costs are also a significant sum that you are not paying when putting together a virtual production. Network security is always the responsibility of the platform, so security is also guaranteed in virtual productions.

Catering. You'll also need a big budget for catering in physical events. That fee includes everything from food and drinks to dishes, catering staff costs, transportation, cleaning, equipment and so much more. In virtual events, all of this is handled by the virtual event participants by themselves in their homes or offices or wherever they are.

Travel, flights and hotels. Before I even talk about expenses and costs, as an organizer you can sigh with relief, because these three are possibly one of the most stressful aspects of traditional events. When generating a virtual event, you are no longer responsible for arranging transportation, flights or hotel bookings, flight changes, cancellations, hotel room transfers, visas, suitcases, or taxi rides.

Virtuality offers the great advantage of connecting all people together at once no matter where they are. This leads to significant cost savings when it comes to travel, trips, transportation, hotels, and rental spaces.

Speakers. The advantage of virtual events is that you can practically get anyone to talk to your event, as you no longer have to worry whether the physical trip fits a busy speaker's schedule. A 15–30-minute slot may be found in any speaker's schedule during the day.

Virtual events eliminate the need for speakers to spend valuable time traveling and this directly affects the speaker fee for most speakers. This also allows the speakers to participate in many different virtual events during the day.

Time. Perhaps the most important goal of saving is that virtual productions save you time. And as the saying goes, time is money, so this is one of the most significant savings even if it doesn't show up in your event budget.

Ways to earn with virtual events

From the organizer's perspective, whether there are more earning opportunities in a virtual event than in a physical event is hard to say because it can be a little tricky to compare, due to your own innovations. I've put together good examples of how you can make money with your virtual event.

Ticket sale. As with a traditional event, the biggest return comes from ticket sales. It is the organizer's own decision whether to keep the prices similar to the physical event, but since the virtual event has so much potential to give more, I would recommend at least keeping the prices the same.

Of course, if the event is produced on easy platforms like Teams and Zoom, keep the price aspect in mind from the customer's perspective: what do they get from the event? Do they get the same as from the physical event? Have the lunch and coffee breaks been replaced with something else? Is networking organized? and so on.

Partners, sponsors and exhibitors. In addition to ticket sales, partner and sponsor collaboration sales with exhibitors will also become a big return on virtual events, as long as they can be offered almost the same visibility as in a traditional event and this is where you need to think carefully about the event platform. What kind of visibility can be offered through the platform and how valuable is it?

Speech opportunities, case presentations, ad sales, videos and logo visibility remain the biggest opportunities for visibility. This is largely behind the platform offering and your own innovations.

Many modern platforms nowadays offer great visibility for exhibitors. It is possible to create different exhibitor areas with expo booths which is practically the same thing as in physical events. Exhibitors can show presentations, have 1-2-1 conversations with participants, offer discounts and direct links, give product demos and even provide direct payment options.

Exhibition areas can be even bigger than in a traditional event, so this is a great opportunity for cash flow as well.

Advertising sales. This is a great way to earn a little extra money in virtual events as well. In addition to traditional means of advertising, there are more possibilities for offering visibility: providers for different sections, for example, 1-2-1 area sponsors, virtual stage or virtual room sponsors or logo visibility in different parts of the platform. These may be similar to physical events, but a lot depends on your innovation in offering interesting ways to be visible.

"Sidenotes" instead of keynotes. As we discussed in the previous topic, speaker opportunities are much better than in physical events, mostly because you can have far more speakers at your virtual event, both because of the short speaking slots - which do not require time or travel preparations from the speaker - and because you can make different virtual stages for different agendas.

This means that you can make your event and agenda more interesting and inviting. You can sell more short speaking slots for companies and organizations or to the private sector who just want to convey their own innovations, products, case examples or presentations. If you price it well, then there will certainly be a lot of potential customers.

Additional sales: recordings and presentation material. Here, too, your own innovation is an important part of revenue. In addition to participant registration, there is a great opportunity to make additional sales, and there are many opportunities for additional sales in virtual events as well.

To mention a few: event recordings, presentation materials, access to different sections like stages with different agendas, 1-2-1 meetings, roundtables, workshops or why not physical products delivered to participants' homes?

Sale of "virtual lunch". As we wrote about in a previous topic, not having the possibility to serve food and drinks in virtual events is a significant difference compared to traditional events but some good solutions have been invented for this nowadays.
Since home food delivery has become very common lately, why not combine it with a virtual event. As a result, participants will also be included in food and beverage service, for example, during lunch. You can distribute a free food delivery code to participants with a good margin.

This might, of course, require a partnership with a food delivery company to get the price pumped down and offering great visibility possibilities for them. But it could definitely be a good addition to your event. This process can also be automated, so you don't have to send the discount codes by yourself.

Virtual purchases during the virtual event. Depending on the event platform, there may be a payment option for participants during the event. In other words, there is a great opportunity for additional sales as well lotteries, competitions, access rights, tickets to the next event or to a virtual afterparty for example. The sky is the limit.

CHAPTER 1.

THE COSTS OF CREATING VIRTUAL EVENT EXPERIENCES

Richard Silin **|** Benny Majabacka

As there are different types of virtual events, there are also different types of costs connected to virtual event production. To give a specific frame or model of all costs connected to any virtual event is therefore challenging. The objective of this chapter is to give a perspective on the cost structure of creating virtual event experiences, by examining the cost structures of the four Vevent pilots conducted as part of the Vevent project. The pilots comprise both 3D platform vevents and non-platform bounded vevents. (Vevent 2022)

Event planning and management compresses several phases and steps. There are different kinds of models and framework for the production process of a physical (live) event. E.g. 1) planning phase 2) realisation 3) post event or the Dowson and Bassett Event Planning model; Phase 1: Preparation, Phase 2: Detailed Planning and Phase 3: Post event. Regardless of which framework or model one uses, the production process for a physical event, in a pre-pandemic world, would usually consist of the same phases and steps. (e.g. Vallo & Häyrinen 2010, 147 and Dowson & Basset 2018)

The production process for virtual events varies however, depending on the virtual event's format and type. This is also something that became clear in the work with the four Vevent pilots. The costs of creating a virtual event experience are strongly connected to format, type and platform. The organiser needs different kind of skills and knowledge depending on the type and format of the virtual event, as well as on the platform to be used. You can't always master everything yourself, at this point there is expertise available for most formats of virtual events. This expertise is also a possible cost, which

one needs to take into consideration. 3D modelling is for example something that usually requires external expertise and help. Based on the work with the four pilots, 3D modelling can be a big expense.

A virtual event sets certain requirements on the organiser, since there are several areas that need to be addressed in the production process. These are concept planning and design, content planning, content design, technical planning, technical realisation, production and project management, facilities depending on the format and marketing and promotion. You also need to consider what kind of equipment the audience will use or need to use, in order to take part in your virtual event, in order to identify the possible demands they may make of you as the organiser. Good bandwidth, for example, should ensure a pleasurable experience without lagging. All sorts of equipment and/or technical solutions are also possible costs for the organiser.

In this chapter we do not strive to make a comprehensive list of every possible cost affiliated to any virtual event and its production process, since it would be impossible. Every virtual event is different and unique. This kind of a list could be miles long and would still not include every possible cost for all possible virtual events. Therefore, we examine the costs for four virtual events, Vevent pilots, that were created as part of the Vevent project, to give a perspective on what kind of costs that can occur in virtual event production.

The Vevent pilots comprise both 1) a customised virtual world, that was built for a music event in Seinäjoki, Finland, 2) VeventWorlds with three different AltSpace worlds, where you can arrange virtual events, 3) an audio experience for a festival as well as 4) a virtual content offering for a festival audience. The Vevent pilots represent a variation of formats and settings, where virtual experiences can be offered.

An audio experience for a festival audience

During the boutique Superwood Festival in Vuosaari, Helsinki, festival visitors were offered an audio experience, The Sound Experience, as part of the festival programme. The Sound Experience consisted of short stories and poems written by members of Helsinki Writer's Group, inspired by autumn colours, chilly winds and mossy forests. Sound designer and producer for The Sound Experience was Nicolas Lehtola of Noana. In The Sound Experience, the festival visitor could experience the sounds of Superwood, even after the festival had ended. (The Sound Experience 2022)

The production of *The Sound Experience* did not involve any software costs, since there was access to an inhouse sound studio on campus. The price for the studio is 1000€/day and for a studio engineer to be on location, approximately 60-70€/h. The content production comprises the poems, written by five authors, who also participated in the recording process. The costs for the content production also include employer costs. Content production and audio design (including editing of the product) were by far the biggest expenses in the production. Marketing and promotion consisted of material cost for promotion during the Superwood Festival. The Sound Experience was also published on the festival's website.

Table 1: Costs – The Sound Experience

Content production	- 2 400 €	5 authors
Audio design & editing	- 2 500 €	Sound design & production
Recording studio	- 1 000 €	Rent for sound studio
Studio engineer	- 130 €	2h training in the studio with sound engineer
Marketing & promotion	- 100 €	Material costs for promotion
TOTAL	**- 6 130 €**	

Table 2: Work hours – The Sound Experience

Project management	70 h	
Content and concept design	675 h	Students' work, including background work.
Marketing & promotion during the festival	20 h	Ten volunteers working 2h/person with promoting

The promotion work was conducted by first year Arts Management students, who volunteered at the festival. The volunteers were equipped with QR-codes, that the festival audience were encouraged to scan. This gave a personal touch to the promotion. The project (pilot) was managed and supervised by a senior lecturer in Arts Management. The work related to content and concept design included background work, and was done by 5 senior Arts Management bachelor students, who worked actively with the content planning. This also included communication, agreements, budgeting etc.

A customized virtual world for an event

A customized virtual world for Nummirock was crafted in the Altspace platform. The vision for the pilot was to provide an all-embracing event experience for the Nummirock community. The visitors could follow the live-streamed gigs at the main stage as well as meet and discuss with other (virtual) visitors, all in a virtual environment. Nummirock was a hybrid festival, with the Vevent-pilot held in Altspace VR. Costs other than the pilot were covered by the festival.

- Technical costs (equipment): This Vevent-pilot did not buy or rent equipment (cameras, microphones etc.). Costs other than the pilot's streaming costs were covered by the festival (which was hybrid). Equipment can be rented/bought from companies, costs can vary between hundreds to tens of thousands of euros

Table 3: Costs – Virtual world for Nummirock

Content planning		Salaries
Content & concept design	- 500 €	3D modelling, salaries
Project management	- 2 150 €	
Internal communication	- 900 €	
External communication	- 450 €	
Content planning		
Manuscript/ screenplay	- 1 670 €	External service
3D design	- 4 150 €	External service
Visual design	- 1 670 €	External service
Audio design	- 420 €	External service
Camera work	- 600 €	Salaries
Editing	- 660 €	Salaries
Visual design (AV techniques)	- 210 €	Modification to Altspace environment (external service)
Content		
Other fees	- 650 €	Moderating the virtual event
TOTAL	**- 14 030 €**	

- Most of the work regarding content planning was project management. The expenses were mostly salaries

- Communication was done as part of the project management

- Most of the content production was done as an external service (3D design, screenplay, visual and audio design). Camera work and editing was done in-house

Offering exclusive content virtually to a festival audience

The goal of the project with Turun Musiikkijuhlat (TMJ) –festival was to create exclusive content for the event's main sponsor. TMJ consists of various concerts and events and one particular concert was chosen for the purpose. The basic idea was to give the VIP audience a short 3D-enhanced experience with the artist, which they could watch and listen right before the actual show. The result was a video insert, where the artist explained the piece and performed parts of it. Virtual reality studio Zoan designed the special features in the video based on the artist's story. The video insert was downloaded to Youtube as a private video and its link was meant to be shared with the main sponsor's invited guests. Turun Musiikkijuhlat was cancelled, so we were not able to test the pilot in real situation.

- Software costs: Adobe Creative Cloud license for Humak
  (The price is for a one-year subscription)

- The concept and the manuscript were designed with the Devising method, all stakeholders were part of the process. The implementation was bought from Zoan

Table 4: Costs – Exclusive content for TMJ -festival

Software costs	- 800€	Adobe Premier, After Effects
Content & concept design	- 500 €	Vevent, TMJ, Zoan
Project management	- 750 €	Zoan, Vevent
Internal communication	- 50 €	Vevent
External communication	- 250 €	Vevent
Manuscript / Screenplay	- 500€	Vevent, TMJ, Zoan, TSOP
3D design	- 3 000€	Zoan
Audio visual production	- 3 500€	Zoan, Freelancer
Other fees	- 750€	
TOTAL	**- 10 100€**	

- Project management: The cost consists of Zoan's project management

- Internal communication: phone calls, internet etc.

- 3D design was bought from Zoan

- Audio visual production includes the freelance cameraman and audio recording. The editing, visual design and audio design were bought from Zoan

- The other fees include travel and accommodation, presenter fees, marketing and promotion and agreements

Creating a virtual setting for virtual events: Vevent Worlds

Metropolia piloted event venue production in virtual reality. The aim was to understand how cultural and educational organizations can build their virtual worlds in the spatial internet today. Vevent Worlds was developed by a crowdsourced service design process. Vevent Worlds is both a large virtual event venue and a place to teach virtual event production in authentic conditions. It is accessible with VR goggles and computers.

- 60% of the pilot's costs were connected to content planning

- 70% of the costs for content planning were for project management. Most of the expenses were salaries

- The costs for content production consists of three XR designers' salaries, some purchases of 3D elements and audio-visual production (visual design, audio design, 3D etc.)

Table 5: Costs of VeventWorlds

Content planning		
Content & concept design	- 2 500 €	Salaries
Project management	- 5 550 €	Salaries
Content production		
3D design	- 6 000 €	Including AV production
Content		
Presenter's fee	- 800 €	Three videos
TOTAL	- 14 800 €	

Conclusions

After examining the costs for the Vevent pilots a couple of conclusions can be drawn. There are different types of virtual events with different types of costs. The pilots' costs varied between 6 000€ -14 000€. Content production (e.g., 3D design, visual design, editing etc.) is a significant cost when creating virtual event experiences. 55% of Nummirock's costs were connected to content production. For Superwood the ratio was 80 %, but here content planning was mostly done inhouse by arts management students. For Turun Musiikkijuhlat, 50% of the costs were connected to content production. 40% of the VeventWorlds costs were content production. Moderating a virtual event is an important part of the event itself, therefore moderating also needs to be taken into consideration in the budget.

In general, the number of participants is not as important for a virtual event production itself budget-wise as it is for a live event production. However, some event platforms charge a fee per participant, which varies from € 1 to € 10. In the case of a thousand participants, this can therefore have a significant impact on the budget, even if it is a budget-critical event. On the other hand, hosting a physical event for 1,000 people still costs a lot more. However, the actual price structure consists of the services provided for the event. Whether it involves design, scriptwriting, marketing, event support, visual design, external software licenses (e.g., participatory applications), etc. In addition, the length of the event is affected. Event support for a half-day event is different from going for a three-day fair.

A fairly secure budget for a basic 1,000-participant seminar with virtualization and photography services is less than 10,000 euros. By increasing the production value, the price is € 10,000 - € 30,000, when performers, professional presenters, ancillary services, simultaneous interpretation, a studio environment, etc. are involved. Basic production in office space is affordable, less than € 1,000. Better quality is obtained, with a space budget of around € 800 -3000 €, a light studio space of around € 5,000 and a full-size studio suite of € 6,500-€ 15,000. So, add up the basic production for 1000 participants as multi-camera production in appropriate facilities (not a studio) – less than € 10,000. (Event producers, 2022).

TASK

Make a sketch of a virtual event:

✔ **What kind of virtual event would you like to create?**

✔ **Which format or platform would you use?**

✔ **Which phases do you identify in a production process for such a virtual event?**

✔ **What costs do you pinpoint in your sketch?**

References

Dowson, Ruth & Basset, David 2018. Event Planning and Management – Principles, planning and practice.

Event producers 2022. Several locations, 2.2.2022-25.2.2022. Interviewers: Vilma Lumio, Johanna Tolvanen, Jukka Salmela

Superwood Festival 2022. Retrieved 28.2.2022. https://www.superwoodfestival.com/

The Sound Experience 2022. Retrieved 27.2.2022. https://www.superwoodfestival.com/program-2020#soundexperience

Vallo, Helena & Häyrinen, Eija 2010. Tapahtuma on tilaisuus, 2nd edition.

Vevent 2022. Project. Retrieved 27.2.2022. http://vevent.humak.fi/in-english/

CHAPTER 2.
MONETIZATION IN VIRTUAL EVENTS

Veera Vuorio

Virtual events have a lot of benefits. They are accessible, convenient, and just a great option for many kinds of events out there. But monetizing one can feel daunting compared to the process of creating revenue from live events.

So, you're planning a virtual event and now it's time to get a monetization strategy in place. There really is no set of rules to monetize virtual events and each event is different in its own way. Before you start producing a virtual event, it is essential that you have your monetization strategy carefully planned out from the beginning.

Here's a glimpse of some of the many ways to monetize a virtual event.

Image 1: Tickets as a source of income (Image source: Unsplash)

Tickets

Just like with any event, you can also sell tickets for virtual events. But it doesn't have to be black and white between free or paid. One good practice is to sell premium tickets with extended event content and to keep encouraging attendees to purchase a premium pass before and during the event through marketing and social media.

You can even get creative and create a set of tiered ticket packages all for different prices, for different needs. Consider tickets like **VIP Passes**, **Early Bird access**, **Group packages**, **Single-Day** or **Multiple Day Passes**, **post-event access**, **session recordings** to name a few. Don't be afraid to think out of the box when planning out tiered tickets!

Consider what makes your event valuable to the attendee and how you could monetize different types of premium access to it. This strategy also helps you to collect data for targeted follow-up promotional deals and marketing after the event.
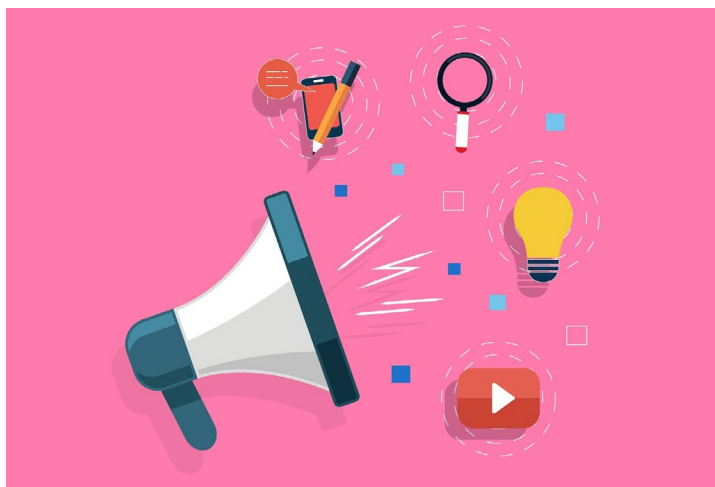

Image 2: There are various sponsorship possibilities (Image source: Pixabay)

Sponsorship Opportunities

Sponsorship opportunities are excellent for monetizing virtual events. The standard sponsorship packages often include mentions on the event website, registration page, email signatures, and/or social media shoutouts, and are good basic practices for showing off sponsors outside the event. Within the event, you can utilize Q&A sessions, networking lounges, sponsorship gamification, or polls and quizzes for your sponsors to participate in.

And if you have built a good community for your event on social media, a sizable following always offers great value to your sponsors.

Consider also selling short speaking opportunities for your sponsors during the event or presenting short promotional video content during breaks and in between speaker sessions. Creating good and clear sponsorship packages is essential for your sponsors so that they can understand what kind of value you offer to them at your event. A good set of tiered sponsor packages also makes it easy for the potential sponsor to decide what kind of sponsorship appeals to them the most.

Image 3: Online shopping as a part of event experience (Image source: Unsplash)

Shopping, upselling and retargeting

People love shopping online and it's no different in virtual events. For events such as virtual trade shows or fairs, a dedicated section to sell related products, services or merch can be a useful way to help monetize your event. Just make sure that the shopping experience is smooth and seamless - all the same principles that make an online shopping experience smooth and easy should apply to your event.

If you are considering selling any products at your event, don't forget to upsell and send out retargeted shopping content afterwards! With good data from your attendees, you can create well-targeted email ad campaigns around your event's products, announce new events, or send out questionnaires to gain insight into what your audience enjoyed the most.

If you don't have a product to sell, you can look into affiliate marketing. Affiliate marketing can be a powerful addition to your event if you find a good partner to work with. You can promote affiliate products in the same way you promote any products to your attendees, just make sure that the affiliate partner's products are in line with your event and the interest of your audience.

Be sure not to overdo the marketing and selling. Too much can hamper the experience for your attendees and too little might lower the potential revenue you could make.

On-demand content

One of the best things about virtual events is that you don't have to restrict your monetization strategy to the duration of the event. Instead, it can be stretched out and you could make profit years after the event took place.

Consider recording your event and once the event is over, use that content to create on-demand content, and sell discounted access to the recorded sessions for those who missed the event or wish to revisit it.
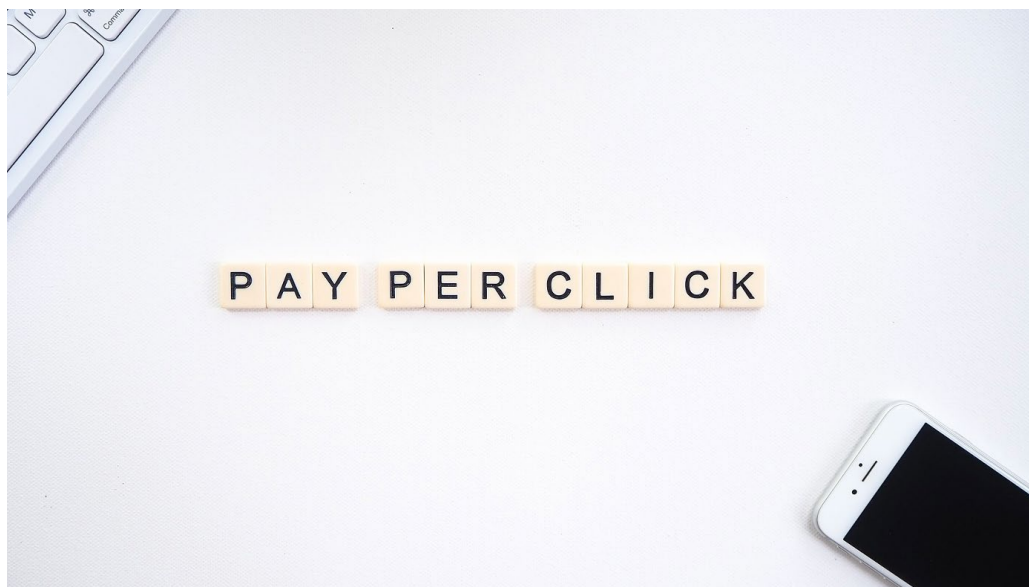

Image 4: Pay per click thinking (Image source: Pixabay)

Website ad spaces

Your event can potentially drive great traffic to your website right from when you announce your event. This is a great opportunity to put up some space for ads or use this space for your sponsor's content. Just be sure to filter out irrelevant ads so your audience can only see content that is in some ways relevant to your event's theme and audience's interests.

Bottom line

Virtual events come with a lot of benefits, but with that, they bring their own challenges. The good news is that creating good revenue from your virtual event is completely possible with the right tools and mindset. With an open mind, you can experiment with different strategies that suit your events and utilize the trackable metrics virtual environments offer for a better view of what works and what doesn't.

Image 5: Virtual event experience (Image source: Unsplash)

It's easy to get overwhelmed by all the different possibilities, so try to be selective with your strategies and aim to do one or two things well instead of trying to juggle all possible monetization strategies at once. Combine that with an open mind and a bit of creative thinking and you'll soon have a successfully monetized virtual event in your hands!

TASK

How would you monetize your event?

How to make money from virtual events? Give five examples of how to earn with your virtual event.

References

Appaya, Ishani 2021. The best strategies to monetize your virtual event. Retrieved 25.2.2022. https://www.airmeet.com/hub/blog/the-best-strategies-to-monetize-your-virtual-event/

Diserio, Jake 2021. Virtual event monetization: 9 ways to make money hosting online events. Retrieved 25.2.2022. https://www.aventri.com/blog/how-to-make-money-hosting-online-events

Jain, Falguni 2021. How to monetize virtual event: the marketer's guide. Retrieved 25.2.2022. https://learn.g2.com/virtual-event-monetization

CHAPTER 3.

LEARNING FROM E-SPORTS AND GAMING FOR INNOVATIVE VIRTUAL EVENTS

Laura-Maija Hero

Today, XR- and 3D modelling-based virtual events offer versatile experiences for culture and business audiences. Lately, however, we have seen mostly free, publically-supported events or events based on ticket sales . Virtual event producers should learn sustainable business logics fast to avoid regression when the world opens for physical events again. The virtual event industry, both profit and non-profit, is growing rapidly despite the opening of lockdowns.

In online events, customisation, content generation and interactive media enhance the visitor experience. In addition, online consumer-to-consumer interaction and effective communication positively influences behavioural intentions in online events. (Kharouf, Biscaia, Garcia-Perez & Hickman 2020.) Virtual events are increasingly being designed in game engines and 3D modelling, and the opportunities in these events resemble the community feel and the virtual economy gamers are used to. What could we learn from the gaming industry? The gaming industry operates with several types of business logics, the main ones being evidently e-sport and individual and social

computer, mobile and console gaming. In addition to literature, for this chapter we asked some young novice cultural managers (who have grown up during the digital age) to give their insight on games and e-sport by playing games and following e-sports.

During spring and autumn 2021, we asked N=44 third-year cultural management students on a new technology course about possible lessons from e-sports: What can we (cultural managers producing culture and events) learn from e-sport to rescue the creative industries? The task was not mandatory and it was answered by N=12 students. In addition, during autumn 2021 we asked N=5 cultural manager students to observe games and their business logics (Hoikkala, Impivaara, Numminen, Pernu, Rapila & Virtanen 2021). Four games were observed by students while playing them:

The Sims - "Play With Life"
A playable simulation game series. The Sims games are available on many different platforms. Playable on computers and other smart devices. The idea of the game series is to create Sim characters that the player has to take care of. In the game, you can also build houses and develop sim skills and relationships with other "sims".

Assassin's Creed - "Nothing is true; everything is permitted"
A series of action-adventure games that have been influenced by historical events and characters, as well as a variety of conspiracy theories in the games. The games are played with Assassins and quests according to the story. There have been many different versions of the games from different eras in history, and the games in the series have also been made for many different consoles.

Axie Infinity - "Play to Earn Revolution"
An online game inspired by the Pokémon card game that uses Ethereum-based cryptocurrency as a key element of the game. In the game you have the opportunity to collect, grow and exchange "creatures" (Axies) and fight them with other players.

Gun Raiders - "Free-to-play VR Shooter"
Free shooting game to play with Oculus Quest & Quest 2 VR glasses. The game is played on the Internet as a multiplayer game worldwide together with others.

Lessons from e-sport

E-sports, or 'electronic sports,' refers to professional gaming. Young men and women from around the world make a living playing video games professionally, usually through prize pools in tournaments or from corporate sponsorships. Hamari and Sjöblom (2017) define e-sports as "a form of sports where the primary aspects of the sport are facilitated by electronic systems; the input of players and teams as well as the output of the e-sports system are mediated by human-computer interfaces". But why should virtual event producers be interested in the lessons of e-sport? E-sports events are attractive and remarkable experiences: fans get the chance to (a) watch the best players in the world compete; (b) meet their favorite players; and (c) share their passion with

Figure 1: The e-sports ecosystem (Jalonen 2019).

hundreds of like-minded fans. Consumer demand for e-sports and the growth of organized video game competitions have generated considerable attention from the sporting, event, tourism and entertainment industries. E-sport events attract the biggest audiences in the world, most of them being virtually present. (Dilek 2019.)

During the early 2000s, the development of e-sports picked up speed, with tournaments and competitive leagues being generated in various countries, including in Finland. As a result of this development, competitive gaming began to be regarded as an occupation. The e-sports cash prize sums have continued to grow steadily, with no end in sight. For example, Epic Games, the developer of the popular game Fortnite, has announced that the company awarded prizes to the amount of some 100 billion dollars during the 2018-2019 season alone. This is not just about rewarding good e-sports performances but, to a large degree, about game company marketing, with the objective of catching the attention of the masses. (Jalonen 2019.)

The larger ecosystem approach is also enlightening when describing the business opportunities related to e-sports (Figure 1).

Those typically considered to be part of the e-sports ecosystem include e-athletes and e-sports teams as well as their trainers; game developers and publishers; e-sports tournament organisers and league organisations; national and international e-sports associations; the media and live streaming platforms; betting companies; gaming computer and equipment manufacturers; sponsors and advertisers; and e-sports fans and followers. Succeeding in e-sports tournaments and leagues requires careful preparation. (Jalonen 2019.)

It is not just about professional gamers and gaming, but a vast beneficiary network that the gaming employs. The value of e-sports obvious. But what is it that makes e-sports valuable, and which aspects of e-sports can be justified as a valued activity? Value justification in the E-sports ecosystem:

1. Inspiration – e-sports produces pleasure. E-sports speaks to individuals on an emotional level, thereby generating emotional value.

2. Citizenship – e-sports is a form of representation. In addition to individual players and professional teams, e-sports also entails competition between nations.

3. Fame – e-athletes are opinion-leaders. The world of fame is based on celebrity, reputation and recognition.

4. Home – e-sports offers a sense of community. For an e-sports event, team and the fans, a sense of community is a resource relying on the supporters' trust and respect.

5. Industry – e-sports is a goal-oriented activity. The industrial world constitutes the external framework for e-sports. Betting, score statistics and strategies, game performances, player transfers and game tactics are analysed with concepts characteristic of the industrial world.

6. The market – the value of e-sports is created through trade. The productisation of e-sports and the related commodities and services aid companies that seek to utilise the emotional relationship between an e-athlete and viewer as well as between the recreational gamer and the game. A central role is played by the media with their emotionally evocative stories. (Jalonen 2019.)

What could be learned for other creative industries and cultural businesses? I don't think esports business model differs a lot from regular sports, thus I think most of its potential is already being used in other businesses as well. One thing I want to mention is that young kids start playing these games at a very young age, and because of some of them become professionals, they earn really good money. This kind of action should be used in other areas of life too and the educational system should support each individual's interests form a young age. (Observer H, e-sport)

E-sports organizations make money much like regular sports organizations do. They have sponsors, advertisement and media rights and they sell tickets and merchandise.

Figure 2: The value and what catalyzes the value creation in e-sports. (Jalonen 2019).

As e-sports has grown in popularity, some huge companies, such as Red Bull, have decided to sponsor the teams. This of course is a big factor when it comes down to the prize pools of big tournaments. The teams usually have their sponsors' logos in their shirts, just like in regular sports. Individual players can make money through personal sponsorships that they promote while streaming. Obviously, if there is an event such as a Counter strike tournament, tickets are sold for people wanting to see the action live.

Even though all the e-sports content is being livestreamed trough the internet, people want to see it live. Same goes for merchandise. It can be bought in the event or online. Merchandise is being sold pretty much everywhere, especially in bigger companies nowadays. All the esports events are being livestreamed through some streaming service. Obviously the services want the event for themselves, so that they can get viewers and further advertise through their system. Twitch is the most popular streaming service and it's owned by Amazon. The popularity of Twitch is also growing really fast and in addition to gaming people have started using it to stream their everyday life too. Twitch has the feature to let viewers donate money to the streamers so that's how a lot of streamers make their money. As people earn money in teams and as individuals, e-sports as a whole connects multiple money flows and opportunities for individuals to succeed. (Observer A, e-sport)

For example, the prize pool for the Dota 2 gaming tournament, The International, was $ 40 million in 2021. Prize money was collected in several ways: sponsoring and collaborating with different teams, arenas and directly sponsoring the Steam store and selling in-game items. (Observers D, e-sport)

Like regular sports teams, the esports teams mainly get their money through sponsorships, advertising, media rights, tickets sales and merchandise. The players get paid monthly by the teams and the teams attend tournaments that sometimes have huge prize pools. (The International 2019 tournament had a 34.33 million dollar prize pool.) So obviously a lot of the prize money comes from the big sponsors, such as Redbull or Honda. Esports is becoming more popular each day as nowadays computers run games easily and streaming platforms have been shown to be profitable for everyone. The rising popularity is of course what gets the big sponsors and media interested and what gets them to make their move by buying themselves, let's say, a part of a team's share.

The merchandise sold in esports is different to regular sports because the game companies, such as Riot Games sell in-game skins to players with real money. For example each year the winners of the world cup get their own custom made skins that are then sold to everyone who wants to buy them. And oh boy people do. I myself have spent well over 1000€ on buying skins on League of Legends and I know there is many people like me. (Observer H, e-sport)

Learning from games

The business model of publishing a game for free, ie. free-to-play business model, and then making revenue from selling in-game items for real-life money, has been quite prevalent in the gaming industry. Today, XR-based virtual events should learn from these business logics fast, as the virtual event industry is growing rapidly towards more commercial opportunities. Virtual events are increasingly being designed in game engines, and the opportunities in events resemble the virtual economy gamers are used to. In many free-to-play games, in-game items are instrumental and can directly benefit players' gameplay: to enhance a certain skill, receive extra time to play the game, or unlock features that require social reciprocation from other players (e.g., when one needs an item or favor from another player to proceed). Some games also provide purely cosmetic items for purchasing, such as changing the clothes that one's avatar wears. This free-to-play business model heavily relies on sales of virtual goods. (see e.g. Shukla & Drennan 2018; Sifa, Hadiji, Runge, Drachen, Kersting & Bauckhage 2015.)

Let's take a practical example. One of the most successful games to generate revenue from selling in-game items is Fortnite. Like many popular multiplayer online games, it uses the free-to-play business model. Based on an online survey of Fortnite players, Cai, Wohn & Freeman (2019) investigated in-game behaviors that can be used to explain who is more likely to spend money in a game. They studied players' motivations to spend real-life money and how the amount of spending was correlated with different motivations and behavioral factors. According to Cai et al. (2019), both social and individual factors predict purchase behavior. Younger players are more likely to buy in-game

items; income did not predict buying. Therefore, the willingness to pay and how much players would pay are determined not by their financial capability but by the game itself. Players buy in-game items because they want to either look unique and stand out from the groups or to catch up on popular trends with other players. (Cai et al. 2019; Wohn 2014.)

The community feel supports the in-game business logic. In games that are basically playable alone (The Sims, Assassin's Creed), community and like-mindedness were evident in forums and other game-related platforms. In Gun Raiders and Axie Infinity, on the other hand, you constantly interact with other players.

> *There is a friendly atmosphere among the players, even if everyone is unfamiliar with each other. In Gun Raiders, the sense of community is reinforced by the fact that the game clearly instructs you to report bad behavior ahead. It is also possible to mute in the game. (Observer B, games)*

It appears that the design of virtual events should take both social and individual attributes into account and tie the sales there when offering in-event purchases. The community feel, power of group and collaborative socializing, relationships, and teamwork offer good motives to buy new virtual tools or joint benefits.

Gaming hosts various types of business transactions. The observers found multiple business transactions, namely in-game purchases, sponsors, product placements

> *Microtransactions are used especially in gaming events. Example: At a low price, you can buy features that give your avatar abilities and / or help you progress faster in the game. If users make enough use of micropayments, they can generate so much revenue on their own that ads can be completely removed from the platform. (Observer G, games)*

> *In Twitch, the live stream host had a sponsor shirt on. (Observer A, games)*

> *The Sims, on the other hand, occasionally makes "combo packages" with different brands. This is what they have done with Ikea, H&M, Mac Cosmetics and Moschino, for example. (Observer F, games)*

Not all games had noticeable brands present in the game. No concrete product placement was observed in Gun Raiders or Assasin's Creed.

> *In Gun Raiders, the atmosphere was communal and there was a way to chat with other players through a microphone, and with the help of VR glasses and controllers in the virtual world, you could communicate up to a certain point in sign language. This free game, played with VR glasses, Gun Raiders convinced so well in the testing that it could well cost 10-30 euros to buy the game itself. (Observer F, games)*

Real money is not the only currency, tokens are used for in-game transactions. Not all players want to enter their account information and pay, especially if it is a new platform for them. Instead, payouts can be circumvented so that tokens have to be paid for and

players can earn them by completing tasks set by sponsors. Tokens can be earned by, among other things, answering a sponsor's survey or watching a promotional video.

> *In Axie Infinity, by purchasing the Ghost cryptocurrency, the player got the Ghost item for the game.* (Observer D, games)

Tokens and crypto currencies can be used in virtual events e.g. so that a certain number of tokens are distributed to all participants. Participants can use these tokens to reward the speakers and performers who, in their opinion, performed best. Observers pointed out, that this kind of action has already taken place in things like influencer marketing, OnlyFans or Patreon where people take sponsorships and donations from the work that they do. I think the networks could be further utilized, for example Instagram Live could have an option to donate money.

The observers saw mass market opportunities for e-sport, even if it is a profession for a limited number of players:

> *The issue is essentially the same as getting a sport to become popular – it's hard to make something big, when something has already been established as a huge part of the scene: as an obvious example, ice hockey will never be replaced in Finnish culture. However, the appeal of eSports has more room for change as it is a relatively new idea for a lot of people. Maybe we'll see Catherine become the next big competitive thing in Finnish eSports, who knows? But seriously, I recommend checking out competitive Catherine gaming. It is wild.* (Observer H, e-sport)

What can we learn for virtual events?

As customisation enhance the visitor experience (Kharouf et al. 2020), even tailored experinces can be offered digitally. As content generation and interaction possibilities enhance the experience in online events (Kharouf et al. 2020), the visitor should be given the opportunity to be active, meet other visitors and work together towards a joint goal. Digital games and the e-sports industry offers us virtual event producers several lessons. Based on the learnings from gaming, the experience should be tied to the community feel and social engagement more, in virtual events as well, and in-event purchases can also be an opportunity in cultural and non-profit events with external partners if they enhance the active role of the attendees. From e-sports we can learn to focus on emotional value and inspiration, focus on a sense of community by offering virtual communities to belong to, focus on giving different audiences a goal to strive towards and offering an active role, focus on onboarding partners by understanding their aims and needs. After all, VR and 3D events are rather new and the novelty value is easy to use.

A virtual event can offer:

- virtual freebies to the audience (e.g. virtual meet and greet the artist in VR or zoom, sit closer to the performer, gain more applauding tools and emojis)

- in-event purchases (buy walking speed, meet more interesting people than others, enjoy more content like music and videos with cryptocurrency, tokens or real money,)

- product placements for brands (e.g. virtual drinks from a brand, all booths are branded or offer virtual presents like branded hats and louder voice or faster moving around),

- service placements for digital service businesses (e.g. links to online shops or hair salons, event producer firms)

- sponsoring and partner collaboration, ie. act as a platform to support the content providers aims (like offering an art museum a gallery in a theatre-related virtual event, offer an elevator manufacturer to brand all the teleporting stations, cool AR posters to launch a webAR object, collect NFT virtual trading cards, in-event branded games and contests like who can spray Pepsi the highest).

- Virtual event producers must have a creative mind. All virtual event productions should start with multidisciplinary ideation to ensure the best possible experience. After all, there is always a threat that an event grows too commercial and loses its power to engage attendees in an enjoyable experience.

The first material related to e-sport is produced by the students of Metropolia (New technologies basics course task) and the second material related to gaming is collected by students of Humak (Hoikkala et al., 2021). Thank you for your great work!

References

Cai, Jie & Wohn, D.Y. & Freeman, Guo 2019. Who purchases and why? Explaining motivations for in-gampurchasing in the online survival game Fortnite. CHI PLAY'19 conference. Paper presentation.

Dilek, Sebahattin E. 2019. E-Sport events within tourism paradigm: a conceptual discussion. International Journal of Contemporary Tourism Research 1, pp.12 – 22Hamari, J., & Hamari, Juho & Sjöblom, Max 2017. What is eSports and why do people watch it? Internet Research, 27(2), 211-232.

Hoikkala, Katriina & Impivaara, Tiia & Numminen, Lennu-Kalle & Pernu, Mira & Rapila, Senja & Virtanen, Nora 2021. Raportti. Ansaintalogiikka ja osallistujakokemus virtuaalimaailmassa. Unpublished report.

Jalonen, Harri 2019. The Value of E-Sports Is in the Eye of the Beholder, But Can E-Sports Operators Influence What the Spectators See? Advances in Applied Sociology, 9, 306-329. DOI: https://doi.org/10.4236/aasoci.2019.97023

Kharouf, Husni & Biscaia, Rui & Garcia-Perez, Alexeis & Hickman, Ellie 2020. Understanding online event experience: The importance of communication, engagement and interaction. Journal of Business Research, 121. https://doi.org/10.1016/j.jbusres.2019.12.037.

Shukla, Paurav & Drennan, Judy 2018. Interactive effects of individual- and group-level variables on virtual purchase behavior in online communities. Information and Management 55, 5 (2018), 598–607. DOI:http://dx.doi.org/10.1016/j.im.2018.01.001

Sifa, Rafet & Hadiji, Fabian & Runge, Julian & Drachen, Anders & Kersting, Kristian & Bauckhage, Christian 2015. Predicting Purchase Decisions in Mobile Free-to-Play Games. In Proceedings, The Eleventh AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE-15). 79–85. http://www.aaai.org/ocs/index.php/AIIDE/AIIDE15/ paper/viewFile/11544/11359. Downloaded 20.2.2022

Wohn, D.Y. 2014. Spending real money: Purchasing patterns of virtual goods in an online social game. In Proceedings of CHI 2014 (pp. 3359–3368). New York, NY: ACM.

CHAPTER 4.

CONSUMER BUYING BEHAVIOUR IN VIRTUAL EVENT CONTEXT

Satu Lautamäki

Virtual events provide an opportunity to understand online consumer behaviour and to identify how such understanding can be used to generate new earnings. Virtual events certainly represent an advanced sector of online buying behaviour, where consumers do not yet have much experience, especially in terms of how much they should and would pay for the events. When the Covid 19-pandemic hit our societies, many of us moved to distance work, and virtual platforms for cooperation, such as Teams and Zoom, became familiar. However, we as consumers seldom bought any licenses for the platforms as they were either free or paid by our employers. In addition, we consumers might, consciously or unconsciously, want to understand that all virtual events are free. But, of course, there is also increasing evidence of consumers' willingness to buy and pay for, e.g., music events. There might not be any specific explanation of how consumers behave and especially buy in the context of virtual events, but based on earlier studies for online consumer behaviour, we can construct a preliminary understanding of it.

Concepts used to explore online consumer behaviour

In general, online consumer behaviour is an intriguing avenue to explore, as there are various factors, processes and models to understand and measure. For instance, there are studies concentrating on Stimulus-Organism-Response-framework. According to this framework, a consumer is stimulated by various factors, which generate emotional and cognitive processes, which subsequently cause specific behaviour. Another approach is to understand online consumer behaviour based on perceived value, that is, the overall assessment of how the service or product gives benefits and if those are higher or lower than the perceived cost. On the other hand, perceived risk is also used as a tool to understand consumer behaviour in an online context. In addition, traditional process models of consumer buying behavior are also applied to understand how consumers move from initial problem recognition to information search, evaluation of alternatives, to the decision and act of buying and finally to post-purchase evaluation. (see e.g. Chawla, Khan & Panday 2015.)

The above mentioned are some examples of how to explain online consumer behavior, but there are several other models and frameworks adapted from, for instance, marketing, psychology and social sciences. This vast array of potential approaches shows the complexity of consumer behaviour, both offline and online. What can also be assumed is that the more advanced the context becomes, the less rational and systematic consumers might be in searching for and evaluating all information before making the decision to buy and pay.

Dimensions affecting perceived value

One particular model which seems to have been tested in a number of current studies is based on perceived value approach: how consumers assess online shopping environments based on utilitarian, hedonic and social cues or dimensions. There are also models with more than these three dimensions, adding, for instance, epistemic (desire for knowledge), altruistic or spiritualistic values. However, within online contexts, the utilitarian-hedonic or utilitarian-hedonic-social dimensional model seem to be the most often applied in empirical studies in various contexts, such as live streaming, e-commerce platforms, mobile entertainment shows or virtual reality environments. (see Aulia, Sukati & Sulaiman 2016.)

Figure 1 presents some issues or cues related to utilitarian, hedonic and social dimensions, which consumers can consider at different phases of an online buying process. The issues mentioned are brief examples, and certainly, other similar topics can be found. In order to understand the role of these dimensions, I examined how they were approached at the planning stage of our Vevent pilot at Nummirock festival (see also Introduction for a short description of the Vevent pilots).
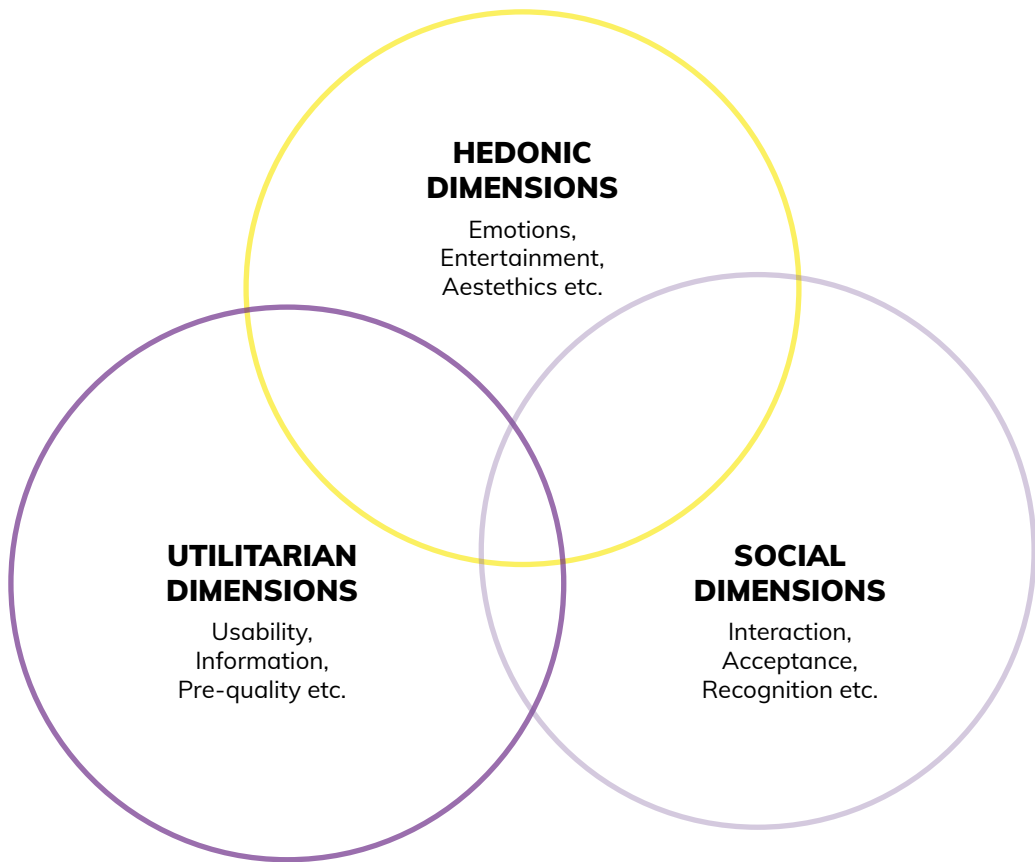
HEDONIC DIMENSIONS
Emotions, Entertainment, Aestethics etc.

UTILITARIAN DIMENSIONS
Usability, Information, Pre-quality etc.

SOCIAL DIMENSIONS
Interaction, Acceptance, Recognition etc.

Figure 1: Three dimensions of perceived value.

Dimensions considered at the planning phase

When designing the Vevent pilot at Nummirock, the planning team had meetings from February to June 2021, ranging from once a month to every second week. At these discussions, various factors were considered. When looking at the memos of the meetings, it becomes evident that various elements of the social dimension were especially salient: the feeling of a community was emphasized, with several considerations on how people meet and interact within virtual reality. The hedonic dimension also got various mentions; people spoke about the holistic experience, the atmosphere and the event in its entirety, built up of aesthetic components. The utilitarian dimension was, perhaps, mostly looked at from a design perspective, as each single element of the virtual reality had to be planned and positioned, but also co-creation and informative materials for consumers were considered.

So, in our project, the social aspect seemed to be emphasized, but hedonic and utilitarian aspects were also acknowledged. In order to be able to understand to what extent consumers themselves value these dimensions when buying services or products in a

Figure 2: Examples of factors discussed when planning a virtual event.

virtual environment, we can look at some previous studies. In the live stream context, a study conducted by Hou, Guan, Li and Chong (2020) supported similar findings of prior studies that interactivity can have a considerable impact on the consumer's behavioural intentions, affecting, for instance, their willingness to continue watching the event and buying services, such as virtual gifts.

Peukert, Pfeiffer, Meissner, Pfeiffer and Weinhardt (2019) have examined the perception of utilitarian versus hedonic experiences in virtual reality shopping environment. They found that "immersion influences the user's intention to reuse the shopping environment along two paths, which ultimately cancel each other out" (Peukert et al. 2019, 782). In the highly immersive virtual environment, where, e.g., head-mounted devices were used, the participants were less price-sensitive and their enjoyment was increased. However, their experience on the utilitarian dimension was negatively affected, as they could not read the detailed information of the products they were buying. So, each of these dimensions can play a relevant role in online consumer behaviour, but more evidence would be needed concerning, for instance, the relative importance of each dimension.

Conclusions on consumer willingness
to pay for cultural events

When thinking about cultural events, consumers increasingly seem to be willing to buy and pay for virtual experiences, be it either, for instance, tickets, donations, merchandise and virtual gifts or post-ticket sales to watch the recordings. In a study with a sample of 2999 respondents from the U.K and U.S, it was found out that those who have participated virtual concerts and events are "almost three times as likely as the average

internet user to buy merchandise and donate" (Global Web Index 2020). Unfortunately, during the Nummirock pilot, we could not test the visitors' willingness to buy as it was free for everyone, although the potential earning models were discussed during the planning phase. Generally, the comments concerning the virtual event were positive. There were 219 visitors in the Altspace during the two-day event. When the event published the link on Instagram nine days before the event started, it was watched 1523 times with 167 likes (Nummirock 2021).

Concerning consumers' willingness to buy and pay for virtual events, there are already remarkable success stories. For instance, in July 2020, dance music festival Tomorrow- land was organized virtually, with more than one million viewers paying-per-view (Got- tfried 2020). In May 2021, the band Nightwish played two concerts in virtual reality, with over 150,000 viewers from 108 countries, also paying-per-view (Helsinki Times 2021). In addition, the Nightwish concert can be seen in Staccs streaming service, which is an op- portunity to earn from post-event ticket sales based on a user-centred royalty method (Global News and Entertainment 2021).

To take a closer look at how consumers perceive virtual events, I made a small-scale observation study of online discussions. I focused on the abovementioned Tomorrow- land digital festival 2021, and went through a number of social media platforms. Finally, I chose Discord and Reddit to observe as the discussion was not mainly focusing on likes, pictures or emojis sent as in some other channels but also written comments which were relatively easy to compare and analyze. The purpose was to see what consumers who had bought or were going to buy a ticket, were discussing. The analysis was based on a qualitative approach, taking into account when the comments were sent, that is, before, during or after the events.

In Reddit, the discussion before the event started with someone's comment on the pre- vious year's digital event and how it was "a lazy cash grab". Some others also critically perceived the digital event as a poor substitute for a real event, however, there were also visitors who were interested in technical aspects of the event's production. Some evaluated the visual appearance as "amazing". The program, however, seemed not to be considered as interesting as the previous year. There were some critical voices com- plaining that, having already bought expensive tickets to the original event, they were not provided any discount nor were they able to see at least part of the event with the original ticket. One visitor had already bought a ticket for the digital event as it was not expensive at all. Unfortunately, I was not able to find more discussion on Reddit during or after the event, so I turned to Discord.

Before the event, the discussion in Discord seemed to focus on visitor expectations of the performances, also discussing what type of stages there would be and how the digital event would be different from the previous year's digital festival. However, there were no questions on pricing. When the event was about to start, there were several questions and comments on technical problems (also some problems during the event). In addition, there were comments about how the stages looked compared to the previ- ous digital event. Someone asked about the pricing, to which another visitor responded by saying he was not disappointed in the event at that price. During the event, there

were pictures sent from the visitors' own parties at their own locations so the social interaction seemed to be the main topic for discussion. After the event, there was discussion about the following year's event and how to get tickets for it. In addition, comments were made about the event being "amazing": a visitor was "blown away with high quality", the "virtual partying" was experienced as top level, it was "far better" than last year's digital event.

When planning a virtual event, we should also try to affect the dimensions leading to perceived value. Based on perceived value, a consumer both considers the buying decision and evaluates the level of satisfaction during and after the event. It might be reasonable to think that when consumers search for information and evaluate potential virtual events, the main focus is on utilitarian factors. Then, when making the decision to pay for the event, their approach is more influenced by social factors and after they have attended the event, they evaluate the hedonic factors. As a holistic evaluation of perceived value, all these dimensions have an effect, but at different stages. These assumptions could be tested, for instance, by planning a customer journey where these dimensions are ideated at different stages (see the Task description).

TASK

In order to consider different factors leading to perceived value by the consumer, you can ideate them when constructing a customer journey map. Customer journey map is a visual tool which describes how a customer experiences your service step-by-step. There are free templates and instructions for a customer journey map, which you can use, for instance, for the ideation phase:

https://custellence.com/pdf/customer-journey-map-template-for-ideation.pdf

https://servicedesigntools.org/tools/journey-map

The task is to fill in the journey map for your virtual event so that it includes utilitarian, hedonic and social factors. This means you can give ideas for the Before, During and After stages in the customer journey. It is also possible to brainstorm without the journey map, by thinking about these dimensions and considering various questions, such as:

Utilitarian: **What type of information and instructions does the customer want to receive? How, where and when should this information be provided? How user-friendly is the virtual environment? Are the pricing options clear and appealing and does the price match the quality?**

Hedonic: What brings enjoyment, emotions, satisfaction, adventure and other similar values when a consumer is searching for, buying or post-evaluating a virtual event? What is the overall experience of the event?

Social: To what extent is the virtual event interactive? How do consumers consider social acceptance or recognition from others? How could the event become a community where people share their ideas and values?

References

Aulia, Septa & Sukati, Inda & Sulaiman, Zuraidah 2016. A Review: Customer Perceived Value and its Dimension. Asian Journal of Social Sciences and Management Studies 3(2), 150-162.

Chawla, Mamta & Khan, Mohammed Naved & Panday, Anuja 2015. Online Buying Behaviour: A Brief Review and Update. AIMA Journal of Management & Research 9(2).

Global News and Entertainment 2021. How Music Tech Startup Staccs' User-Centric Model Is Expanding Industry Opportunity. Retrieved 27.2.2022. https://globalnewsandentertainment.com/how-music-tech-startup-staccs-user-centric-model-is-expanding-industry-opportunity/

Gottfried, Gideon 2020. More than 1m viewers for Tomorrowland around the world pay-per-view. Retrieved 25.2.2022. https://www.pollstar.com/article/more-than-1m-viewers-for-tomorrowland-around-the-world-pay-per-view-146141

Helsinki Times 2021. Nightwish's virtual concert broke records. Retrieved 26.2.2022. https://www.helsinkitimes.fi/culture/19316-nightwish-s-virtual-concert-broke-records.html

Hou, Fangfang & Guan, Zhengzhi & Li, Boying & Chong, Alain Yee Loong Chong 2020. Factors influencing people's continuous watching intention and consumption intention in live streaming. Evidence from China. Internet Research 30(1), 141-163.

Nummirock 2021. Nummirock Instagram-pages. Retrieved 1.3.2022. https://www.instagram.com/nummirock/?hl=fi

Peukert, Christian & Pfeiffer, Jella & Meissner, Martin & Pfeiffer, Thies & Weinhardt, Christof (2019). Shopping in Virtual Reality Stores: The Influence of Immersion on System Adoption. Journal of Management Information Systems 36(3), 755–788.

TOOLBOX 7.
INVOLVING AND ENGAGING PARTICIPANTS

Sander Mosel

Participant involvement is an important way to differentiate a good virtual event from others and actually that's what virtual events are made for. It's also what attendees usually expect from the virtual event: to be a part of the event and to be involved.
But how can we involve and engage people? What ways do we have for that? Let's see. I'll give a few good examples.

At its best, you can make a virtual event without any additional cost, as your organization probably already has Teams or Zoom, for example. On the other hand, is that exactly what the participants expect? I would say that there must always be some kind of a wow effect, in a physical event or a virtual event.

Surveys before, during and after the event

The survey is definitely the best-known way to involve the participants in the event and what could be a better way than to involve them even before the event. What are the expectations for the event? Who do you want to see and hear? Who are you most looking forward to? It is also worth pushing the customer's interest and needs in the surveys and that's why questions should be designed to be inspiring not boring.

It's good to know that most of the modern virtual event platforms allow you to make surveys during the event and, as I said earlier, this definitely brings the most answers, as participants live in the moment and are happy to answer questions that are specific to that particular performance, show, presentation or situation at that moment. Surveys in the middle of an event happen to be real-time and therefore receive the most responses. Post-event feedback surveys are sure to be familiar to every event organizer. These help in developing future activities and, at the same time, remind participants about the moments and highlights of the event. Surveys may even play a role in marketing the next event. And no matter whether they are before, during or after the event, surveys should be kept short and easy in order to hold the interest of attendees as they are filled in. And please don't forget the visuals - it brings something new to the boring forms.

Polls

One of the best virtual event participation ideas is to use polls. I guess I haven't been to any virtual events recently that haven't employed polls so I would say that they are very popular and for a good reason. Compared to surveys, polls are faster, more graphical, and involve more engaging methods. Polls are quite simple. You can run polls in which attendees rate the sessions they attended and polls that direct conversations toward specific subjects. In some circumstances, speakers can also conduct brief polls during their online presentation. Depending on the platform you use, you can even get real-time answers for everyone to see right away and this always generates a nice buzz among the participants. As with surveys, polls can be used before, during, or after an event.

Quizzes and contests

One thing you probably know, or you should know: people love contests and quizzes. So why wouldn't they like them as part of a virtual event? Next time, give it a go! Start your killer competition upright before the event and draw the raffle winner during the event; you will see for yourself how the average event attendance rate is definitely higher than you have ever had. Next time, try it.

Or just organize a quick contest during the event, for example in cooperation with event partners.

If you want to be more classical, just go with a traditional concept: a grand prize to be drawn after the event from among all event participants. This, too, always works.
In quizzes and contests, only your mind is the limit. And fairness of course. You should also discuss the goals of the competitions with others such as partners or sponsors. It's very often that the best ideas come from there actually. You shouldn't invent everything by yourself - use your network.

Offer something for free

Make virtual giveaways from sponsors or exhibitors for example. This is also one form that is very popular for attendees because people go crazy for free stuff. In virtual events, different kinds of digital products or content are the best, as it does not break down the cash flow of the event as badly as physical products. Even with this option, I never tire of repeating myself: use partners, talk with sponsors and with your network. Come up with something inspiring. How about a free lunch delivered right to the attendees' door in cooperation with a food delivery partner? That has already been used for a while in some way, but free things and also free meals lower the participation threshold and make participants satisfied and involved.

And even if your virtual platform does not offer obvious virtual giveaway possibilities, come up with your own idea. Search for different apps and don't be afraid of trying something new. Everything new and interesting will also be inspiring to participants as long as the idea works. As you know, word goes from mouth to mouth and you should never underestimate the power of the grapevine (or, as we say in Finnish, puskaradio).

Q&As

This always causes reactions for and against. Some people like it, some people do not. Live Q&As can be memorable, instructive and entertaining when done well. They can, however, be the weakest part of a show or presentation at their worst.

My advice - and opinion - is that if you keep it short and moderated, it can be a very good and inspiring idea for involving participants during the event. By moderated, I mean: do not let the questions go off-topic. Because that is boring and does not bring any benefit to anyone. So, in a nutshell if you use a Q&A session, then be careful to set a certain amount of time for it. Do not use it in every presentation, only in a few.

Chat

This is almost the default value in all virtual productions, whatever the format. I believe that chat is no longer worth leaving out from productions today, as it offers an absolutely insanely low threshold for being involved in an event. Offering emojis and thumbs up icons is secondary, but virtual communication without sound is what the Internet is originally made of and that really is the assumption in all productions. I say this because I have heard many times in discussions that there is no longer a need for chat these days if there are other options available for involvement and communication. Many people argue that chat is a big burden at events, especially if it needs to be moderated.

I wouldn't be so radical with this. Try creating an event without the option of chat and ask for feedback. After you have read it, I don't think you'll make the same mistake a second time. So, keep the chat option open, whether moderated or not.

Networking; such as 1-2-1s, live discussions and round tables

Attending virtual networking events allows participants to meet and network with inspirational business influencers, speakers, attendees and partners while also learning about the latest trends. With virtual events, networking has been made easy and hassle-free with a few clicks. This is mostly because networking in virtual events is moving towards an even more profiled model - in addition to registering, participants are asked for more information about their interests, their own skills, future perspectives and work tasks. These profiles are valuable for searching and connecting people better.

Networking in events definitely offers fresh ideas and new perspectives for everyone and is a good way of involving participants with others.

There are a few ways to get people networking in virtual events. The most common are 1-2-1 meetings and live discussions such as panels and round table talks. Usually, networking in events is built around these three. If the event platform does not offer these, there are a lot of other options and applications for these today. As a hint: Brella may be a safe bet, but you should check out the others as well, depending on your needs and budget.

Push notifications

As a smartphone owner, you may have noticed these are a great way to get customer attention. Push notifications are increasingly being used in virtual events as well. It's a great, fast, and smart way to communicate to a participant about, for example, a new 1-2-1 contact, a presentation that is about to begin, a panel discussion, polls, journeys, or whatever. But keep in mind that less is better. Excessive communication is often perceived as disruptive even if you mean well and want to be informative. However, with notifications, you will be able to maintain interest and share important information and, most importantly of all, be present to participants. Or at least you try to be, until they turn off the notifications. That option should always be available.

Recording and replays

Like I mentioned earlier, recording gives a significant benefit to the participants and the event organizer. Besides that, by providing a recording, you give the participants a feeling that during this event, nothing is left unheard or seen - and if they do happen to miss something, they can view the recording afterwards. This is a big deal that often influences my buying decision, for example - that is, what I have left in my hand after the event. A great benefit from every angle, I would say. I have often returned to a good and high-quality recording later, to look at a few parts that had got me thinking or when, due to the schedule, I had not had time to hear all the performers.

Another big advantage of recordings is that you can later cut event highlights from the recording for marketing purposes, for example. If you don't have any recording, then you simply can't do this and do not have any video materials from the event.
So, offering a replay is a great benefit from every angle. If you have any chance, always record the event but do ask permission from the presenters beforehand. That's important so that you do not get into trouble later.

Social media hype

This format is the most modern and perhaps even the most challenging, as hype is not easy to create. It's worth a try, though, as people usually share and comment on interesting content, especially if it's about an event they're attending.

Here are my few tips for trying to hype the event in social media:

- One great way to get people involved in your virtual event is to create a hashtag for it before the event. Then you'll be able to monitor how guests are interacting with your hashtag and event in this way. The good thing with hashtags is that they live forever, so you'll be able to check the results whenever you want. Hashtags also work as a silent marketing well after the event.

- Create private groups on Facebook or Linkedin and invite participants. This way you'll be able to make your brand, your idea and your whole event more familiar for them. This is a great way to tell people about the event, the partners and the agenda and to get direct feedback from real participants.

- Make networking rounds on Facebook or Linkedin. As soon as your event starts, make a post and direct participants there to connect and network with each other.

After all, a quality virtual event, quality content, and a topical agenda are primarily why attendees attend events. Involving and engaging is a bonus and it's good to focus on them, but you should still not forget the main principle, goals and idea of the event.

First, start planning a killer idea for the event agenda, get speakers and partners, and then focus on engagement and how to involve the customer and convince them to make a purchase decision for your event rather than your competitor's.

CHAPTER 5.

THE SOCIAL, TECHNOLOGICAL AND COMMERCIAL EXPERIENCES IN VIRTUAL EVENTS.
AN OBSERVATIONAL STUDY.

Laura-Maija Hero

Today, virtual events in the form of interactive streamings, webinars, Zoom, tailor-made online platform events and virtual reality events have become mainstream due to the pandemic and the steep learning curve of the event producers. There is still limited research available concerning the virtual event experience. However, a strong tradition of event experience research in physical events can help us start shedding light on virtual experiences. Major research themes related to the event experience are: the social dimension of events, event design, visitor engagement, eventful cities and event networks and platforms (Biaett & Richards 2020). This offers a wide spectrum of theoretical background to lean on in virtual event studies. However, the nature of virtual event experiences may differ considerably from physical events. By observing a virtual event, we may identify the distinctive factors and special characteristics of virtual events. In the Vevent project, we conducted an observational study on seven virtual events. In this chapter the social, technological and commercial sides of the virtual events are discussed.

Virtual event experience scales

There are many ways to approach the event experience. Events are fundamentally social constructions, situated within international, national, regional, organisational and tribal cultures and subcultures. They play a central role in the functioning of societies and the myriad groups that comprise them (Bowdin, Allen, O'Toole & Harris 2011; Jaimangal-Jones 2014). The studies of Pine and Gilmore (1998, 1999), related to the experience economy, were fundamental in the realization of the powerful nature of experiences. This power was also recognized in the events industry, first in events marketing and later in studies of cultural and commercial events such as festivals, concerts, fairs and conferences.

Framed by participation (passive–active) and the consumer's relation to the context (absorption–immersion), Pine and Gilmore (1999) framed dimensions of the experience: entertainment, education, aesthetics, and escapism. This view offers an instrumental perspective in relation to the marketing potential of the experience, which has been harder to apply in cultural event contexts (cf. Marques, Borba & Michael 2021). The event experience is also co-created from event attendee-to-attendee. This co-creation leads to an increasingly valued event experience because it is a shared moment, as seen in music festivals (Rihova, Buhalis, Gouthro & Moital 2018) and carnivals (Marques et al. 2021). Rihova (2013) proposed a shared social experience framework for value creation based on six co-creation practices: Belonging, bonding, detaching, communing, connecting, and amiability. Marques et al. (2021) have recognized the social nature of cultural events and proposed an event social interaction scale (ESIS). ESIS scale is based on 1) Co-creation practices like Belonging, Bonding, Detaching, Communing, Connecting, Amiability; and 2) Known-group interaction rituals like Group rituals and Symbolic moments.

Kharouf, Biscaia, Garcia-Perez & Hickman (2020) examined virtual event experiences and their effects on attendees' behavioural intentions in mega events. They found that content engagement online and effective communication influence attendees' virtual event experience and positively affect their behavioural intentions towards the event. The social side, ie. the online attendee-to-attendee interaction, also showed a positive effect on attendees. Wreford, Williams & Ferdinand (2019) sought to identify the gratifications obtained by viewers of VR content by comparing a user's perceived experience of a real-world event to a 360° VR simulation of an event type that they had previously attended. Wreford et al. (2019) found that VR provides emotional gratifications that may build positive associations with event organizations and brands. This refers to the possible impact of the commercial realms of the event. When we focus on technology-supported virtual events like streaming events, online, webinars or VR events, the experience is affected by the technological aspects. In addition, the commercial services, sponsors, ticketing, in-event purchases may have an effect on the experience even in cultural events. To conclude, there is little qualitative research available on social, commercial and technological experiences in virtual events, but an opportunity to study them as the previous literature gives some guidance on the effect factors.

There have also been some methodological learnings about the observation technique. In our first observational study on virtual event experiences, we focused on just one

VR event and used tens of observers (Hero and Saarinen 2022). We used the event experience scale (EES, De Geus, Richards & Toepoel 2016) as an observation framework and its well-defined event experience factors. The scale offered a structured and holistic approach to personal experiences and consisted of four realms: Cognitive engagement, affective engagement, physical engagement and novelty. However, this scale only partially addressed the social, technological and commercial sides of the experience. Based on this gap, we decided to conduct a broader, but still more focused ethnographic study by observation that included n=7 events and only n=5 observers in total. To conclude, the aim of this study was to understand the social, technological and commercial sides of the virtual event experience to help the event organizers design and produce better quality and more audience-friendly virtual events. This chapter summarizes the findings of this study.

Method

The challenges facing ethnographic projects studying event audiences include e.g. identifying opportunities for observation and participation and recruiting participants (Jaimangal-Jones 2014). For us, the optimal research conditions were quite easy to set up. We used participatory observation in data collection. We had the opportunity to involve student observers who had some experience in event production and were eager to dig deeper into virtual events. Their observations of feelings and experiences offer us structured visibility to the contemporary virtual event experiences. So, thank you great observers! (Hoikkala et al., 2021.)

Observation allows, among other things, access to the natural environments of events. It can be used as an independent method or as a supplement to, for example, a survey and an interview. N=5 observers with basic knowledge of and know-how in event production based on their cultural management studies were recruited. Participatory observation was a suitable method of obtaining information, as the observers were unfamiliar with the topic and the aim was to gather information about the experience itself. The role of the observers was participatory, but still objective. They participated in the events with the aim of observing, but in an active role, participating in the actions the events offered. The event organizers did not know about the observation or its purpose. The observers were treated as natural members of the event. (Tuomi & Sarajärvi 2018.)

Context and material

N=7 virtual events were observed between 20.10.2021 - 5.12.2021. Three of the events were held in 2D environments and four in 3D environment. All events were accessed with computers and handheld devices. The observers chose the events by discussing the options in their group and choosing those that they were able to attend during the time frame given to the group (Hoikkala et al., 2021). While the group also observed games and physical events, we included only virtual events in this study. The inclusion criteria were that the event was virtual and "an event" by definition. Games were not seen as events. The events chosen were:

ENCATC Digital Congress 2021
Cultural production umbrella organization. A professional event for actors in the field, focusing on cultural production and cultural policy. International.

Match XR 2021 virtual industry event
The largest Nordic XR event organized by Finland, where the program includes panel discussions and presentations. International.

Artio virtual art gallery
Artio brings art to your pocket. The world's largest virtual art gallery, found in the App Store or Play Store. The art gallery displays works by dozens of Finnish artists. With the help of the application, it is possible to "fit" the works to your own home wall and to buy them. International.

Kässämessut 2021 online fair
Christmas craft fair online. Kässämessut Online is Finland's first and largest virtual trade fair event in the handicraft industry. It brings together Finnish handicrafts, products made in Finland and materials and supplies for the seventh time in the virtual exhibition hall. There are hundreds of craft businesses and a full weekend program. Domestic.

Queen virtual concert
Queen's virtual concert on the AltspaceVR event platform. International.

Take Back The Nights virtual festival
Take Back The Nights is a Singapore-based virtual festival held on the event's own virtual gaming platform. There were various local performers at the VR event and it was possible to participate in the event for free from anywhere in the world with your own game character. International.

Justin Bieber - The show must go beyond virtual concert
An interactive virtual experience. Justin Bieber's virtual free concert was held on the Wave Watch platform. Anyone with a working internet connection could participate in the event. The gig was streamed live in a virtual world and viewers had the opportunity to interact with Justin Bieber during the gig. International.

There were five observers in total. The observation was conducted in smaller "teams" to allow for discussions and help with technical problems in the most complex events. (Table 1). The observation hours were dependent on the time of the events, from 2 to 12 hours per event.

Table 1: Virtual events, their digital platforms and number of observers (Hoikkala et al., 2021).

Virtual event	Event platform	Number of observers n=
ENCATC Digital Congress	Zoom	3
Take Back the Nights music festival	3D platform on event web site	3
Match XR Professional conference	AltspaceVR & You Tube	4
Queen VR Concert	AltspaceVR	1
Artio virtual art gallery	Mobile application	3
Kässämessut craft fair	Facebook	4
Justin Bieber virtual live concert	Wave online event platform	3D

Here the event experience was understood to comprise the experience before, during and after the event (cf. Richards et al., 2020). The observation was conducted before, during and after the event by observing also the coverage of the website, ticketing, instructions and various information channels. As observation should be systematic (Tuomi & Sarajärvi 2018), the objects of observation were determined in advance based on the gaps in previous research and tailored to virtual experiences. A predefined observation framework was used. The framework consisted of three main themes: social, technological and commercial sides of the virtual event experience:

Social experience

Commercial experience

Technical experience

The observations obtained were documented immediately after the event, in a structured observation diary. The analysis was conducted by thematizing the material in each of the main categories by reading the written observations, coding the typical features stated and by organizing them into new content-driven lower categories.

Findings

Social experience
At events, the observers strove to observe customer behaviour, such as customer expressions, gestures, and comments during events. They found that in most events, behaviour was quite difficult to detect and in some even impossible because interactive activity was very limited or non-existent. In many events, the only means of communi-

cation with visitors was chat, but there was little discussion and mainly questions and messages of thanks to the performers. In events aimed at professionals in the field, such as Match XR, participation in the debate was very limited. However, the comments were positive. Among the events, there were also those where interactivity played a bigger role. E.g. Justin Bieber's virtual gig included much interactivity. Bieber fans commented actively in the chat during the show and the enthusiastic and happy faces of some of the fans were seen via webcam. The observers felt that in virtual events people may even be afraid and shy to communicate with others, even if there is an opportunity to interact (Hoikkala et al., 2021).

> *During the gig, a few fans, who had apparently won or been drawn, were shown via webcam. I understood from the gig's speaker that they may not have paid to get to the gig via webcam. So their faces always appeared randomly during the gig in the background, but they couldn't communicate with Justin Bieber just like that. (*observer, Justin Bieber concert)

> *At the gig, it was possible to communicate with other fans in the chat, but the chat went so fast due to the flood of messages that it didn't really get me involved. So, the comments were hard to follow, but most of them seemed like enthusiastic fans. The good thing was that the opportunity to write the same thing in a row had been removed in the chat. This avoided spam.* (observer, Justin Bieber concert)

The Singapore music festival Take Back The Nights was also seen as an interesting and refreshing entity. If the performers were better known, the observers felt that the festival would grow to become a great experience. However, it would require that the event was further developed e.g. it should be possible to communicate with other festival guests (Hoikkala et al., 2021).
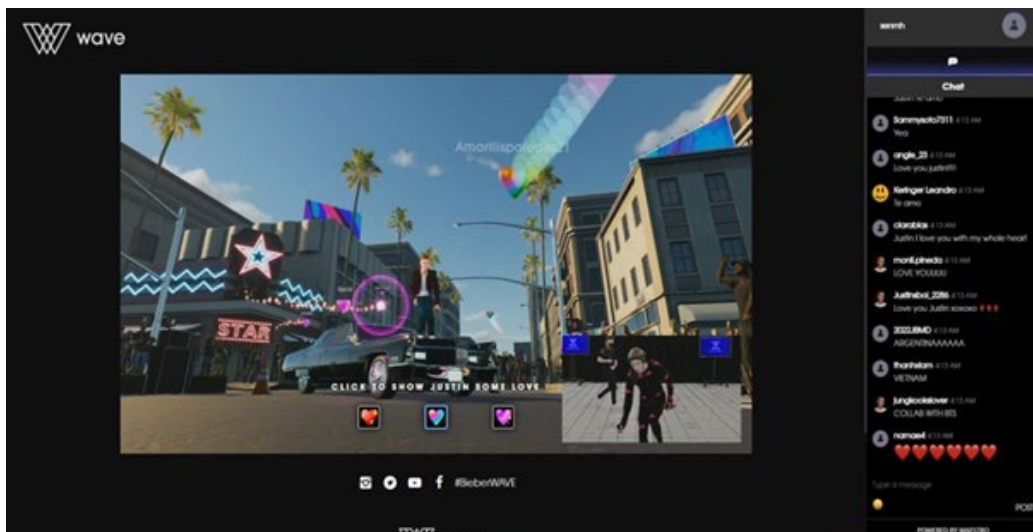

Image 1: In Justin Bieber's gig the attendees were able to interact with other fans, but also with the artist himself. (Justin Bieber - An Interactive Virtual Experience, 2021). Photo: Senja Rapila.

Image 2: The virtual festival Take Back The Nights 2021 as a whole was described as "a spectacular event". Photo: Senja Rapila.

In many events, a sense of community was very strongly present. In Justin Bieber's concert, for example, the spirit of the event was relaxed and communal. Fans were allowed to chat during the gig, and Bieber picked up occasional comments during the interludes. At the virtual Kässämessut, as well, the sense of community was strengthened by the visitors' joint chat conversations. The observers felt the lack of this opportunity at the virtual festival Take Back The Nights, where there was no opportunity to communicate with other visitors. There was no sense of community in the virtual art gallery Artio, as the artworks in the gallery were offered as an individual and independent experience via the viewers' own personal smart devices. The observers did not miss the community feel at the gallery, as its main idea is to view works of art and the observers did do not need interaction with other visitors to support this. The Encatc focused on content and learning, but there was still some interaction.

> *Lessons were learned: European cultural policy, the funding of the arts and culture, and the impact of the corona on the sector and freelancers in particular. Formal, speakers speak and viewers listen. Conversation smooth and fruitful.* (observer, Encatc virtual conference)

As only two senses, sight and hearing, are used in virtual events, the focus should be on these when planning the event. Knowing the target group increases the number of participants and their commitment - they want to participate in similar events again and the possibility of dropping out decreases.

Image 3: There was an opportunity to play and compete in real time with other participants in Take Back the Nights 2021. Photo: Katriina Hoikkala.

Technical experience

In terms of technical implementation, the majority of the virtual events observed were on platforms that were easy and smooth to use. In most events, some problems occurred. Of all the platforms observed, AltspaceVR in particular was quite difficult to use and the observers had the most problems with it. The Queen Concert and Match XR were both run on the AltspaceVR platform, and the problem was logging in with a Gmail email address and a Mac. In Match XR, alongside AltspaceVR, the event could also be watched on YouTube, which partially saved one participants' experience. It is therefore a good idea to be aware of possible technical problems with some platforms and to take another platform that is more reliable. E.g. one observer could not even attend one event (Queen Concert) due to technical problems. At the Queen concert, attendance was completely unsuccessful, as the observer did not have Microsoft IDs and was not eligible to attend despite attempts. As observer expectations were high, the experience was lacking in many ways.
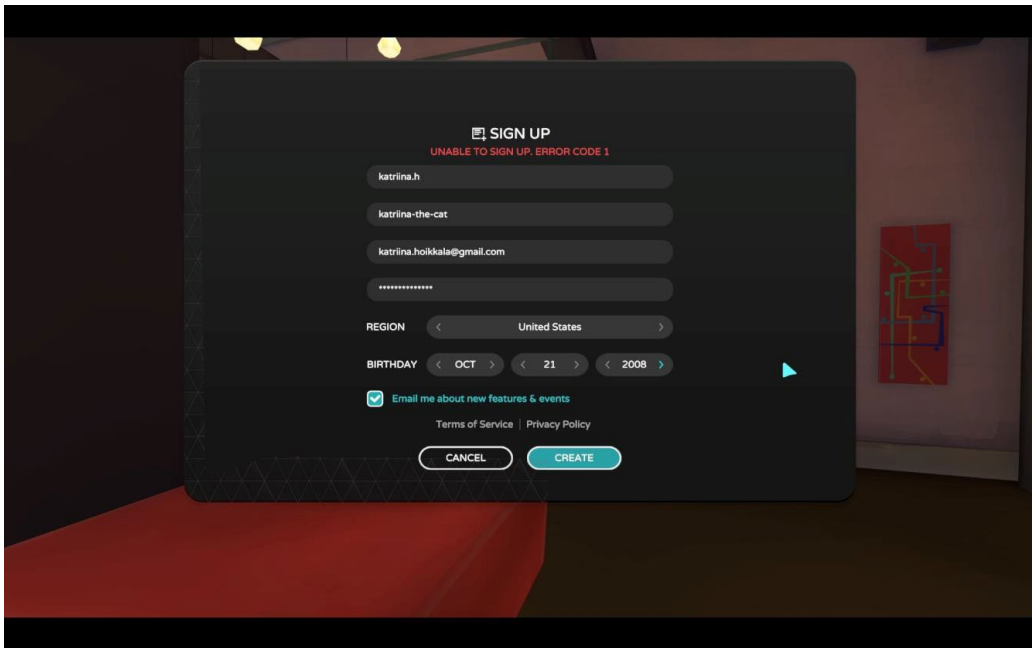
Image 4: The participant experience was weakened by the fact that the event page was not accessible at all due to registration problems with Mac on the AltVR platform. (Queen Concert 2021; Match XR 2021).

Otherwise, the technical problems in the events were small and there were only slight breaks due to internet connections, which did not affect the participants' experience too much. The problems were quickly addressed on behalf of the organizing organization. For example, when technical problems emerged in Take Back the Nights, quick and easy help was obtained through the event's own Discord channel, where you could contact technical support via chat.

While the visual appearance of the Artio Art Gallery was bland, at Justin Bieber's gig and at the Take Back the Nights festival a lot was invested in the visual excellency. The visual expressions of the events were varied, from very modern (Take Back the Nights) to ordinary (Encatc). Investing in visuals has a big impact on the user experience, and in some events the observers were very impressed with how great the virtual environments were.

In the observers' experience, accessibility was seldom taken into account in any of the events that were attended. In only one event (Match XR), were some of the pre-recorded seminars subtitled. There was no sign language interpreter, for example, at any of the events.

The observers stated that accessibility should be significantly increased in virtual events to make them accessible to all. Internet access and other technical issues may be more difficult to influence, but, for example, sign language interpretation, subtitles, plain language and the option to have the event read aloud are all necessary things that are neglected at present in virtual events or games.

The commercial experience

According to the observers, the commercial experience related to costs, virtual purchase opportunities, external brands and sponsors and value for money.

Costs

The costs were low to the observers. Based on the findings, almost all events – even paid events – had a free participation option. Free participation became possible when partners, exhibitors, in-house purchases, or commercial interests in the platform funded the event production.

> *I would say that, at the moment, the main purpose of the Wave platform is to gain visibility and through that potential future communities that will later bring in earnings. For this reason, gigs, even the gigs of pretty big artists (The Weeknd, Pentakill, John Legend ...), are free for consumers. Of course, the Wave platform has paid the artists decent sums for performing on the platform, but this is not visible to consumers.* (observer, Justin Bieber)

> *There are exhibitors at the event who have purchased a venue for the event. There are three different sizes of packages for exhibitors to choose from. Prices: 99e, 149e and 299e. That is, in practice, that the event sells visibility to different companies in their event.* (observer, Fair)

> *Registration with Artio and presentation of works of art is free of charge (the normal registration fee for gallerists is € 99.00 and the maintenance fee is € 42.00 / month). In addition, the presentation of art loan shops and gallerists' art exhibitions to their own followers is free of charge. The commission charged by Artio for the sale of non-new works sold from its own collection is 10% of the turnover from the sale of works. If you want your book to be at the top of the search results worldwide, the commission on that work sold on Artio is 15 percentage points higher than the normal fee. Advertising for ancillary activities (frame shop activities, art supplies sales, etc.) that may be carried out by the collector will be priced separately according to the agreement.* (observer, Artio Virtual gallery)

> *The participation fee was reasonable in relation to the content provided. The festival itself was free, but with 13.71 euros it was possible to move from place to place much faster and easier, for example between festival stages.* (observer, TBNT)

> *Free event, requires registration at Eventbite. Sponsors can be seen, for example, in the lobby, Business Finland, Tampere game hub, Metropolia, Helsinki XR center.* (observer, Match XR)

Virtual purchase opportunities

There were many virtual purchase options in the observed events to enhance the experience. You could buy VIP packages or extra services and products or, boost the visitor experience with virtual activity features. Some of the events did not offer any upgrades or purchases, e.g. both the conference type of professional events Match XR and Encatc.

The ticket was free, but for € 10 and € 20 you received improvements and add-ons to the virtual world, the VIP package for around € 400 included drinks, add-ons, products and their delivery home. (observer, TBNT)

In the event, while you wander around, you hear announcements, e.g. a treasure hunt where the finder gets a code to get a discount on purchases or sponsor points. (observer, TBNT)

Add-ons are clearly created to facilitate the user experience and at the same time provide an additional means of access that makes it easier to get from one place to another. For example, an aerial pass, or flying, made it really easier to get around. The same ticket also allowed me to travel on the "train," which I didn't think was such a special experience. Rather, it pays to fly, which really makes it easy to get to one place and another. Maybe there could have been some activity or music on the train that would have made it a better experience. (observer, TBNT)

External brands and sponsors

Most of the events offered space and functions for advertisers and partner brands. There were also clear sponsors, but the collaboration deals were not explained. The brands that were the most visible were Red bull and Booze hub (TBNT). The sponsors and companies had their own virtual rooms and booths, holographic art and ads all around the virtual world(Match XR, TBNT).

The observers felt that there was a clear product placement in the events, which the observers said could influence purchasing decisions.

Is the co-operation openly communicated? Yes, e.g., games where you collect codes to get a discount on sponsorship purchases. (observer, TBNT)

Redbull was a really big sponsor. A big Redbull can in the middle of the event, also the product information clearly readable if you went close enough. The Scavenger hunt in the Redbull area where you had to find various "dots" with words. At each point, a hint to the next. When you get everything, you get someone a coupon for Redbull products. (observer, TBNT)

Sponsor logos, drinks by panelists and speakers for Novelle and Laitila Wirvoitusjuomateh-das, venue Helsinki XR center. (observer, Match XR)

Value for the money

The observers felt, that they had received value for money at Bieber's concert. On the other hand, the question is poorly worded: the visitor has to give permission to adver-tise for himself, and is exposed to advertising and brands at the event. Of course, the event organizer has to reimburse the visitor for this. It may bother some, but in our cases the brands and sponsors seemed to add value to the experience.

I got the value I wanted for the money, definitely. From the beginning, there was a feeling that this was a scam, as he got to listen to Justin Bieber's (such a great artist) gig live. I think even the biggest fans would feel like they got value for money, even if they had to pay 20-30 euros for it. (observer, Justin Bieber)

Discussion and conclusions

Virtual events have a strong future if resources are used to develop them. In conducting the observation with our five observers, we realized that it is worth investing in the virtual world of events both functionally and visually. These features make an immediate impression on the visitor, enhancing the experience and comfort of the participants. This makes it more likely that the visitor will recommend the event in question and similar events to their friends and re-attend. The technical functionality of the event as well as the striking visual appearance play an important role alongside content, even if a fee is to be charged for participating in the event. The VR platform events certainly build emotional gratification with brands and the event producer organization. The observers did not express irritation, nor any negative comments on the commercial side of the event as the ticket was free. In this sense our observations support the findings of Wreford et al. (2019), who also found that VR provides emotional gratifications that may build positive associations with event organizations and brands.

Although free virtual events may seem more attractive, especially to customers who have not previously attended events of the same type, event organizers should consider introducing a participation fee for their own event, for participants who do not want advertising. In addition, in some cases, it may be better to charge a moderate participation fee for the event, as this may better engage the visitor. If the visitor pays the participation fee, he is more likely to participate in the event. If there is no participation fee, the visitor can register for the event, but - having paid nothing – may end up not participating. Technical problems are also likely to be addressed more quickly in paid transactions, although payment does not guarantee that there will be no technical problems.

When the business logic was observed, the observers found that the pay-per-view form of payment that emerged through the theory had not been utilized in any of the games or events. It would be interesting for future events to use the pay-per-view feature more boldly. In this case, the participant can customize the content of the event to their liking. For example, if there are only two interesting panel discussions in the program, the participant only pays to participate in these two panel discussions. This came to the fore, for example, at the ENCATC event, where a four-day ticket cost € 80 and some programs were more interesting than others. As the observers were able to attend only two days of the event, the ticket price felt high.

It is also good to keep in mind when planning virtual events that wider opportunities for interactive activities improve the participants' experience and increase the sense of community. To conclude, the social side, i.e. the online attendee-to-attendee interaction, also showed a positive effect on attendees in our study, consistent with Kharouf et al. (2020). In many events, opportunities to communicate with other participants were few or very limited. Versatile but easy-to-use ways to communicate with others are something the organizer should invest in. Virtual events are still a fairly recent phenomenon, so visitors may not be able or willing to take advantage of opportunities to communicate with other visitors in the same way as at live events. Stereotypically, Finns are shy to talk to strangers anyway, and in the virtual world this may be emphasized. However,

the active facilitation of participatory activities and interaction would make the event more experiential.

Attention to accessibility is clearly low in virtual events. Event organizers should consider whether, for example, subtitles, interpretations, plain text or reading aloud would add value to the event. In marketing, it is also worth paying special attention to informing the consumer in good time what equipment is needed in order to participate in the virtual event, whether there are alternative ways to participate and where problems might appear, for example during the subscription phase. A FAQ (Frequently Asked Questions) section embedded in the website could help in this situation, and prevent event support becoming congested during the event. There were technical issues with almost all of the events, and there were a lot of them, especially on certain platforms. The more features the platform has, the more potential stumbling blocks there may be. The organizer should always be prepared for technical difficulties and, for example, take another simpler possible participation platform alongside the actual platform, as was done in Match XR. The organizer should also invest in the number of staff and their skills so that there are enough skilled staff to deal with technical difficulties (Hoikkala et al., 2021).

Now it is your turn to visit a virtual event!
Observe your experiences with this COCOTE tool!

Community experience

Audience behaviour
Participant interaction
Event spirit and atmosphere

Commercial experience

Costs
Virtual purchase opportunities
External brands and sponsors
Value for the money

Technical experience

Participation smoothness
Ease of use of the virtual
platform
Accessibility
Technical problems and their
solving

References

Biaett, Vernon & Richards, Greg 2020. Event experiences: measurement and meaning, Journal of Policy Research in Tourism, Leisure and Events 12(3), 277-292, DOI: 10.1080/19407963.2020.1820146

Bowdin, Glenn & Allen, Johnny & O'Toole, William & Harris, Rob 2011. Events Management, 3rd ed., Elsevier Butterworth-Heinemann, Oxford.

De Geus, Sjanett & Richards, Greg & Toepoel, Vera 2016. Conceptualisation and operationalisation of event and festival experiences: Creation of an Event Experience Scale, Scandinavian Journal of Hospitality and Tourism 16, 3/2016, 274-296, DOI: 10.1080/15022250.2015.1101933

Hero, Laura-Maija & Saarinen, Santeri 2022. Participants' event experience in a VR event venue. An observational case study. Manuscript.

Hoikkala, Katriina & Impivaara, Tiia & Numminen, Lennu-Kalle & Pernu, Mira & Rapila, Senja & Virtanen, Nora 2021. Raportti. Ansaintalogiikka ja osallistujakokemus virtuaalimaailmassa. Unpublished report.

Jaimangal-Jones, Dewi 2014. Utilising ethnography and participant observation in festival and event research. International Journal of Event and Festival Management 5(1), 39–55. https://doi.org/10.1108/IJEFM-09-2012-0030

Kharouf, Husni & Biscaia, Rui & Garcia-Perez, Alexeis & Hickman, Ellie 2020. Understanding online event experience: The importance of communication, engagement and interaction. Journal of Business Research 121, 735-746. https://doi.org/10.1016/j.jbusres.2019.12.037.

Marques, Lenia & Borba, Carla & Michael, Janna 2021. Grasping the social dimensions of event experiences: Introducing the Event Social Interaction Scale (ESIS). Event Management, 25(1), pp. 9-26(18). 6 https://doi.org/10.3727/152599520X15894679115448

Pine, B. Joseph & Gilmore, James H. 1998. Welcome to the experience economy. Harvard Business Review, July–August, 97–105.

Pine, B. Joseph & Gilmore, James H. 1999. The experience economy: Work is theatre & every business a stage. Harvard Business School Press.

Richards, Greg 2020. Measuring the dimensions of event experiences: Applying the Event Experience Scale to cultural events, Journal of Policy Research in Tourism, Leisure and Events 12, 3/2020, 422-436. DOI: 10.1080/19407963.2019.1701800

Rihova, Ivana & Buhalis, Dimitrios & Gouthro, Mary & Moital, Miguel 2018. Customer-to-customer co-creation practices in tourism: Lessons from customer-dominant logic. Tourism Management 67, 362–375.

Tuomi, Jouni & Sarajärvi, Anneli 2018. Laadullinen tutkimus ja sisällönanalyysi [Qualitative research and content analysis]. Helsinki: Tammi.

Wreford, Olivia & Williams, Nigel L. & Ferdinand, Nicole 2019. Together alone: An Exploration of the virtual event Experience. Event Management 23(4-5), 721-732. Https://Doi.Org/10.3727/152599519x15506259855625

CHAPTER 6.
CASE STUDY SOUND EXPERIENCE BY ARCADA

Maria Bäck

In 2020, the world was struck by the pandemic and all the digital strategies and platforms were suddenly part of our reality. In almost every part of society we were forced to move to digital surroundings, in education and in the arts just to mention the two most relevant for Arcada UAS. All over the globe, we were stuck on our sofas following - as well as we could - lectures, seminars and also theatre, arts exhibitions and even concerts and festivals. But what did this mean for the Creative Sector and for us educators? The digital solutions were there but the knowledge on how to use them effectively was not sufficient. This chapter is a snapshot of what we at Arcada learned about event management, working as educators and about the importance of supervision and monitoring for student projects. It is also the author's own take on the process and focuses on contracts in the pilot that Arcada was involved in during the ESF project Vevent.

Event management and competences taught

at Arcada's Cultural Management program

The focus for first-year Cultural Management students at Arcada is Event Management. Over several courses, we teach and facilitate the competences needed to successfully manage and produce events. This continues throughout the student's educational journey because many of the general competences taught are also of great importance when producing an event.

First, what is an event? Amongst professionals in the Creative sector, we are not talking about natural phenomena such as earthquakes, but rather about planned gatherings

with a purpose, which also aim to be memorable and special. Events are also temporary (Dowson & Basset 2018, 12). The event is planned in advance and the audience (target group) is defined. An event should also be an experience and interactive (Vallo & Häyrinen 2008, 20). This brings us back to the introduction: the whole industry was put on hold and had to find new ways because of the pandemic. It also put a strain on us educators; how were we to teach the relevant competences for future events online? The whole scope of events is shifting, as is the planning process, because events - once defined by time and physical place - have now moved to the digital world.

In the literature, you can find many checklists for event management and they can be compared to project management literature. Some of the most common topics mentioned are responsibility, content, and target group.

The planning stage of an event can be divided in two major strands according to Vallo & Häyrinen (2008): strategic issues and operational issues.

The strategical questions that are to be answered are:
- Why is the event arranged? (Goal)
- For whom is it arranged? (Target group)
- Why is it arranged? (Character of the event)

The operational questions are the following:
- How is the event being arranged? (This is a process, project plan)
- What kind of event is it? (Content)
- Who is the host? (Ownership)

These different stages also represent the competences taught at the program for Cultural managers at Arcada. The strategic questions, for instance, are taught in courses in marketing where the students learn about target groups, how to define content and build a brand. The goal for the event can be of different kinds and can also be found in courses on Cultural policy and Cultural Economy. Ownership and the process are issues addressed in courses like Copyright and of course the most essential course in our events curricula, Event Management.

The case studies and the literature mainly deal with physical events and the planning process must shift scope when developing an event that will take place digitally. There is the chance to reach a larger audience and, as an event manager, you are not bound by place nor time.

Sound Experience Arcada's pilot

Virtual event management is being developed at a rapid pace, both due to the situation of the pandemic and because of the development of technology. This project is an exciting part of the knowledge creation and the pilots during the period are an essential part of the process. The pilot Arcada administered is described in other parts of the handbook, but, in short, it was a digitally produced art piece as part of a physical event, the

Superwood festival (see chapters Introduction to virtual event production and Costs of creating virtual event experiences).

Personally, I was only partly involved in the project and can only report on the parts where my involvement was of a more direct kind. The pilot was arranged as a one-off course for more experienced students. They already (in theory) possessed the competences needed to work independently with a complex project, such as the pilot Arcada was involved with. The course was planned during the winter of 2021 and started off with a rigid planning period where the students worked with all the project and event management tools they had learned about in previous courses and during their internships. As the pilot for Arcada, the Superwood festival was held in early October 2021 and the festival organising team had not wanted to arrange a virtual event, the project group from Arcada designed a digital element for the festival. The festival's creative director, Paola Suhonen, negotiated with our team a concept that was adaptable to the festival with as little effort as possible on their part due both to lack a of resources – the festival had already been postponed once from 2020 to 2021 – and to the size of the boutique festival.

The first part of the project, as mentioned above, was about planning digital content in line with the Superwood festival. This part of the project resulted in the Sound Experience, involving Helsinki Writers Group, a creative community with members writing in English (https://www.helsinkiwriters.com) Five authors who were part of the community were commissioned to be part of the Sound Experience. The sound design for the experience was to be made by a former Arcada student, Nicolas Lehtola, who is an established sound designer.

The Sound Experience is a digital artwork that could also be used in promoting the festival even though the texts and the ambient sound were designed to fit the physical place and the theme of the festival.

Copyright and contracts

The second part of the pilot took part during autumn 2021 and involved the execution stage of the project. This meant recording the writers as they read their texts aloud and compiling the five recordings into one 17-minute-long artistic product, the Sound Experience. This is where the actual learning journey for us started. Most literature about event management scarcely mentions copyright or agreements, you have to dig deeper into project management literature, if even that.

An event in itself is not protected by copyright, an idea cannot be protected, but some of the content or program during the event might be: a theatre play or music, for instance. The name of an event can be protected by registering the name as a trade name or a trademark (Valo & Häyrinen 2008, 73). At this level, you can find mentions about legal matters in many handbooks about event management, you might even find short passages about permits but there is hardly ever anything about agreements or copyright legislation. This shortcoming was obvious as we at Arcada moved to the second part of

the project. The project group had not negotiated with the artists (five authors and a sound designer) about copyright issues and the practicalities of payment. Even though they had all, during their second year, attended a course in copyright including some contract law, there was not even a draft of an agreement in place.

Now we started a rapid communication with the students who oversaw communication with the artists about the content of the agreements (Toolbox #8). The contracts had to include the parties involved in the agreement, the copyright issues agreed on and payment. We kept the contracts as simple as possible, still including all the necessary data. During the process of drafting the contracts, I also involved the University's lawyer, Ms Anna Härmä, in reviewing the organization's own contracts.

Lessons for the future

For me, as an educator and in charge of the curricula for Cultural Managers at Arcada, I learned a great deal. First, even though we have a very ambitious study plan developed in cooperation with colleagues from different countries and with the cultural sector, students may not be aware of the holistic take on the learning path. We have courses covering key competences, but these must be pieced together so the future professionals see the whole picture. Each and every one of the competences they gain during their studies are pieces in a puzzle and the picture is changing as time evolves. Secondly, we cannot emphasize enough the importance of a legal body able to make contracts with the parties involved about i.e copyright issues and money. The third lesson learned during this journey is that developing a holistic view of complex processes needs some experience and the presence of a supervisor is of great importance. Lastly, trust amongst colleagues and a great team is an advantage. We also have social trust as a recourse in the Nordic countries and because of that we could, during this project, be late negotiating the agreements with the artists and still come out as professionals.

References

Dowson, Ruth & Bassett, David 2018. Event Planning and Management. 2nd ed. Kogan Page. Retrieved 6.3.2022. https://www.perlego.com/book/1589345/event-planning-and-management-pdf

Vallo, Helena & Häyrinen Eija 2008. Tapahtuma on tilaisuus. Tapahtumamarkkinointi ja tapahtuman järjestäminen. 2nd ed. Tietosanoma.

TOOLBOX 8.
AGREEMENT FORM (ARCADA)

CONTRACT

Between the parties

Organization: (hereafter "organization name")
Address
Business ID:

and

Author's name (hereafter "Author"):
Date of birth (DD/MM/YYYY):
Author's address:
Phone no.:
Email:

on the transfer of rights to the audio material in the for of a recorded poem (hereafter "Material"), which was recorded on September 18, 2021.

With this contract, the Author agrees that the Material is licensed under Creative Commons (CC 4.0) as the production is funded by an ESF project (VEVENT) coordinated by HUMAK University of Applied Sciences. Arcada is a partner in the project and commissioner of the Material mentioned in this contract.

The main area of use of the Material is as a supplement to the Superwood Festival experience. The Material and the process of producing it is also to be used as educational material.

The Author reserves the right to use the Material for his or her own marketing purposes, excluding commercial purposes. The Author is allowed to publish the final version of the Material, or parts of it, on his or her own social media channels, always respecting moral rights and crediting both VEVENT, Superwood Festival and Arcada. The Author is not allowed to transfer the Material to third parties, for example through sale or publication.

Contribution for the production and recording of the Material is ▮▮▮▮ and the Author is asked to either deliver information for payment of a fee according to Finnish taxation law, or an invoice with VAT and other necessary information.

This contract is signed electronically by the Author and a representative of Arcada.

PART 4.

THOUGHTS ON THE FUTURE

CHAPTER 1.
METAVERSE, THE FUTURE OF VIRTUAL EVENTS

Veera Vuorio

One of the biggest benefits of events held in the metaverse is accessibility. People from around the globe can come together in a shared virtual space with their own virtual identities that in the near future will stretch across web 3.0 and metaverse platforms with the power of blockchain and virtual wallets. The decentralized nature of the emerging metaverse brings exciting new possibilities to virtual events and new business models behind them. In the near future, we are looking at highly interactive and personal event experiences where people will own unique virtual items and NFTs in place of traditional tickets and merch, in immersive and creative spaces where they can move freely and participate in two-way dialogues without leaving their homes.

Image 1: Virtual reality headset (Image source: Unsplash).

Image 2: In virtual reality (Image source: Unsplash)

What is the metaverse?

The metaverse is not a new concept and in some definitions, metaverses have existed for years already. In Wikipedia, a metaverse is defined as "*a network of 3D virtual worlds focused on social connection.*" By this definition, games such as Fortnite are already, in a sense, metaverses.

But the reason why the metaverse has been on everyone's lips lately is web 3.0, DAOs, the blockchain, and the way these technologies could mold a new, connected metaverse experience that stretches across and beyond different platforms and devices. This is the topic of this chapter: how the technologies emerging with the metaverse concept could mold the virtual event industry in the near future.

The metaverse also translates to a new digital economy, where users can create, buy, and sell goods on the blockchain. In the more idealistic visions of the metaverse, it is also interoperable, enabling you to take virtual items, NFTs, from one platform to another. Right now, most of these platforms have virtual identities, avatars, and inventories that are tied to just one platform, but the new metaverse will allow you to create a persona that you can take everywhere you go.

User-generated metaverses are already a thing and it's a topic that's unavoidable when talking about the metaverse. On these platforms, the worlds are created by their users. And not just created, but also owned. Anything you create or buy is yours to keep or sell for real value. Metaverse platforms like SandBox are built on this idea of a metaverse that is eventually owned and shaped by its user community.

NFTs (Non-fungible tokens) are digital items that can be bought and sold using block-chain technology. Everything from your shoes to a performer's outfit in the metaverse is an NFT that is owned by somebody and can be sold for real value.

NFTs, decentralization, and DAOs are what make the metaverse a virtual economy.

Events in the metaverse now

Big names in the music industry are the first ones hopping on the metaverse event bandwagon, but it's important to consider the unique possibilities it can offer for many different kinds of virtual events in the future, big, medium, and small.

The popular metaverse platform SandBox has partnered with artists such as Snoop Dogg for virtual event experiences and is promising more to come in 2022.

Epic Games has also already produced massive virtual music events in their game Fort-nite and has had big names in the pop music industry like Ariana Grande and Travis Scott perform on their platform with great success. Fortnite's wildly creative events might not suit everyone's taste and vision for the metaverse due to their young target audience, but their success sends a message about the future of virtual events that's here right now.

Image 3: A party in Sandbox (Image source: Sandbox)

Image 4: Ariana Grande in Fortnite (Image source: Epic Games)

In the metaverse, everything exists as an NFT

The clothes your avatar wears, the stage a performer performs on, the guitar an artist plays on stage - because of blockchain, every item has a transparent history of ownership. This means these items will remain as unique and potential collectibles with proof of scarcity.

And almost anything can be made into an NFT

A ticket for a virtual concert doesn't have to be a boring ticket buried in the bottom of your email inbox. It can be made into anything, for example, an accessory for your avatar that you own forever in the metaverse and which can even have real resell value. Things that traditionally have had not much of a physical value for their owners, such as rare collectibles collecting dust behind glass at someone's house, are something the metaverse can put a new kind of twist on.

A ticket to a virtual concert could be, for example, a flaming leather jacket with the band's logo. Depending on the type of ticket you have, a VIP ticket could even be a unique, signed version of that leather jacket with different colors and effects which grants you access to exclusive areas at an event.

You could wear your events and use your virtual event experiences as a visual accessory for your virtual identity. Any event you experience in the Metaverse could leave you with an item or accessory you can decorate your avatar or your avatar's space with.

This is just one way of monetizing virtual events. Like real events, virtual events, too, can have exclusive VIP areas and experiences which can also be reflected on the virtual tickets and merch participants receive.

VIP and exclusive experiences in events in the metaverse can reflect the real world in many ways. For example, you can have an area closer to the stage and performer for VIP guests. Or the endless creative possibilities can even enable completely new ways of experiencing events - imagine even giving VIP guests the ability to fly so they can view the performance from any point of view they want.

The future of virtual events in the metaverse has endless exciting possibilities for virtual event producers. One of the most important aspects to consider when producing virtual events in the metaverse is **how can I make this experience have personal value to the attendee, before, during, and after the event? What can I give to the customer that makes them feel excited about not only what they will experience, but what they are left with after?**

DAO and metaverse events

DAO (*Decentralized autonomous organization*) is an open metaverse concept that enables new opportunities for event producers. DAO enables a new kind of business model which incorporates not only the event producers but also the performers, content creators, and even attendees where everyone involved can benefit and monetize the event. Imagine a community of content creators, social media influencers, performers and more, who co-create an event in an open metaverse. The event is then built around its own token on the blockchain and within this token, all the content, tickets, and NFTs of the event have a value. The more people purchase NFTs, like tickets, through this token, the more valuable the token becomes.

Everyone who owns a share of the event's token will benefit from promoting their event through marketing and content creation. If the event concept is highly successful, increases in value, and keeps birthing new events around the same token, all the people who supported the event in the beginning even just by participating will eventually benefit from it and monetize their own participation.

Everyone involved will have the same incentive: everyone wants the event to be a success. This is the essence of DAO events. They can rearrange the business model and roles and bring together a large community of involved creators, producers, and supporters with a shared goal: to create something great.
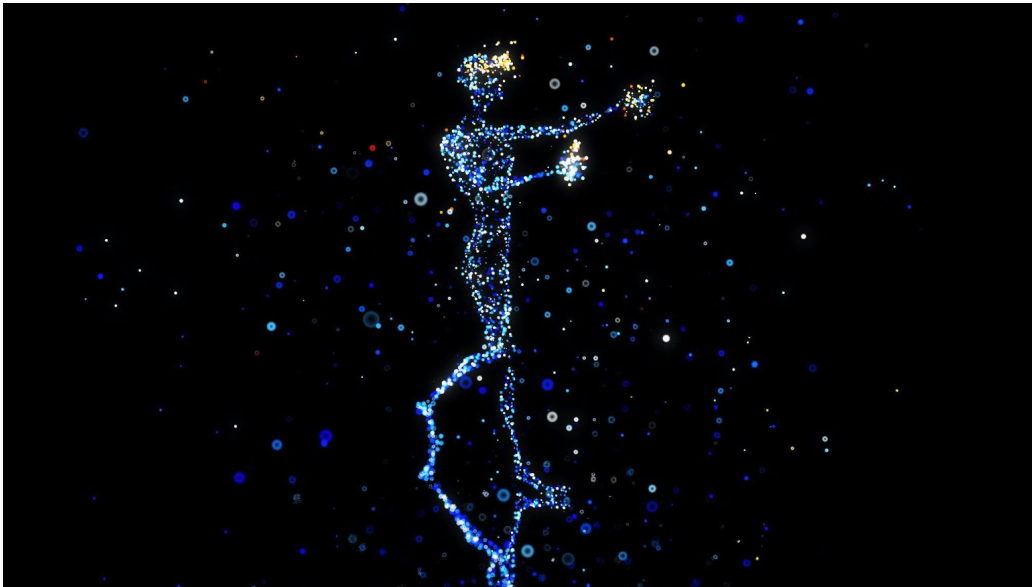
Image 5: In the Metaverse (Image source: Unsplash)

Future of events in the metaverse

It's up to event producers, performers, and content producers immersed in the metaverse to define how the virtual event industry will evolve. The metaverse is undoubtedly still in its early stages and far from being mainstream. It's not yet possible to define what will and will not be possible as metaverse platforms suitable for events evolve in the near future.

One thing is certain: these will eventually be defined by the communities of creators and producers who come together to share a common interest and goal.

TASK

Plan your own event in the metaverse

Create a metaverse event concept, 1 page long, in text and images. Don't get too stuck on the existing limitations of the metaverses available today, instead, imagine what the virtual event world may look like in a few years' time in the metaverse.

Consider things such as: how would your event use NFTs in place of virtual merch and tickets? What would your event format look like?

References

Chodor, Ben 2022. Meetings In The Metaverse: Is This The Future Of Events And Conferences? Retrieved 27.2.2022. https://www.forbes.com/sites/forbescommunicationscouncil/2022/01/13/meetings-in-the-metaverse-is-this-the-future-of-events-and-conferences/?sh=797df8e98a1f

EngageVE 2022. Metaverse NFTS and the virtual events industry. Retrieved 28.2.2022. https://engageve.com/metaverse-nfts-and-the-virtual-events-industry/

The Fortnite 2021. Fortnite presents the Rift Tour featuring Ariana Grande. Retrieved 25.2.2022. https://www.epicgames.com/fortnite/en-US/news/fortnite-presents-the-rift-tour-featuring-ariana-grande?sessionInvalidated=true

The Sandbox 2022. Main page. Retrieved 24.2.2022. https://www.sandbox.game/en/

Wikipedia 2022. Metaverse. Retrieved 26.2.2022. https://en.wikipedia.org/wiki/Metaverse

CHAPTER 2.

ART METAVERSE FROM AN ARTIST'S VIEWPOINT: CASE JANI LEINONEN

Richard Silin

In this chapter, we get an artist's view on art in extended reality and art created in Metaverse. The text is based on an interview with artist Jani Leinonen, conducted on Zoom 2.3.2022. Leinonen is not bound to a specific technique in his art. Instead, he experiments a lot with varied materials and techniques, from wood sculptures, mosaic to oil paintings (Exhibition 2022). In the interview, Leinonen pinpoints the fascination of learning new things as an artist and trying out new techniques. February 2022 Zetterberg Gallery, in Helsinki, announced Jani Leinonen's latest project Goodbye Reality, conducted in cooperation with tech company Varjo. Goodbye Reality consists of art created in the Metaverse, that still can be experienced in a physical space. This unique collaboration combines art and technology together in a way that has (most likely) not been done before. The Goodbye Reality exhibition takes place in Zetterberg Gallery 15.3-5.6.2022. (Goodbye Reality 2022)

What Metaverse?

But first, let us sort out a couple of key words. Extended reality (XR) is a collective term for immersive technologies and includes, for the time being, augmented reality (AR), virtual reality (VR) and mixed reality (MR). Others are still to be created. In immersive technology the reality we experience is extended by blending virtual and "real" worlds or creating an immersive experience. (Forbes 2019.)

The term Metaverse refers to experiences, environments, and assets that exist in a virtual space. The next generation of the internet, as metaverse is called, is something that will be explored by three-dimensional avatars, like those in video games like Fortnite. Metaverse is also a digital economy, where you, as a user, can buy and sell goods. In the future, Metaverse might allow you to create a (virtual) persona that you can take easily everywhere. (Metaverse 2022; Wired 2021.)

An NFT, non-fungible token, is a digital asset that links ownership to mostly digital, but also unique physical, items, e.g. artworks, music, videos, and real estate. NFTs are bought and sold online as they are securely recorded on a blockchain, which ensures that the asset is one-of-a-kind. In other words, NFTs pose digital proof of ownership of a given item. NFTs are becoming an increasingly popular way to buy and sell digital artwork. Since November 2017, $174 million has been spent on NFTs. (Scientific American 2022; Business Insider 2022; Metaverse 2022.)

Art that takes a stance

Jani Leinonen is a Helsinki-based artist, known for his provocative and playful works that criticize capitalism and our self-centered consumerist society of today. Several of his artworks have been caught up in the middle of strange global scandals, for example his Tony is Back parody films or his artwork McJesus, that ended up censored from an exhibition in Haifa, Israel, after massive protests. In his latest project *Goodbye Reality*, from March 2022, Leinonen introduces the next generation of NFTs, breathtaking virtual sculptures, created in Metaverse. These sculptures can be experienced in real physical space, thanks to Varjos XR-goggles. (Goodbye Reality 2022; Leinonen 2022; Exhibitions 2022.)

Goodbye Reality is a pioneering collaboration between Jani Leinonen and VR/XR technology company Varjo. The artworks in Goodbye Reality are photo-realistically sharp virtual sculptures and consist of alphabets. The sculptures are open for alteration by anyone, and the alphabets were created by Leinonen as a way of getting back to the basics of Metaverse - the promise of a more equal and just world. With these artworks, Leinonen wants people to see past the fascination of new tech and actively participate in the design of Metaverse, to ensure that Metaverse is built upon the right kind of values, since Metaverse is strongly connected to centralized corporations. Google, Microsoft, and Meta (Facebook) have all been working on metaverse-related technology. (Goodbye Reality 2022; Leinonen 2022; Metaverse 2022)

Leinonen (2022) describes Goodbye Reality as something unique: "I haven't seen anything like this before so maybe I can say it, perhaps the first time in the world, there is an exhibition in a gallery where the artworks that are virtual can actually be seen in the real space or experienced in a real actual physical space."

Goodbye Reality uses Varjo's XR technology. Varjo's XR headset has cameras which means that you can see the physical space including your hands. You can move around and talk to the people in the room, so you are not in a virtual space. Leinonen continues: "You are actually in a physical space, but the artworks are kind of hovering in the air, and they are interactive". Thanks to Varjo's XR technology there is no need for any tools anymore, it recognizes your hands and on the left hand there is a menu that opens a lot of options. In the menu you can choose between different artworks. There is an alphabet that you can start writing your own statements with. In other words, all the virtual sculptures that are there can be altered by people in the exhibition, and they can start making their own exhibition. (Leinonen 2022.)

Goodbye Reality could be the first exhibition in the world that has been created in Metaverse. Neither Leinonen nor Varjo have found anything similar being done before. When I ask how the idea to make this kind of a project and exhibition was born, Leinonen explains that Varjo actually contacted him. Jussi Mäkinen, CBO at Varjo, is an enthusiastic fan and collector of art and likes Leinonen's work. Earlier, both Jani Leinonen and Jussi had mentioned potential future collaboration, which led to an invitation to visit Varjo. This gave Leinonen a spark to try new digital grounds. Initially, one idea was to make a virtual reality exhibition. Varjo's XR technology however opened new possibilities, when they launched their XR goggles, and the decision was made by both parties to use the XR technology instead, since it is total next level technology and the effect would be so much greater. (Leinonen 2022.)

Leinonen stresses that he is skeptical regarding working with corporations because it is often done just from an advertising point of view and as an artist it might bind your hands. In this case with *Goodbye Reality,* it would have been impossible for Leinonen to make anything like this without Varjo and their knowledge, as a cutting-edge XR-technology company. This kind of collaboration gives both the artist and collaborator new insights and experiences. As an artist, you can examine the possibilities emerging from new technology with experts in their field (I.e., XR-technology) and apply it in your own work. As a tech company, you are spurred to find solutions to questions you have not stumbled upon before and to try and apply the technology to a new context, in this case the art. (Leinonen 2022.) You can get acquainted with *Goodbye Reality* here.

Your dreams are my nightmares

Metaverse poses a terrific opportunity to create a better world without harassment, racism, bullying etc. One of Leinonen's sculptures, *Your dreams are my nightmares*, is about the artist's feelings towards this new technology. Metaverse has all the possibilities to be a better, safer, and nicer place than our physical world, but this does not necessarily correlate with the dreams driven by other things at Meta, Google, Microsoft, Apple and other big corporations. Their dreams can be more like nightmares for some parts of the population (minorities etc.). At the same time; few people pay attention to the kind of social aspects of the new spaces we are creating. Leinonen identifies that there are several problems ahead of us that we should solve as we create Metaverse. (Leinonen 2022.)

At the same time this new technology opens new paths and opportunities. For artists like Leinonen who mostly work with physical objects (i.e., wood sculptures), extended virtually offers a possibility to test techniques and methods more quickly than it would take in a physical world. As an example, Leinonen mentions that in metaverse he can create big sculptures and make tens of versions of them in a day. It would take six months to do the same number of physical versions in his studio. In extended reality, you can go crazy and try different things in a physical space. Normally, using physical materials, this is a cost that must be carefully balanced. (Leinonen 2022.)

According to Leinonen, it is also quite easy to start creating with XR-technology. And since you can see the space around you in XR, it is no longer a virtual space. You are still in this (physical) reality but can sculpt and create virtually. Leinonen points out that the definition in Varjo's XR-glasses is excellent with a greater resolution than reality. Other advantages that extended reality and metaverse provide for you as an artist are the possibility that goggles like Varjo's provide. You can move around your objects and start creating sculptures, forms or whatever you want to create, while still being able to look at them and walk around them. This also means that you can think about the size of the artwork much better. (Leinonen 2022.)

With Metaverse comes other phenomena, such as non-fungible tokens. NFTs promise to change the artworld for good and make it easier for the artist/author to follow the artwork's life (e.g., if it is sold again, you receive a commission). NFTs could become a new revenue source for artists. One challenge with NFTs for an art collector is that many of the NFTs are saved on the servers of private corporations. Questions like what happens with the art piece or the servers if the company goes bankrupt, have suddenly become incredibly significant in the art world, including for Leinonen's collectors. This is the reason the NFTs for the virtual sculptures in Goodbye Reality are coded in the root of the internet and not on a specific company's server. In this way, there is a minimal risk of losing the art piece. (Leinonen 2022.)

The thing that bothers Leinonen with NFTs is that they are so market-driven right now and most of the projects feel like everybody is cashing in. It is not done art first. Even though NFTs could be considered to provide more space for art, the technology is still in the hands of very few platforms. In other words, NFTs are not very decentralized or democratic, despite the original idea. Leinonen argues that NFTs could just be considered as a sort of a certificate of authenticity. (Leinonen 2022.)

My last question to Jani Leinonen is connected to the future of art in Metaverse and how the future looks in his opinion. Leinonen answers that it could be anything. The pure definition of Metaverse according to Leinonen, is that it is combining physical things with virtual things. That is something that he loves, *reality*. In his artwork he combines bits and parts of reality, and brings them to this fictional context of art. The interesting, or "alluring" to quote Leinonen, part of Metaverse for him is that you can have the real space and have real objects, but on top of them you can for example do animations and make the characters or objects act or talk in a totally different way than they normally would. (Leinonen 2022.)

References

Business Insider 2022. What to know about non-fungible tokens (NFTs) - unique digital assets built on blockchain technology. Retrieved 3.3.2022. https://www.businessinsider.com/nft-meaning?r=US&IR=T

Exhibitions 2022. Retrieved 6.3.2022 https://janileinonen.com/category/exhibitions/

Forbes 2019. What is Extended Reality Technology? A simple explanation for everyone. Retrieved 3.3.2022. https://www.forbes.com/sites/bernardmarr/2019/08/12/what-is-extended-reality-technology-a-simple-explanation-for-anyone/

Goodbye Reality 2022. Retrieved 3.3.2022. https://janileinonen.com/goodbyereality/press-release-goodbye-reality.pdf

Leinonen, Jani 2022. Artist. Interview in Helsinki 2.3.2022. Interviewer: Richard Silin.

Metaverse 2022. Retrieved 1.3.2022. https://www.nytimes.com/2022/01/18/technology/personaltech/metaverse-gaming-definition.html

Scientific American 2022. The Metaverse is coming; We may already be in it. Retrieved 3.3.2022. https://www.scientificamerican.com/article/the-metaverse-is-coming-we-may-already-be-in-it/

Wired 2021. What is the Metaverse, Exactly? Retrieved 1.3.2022. https://www.wired.com/story/what-is-the-metaverse/

CHAPTER 3.
IDEAS FOR THE FUTURE OF VIRTUAL EVENTS

Oona Tikkaoja **|** Satu Lautamäki **|** Laura-Maija Hero
Benny Majabacka **|** Richard Silin **|** Juhani Haarala

Digitalization seems to affect everything and everybody, like the butterfly effect: when it flaps its wings, it can cause a small change in the atmosphere, but this small change can cause bigger changes take place on the other side of the world. Digital transformation has become a major business paradigm and one of its key pillars is customer experience. In fact, customer experience can lead to digital disruption, which "as a human phenomenon, is caused by shifts in, among others, the way people use technologies and about changes in their behavior and expectations" (I-Scoop 2022).

As an example, Uber started as a service where customers texted their needs to an agent who connected them with a driver, without a map-based app: they did not lead by technology but they disrupted the business by providing more value to the customers (Horton International 2020). If companies base their understanding of market needs on earlier experiences, it may represent bad learning, which comes behind the development. Good learning is ahead of the development, paving the way for development by presenting something new, unforeseen. So, what might be the new direction of the event business and, especially, what is the future of virtual events?

Human touch in virtual world

The European Commission has recently, in January 2022, proposed a declaration on digital rights and principles for Europeans, which are:

1. Putting people and their rights at the centre of the digital transformation
2. Supporting solidarity and inclusion
3. Ensuring freedom of choice online
4. Fostering participation in the digital public space
5. Increasing safety, security and empowerment of individuals
6. Promoting the sustainability of the digital future

These sound relevant and reasonable guidelines for the future of virtual events as well, as they seem to pinpoint the human experience. The question is, should we spend much more time on trying to understand new technologies or should we focus on the human touch and maybe technologies will come to understand us humans? Hall and Baier-Lentz (2022) state: "Specifically, the metaverse is the moment at which our digital lives – our online identities, experiences, relationships, and assets – become more meaningful to us than our physical lives. This perspective puts the focus on the human experience, making the transition to the metaverse a sociological shift instead of a technological one".

Building an Inclusive Metaverse

Metaverse is also an economical concept. According to Jamie Burke, founder & CEO of Outlier Ventures, an accelerator for startups in the Open Metaverse "[…] the most important element of the Metaverse, beyond immersiveness or the ubiquity of any one technology like AR or VR, is that it is a shared economic system." (Burke 2022, 6). This system can be closed (governed by nation-states and large tech companies) or open (based on decentralized power). Web2 is based on the social applications which mainly work on the principle of users giving their information to the companies as a trade-off to get a free access into the service. Web3, instead, is "an internet mutually owned by builders and users, coordinated by tokens and incentive structures." (Shamas & Nordnes 2022, 9) Outlier Ventures is "[…] increasingly convinced there are two versions of the Metaverse emerging; a permissioned one made, owned, and controlled by Big Tech and the permissionless open one built on Web3 and crypto" (Shamas & Nordnes 2022, 10). This is an interesting evolution for every event producer to be aware of. At the moment, most Internet users are active on the services provided by Big Tech companies, so in order to reach people it can be wise to organize one's events on the sites where the people currently are. On the other hand, it is also important to stay aware of the emerging possibilities.

In her essay What to Get Right First (2021), Rebecca MacKinnon reminds us that although many stakeholders see Web3 as a wonderful solution to the problems of sovereignty brought by centralized Web2, decentralization does not automatically correct the human rights issues. MacKinnon writes: "We must actively take responsibility for building, operating, and governing technology in a way that supports and sustains the type of world we want to leave behind for our children and grandchildren. There is no silver bullet. Being human, working with and doing well by others, is always going to be hard work—no matter how brilliant and well-resourced our technology might be. Web3 cannot change that any more than Web2 could." (MacKinnon 2021).

Today, the Internet is available only for a restricted number of people: those who have access to the devices, the skills to use the technology and without physical or sensory challenges. The first accessibility question is: how can people join a platform or service? Research conducted by the Alliance for Affordable Internet (A4AI) on meaningful Internet connections in nine low and middle-income countries found that only one in ten of the citizens could afford a meaningful connection – with meaningful Internet use built on "4G-like speeds, smartphone ownership, daily use, and unlimited access at a regular

location" (A4AI 2022,3). It is important to bear in mind that the participation possibilities vary highly around the globe. Another accessibility question addresses the skills and abilities to use the devices. Skills can be increased by training, and sensory accessibility by good design. In digital environments it is possible to offer alternative ways (image, text, voice) to interact with the service and with other users. Digital technologies can significantly increase accessibility, when connections can be made and events participated from home. Taking care of the accessibility issues is extremely important for creating an inclusive and thriving Metaverse.

Sustainability

Whether virtual technologies will take us humans one step forward in sustainability, is an intriguing question. When experts from various disciplines have been interviewed on this topic, positive effects have been pointed out, such as reducing carbon footprints, better knowledge and understanding of sustainability and reducing the level of our consumption. In all, we humans can be encouraged to live more sustainably with the help of virtual technologies, tools and platforms. (c.f. Filling Space 2022.)

Perhaps one possible future avenue for virtual events is not only to prove their reduced carbon footprints compared to in-person events but also to educate event organisers about how to save energy in various ways. First, are you going to buy new or used hardware or rent it, in order to host the event? It is also worth analyzing and monitoring how green your virtual event really is and how to make it greener. There are various services and websites where you can find more information, resources and tools to help you *green* your virtual existence (see e.g. The Green Web Foundation 2022). A very simple idea is to think about decreasing the size of screens used and files transmitted – and why not offer screen-free breaks for the participants? (Ecosystem Events 2022.)

There have been vivid discussions about how blockchain use affects the environment. Crypto mining and computing the new blocks to the chain take a lot of energy. Newer cryptocurrencies use a technique called proof-of-stake which demands less computing power. Still, there is the problem of hardware waste including toxic materials. (Livni 2021). These problems have been recognized and there are various projects improving the sustainability of blockchains. The United Nations Conference on Trade and Development published a report in 2021 about harnessing blockchain for sustainable development. In the report, there are various cases introduced which aim to increase sustainability (not only ecological, but also economic and social aspects), for example, a low carbon tea project in Kenya which uses blockchains to trace and make transparent the emissions caused during the production process. (United Nations 2021, 15-17.) Blockchains can be used creatively in various ways to promote sustainability. Blockchain technology offers a myriad of possible uses waiting for realization.

Devices taking us there

Despite its long history, virtual reality is still in its infancy, especially when considering the wider public. In order to really experience the spatial features of virtual reality spaces one should use VR headsets, which are not yet widespread or easy to use. There are not too many VR headsets in the market to choose from in the consumer price range. Many people experience dizziness with goggles so the immersive experience might not come true even if one had access to a headset.

In spite of these problems, more usable headsets are being developed at a fast pace. It is possible that augmented reality headsets will be even more appealing in the future, because it might be more convenient to see your physical environment as well instead of being enclosed in a virtual world. Smart glasses, at least, could enhance our posture and communication if they were used instead of handheld devices. Other technologies, such as hand detection and eye-tracking systems, will be integrated with the headsets, allowing users to control movement and eye vision in a more natural way. To go even further, there will be affordable full-body haptic suits and robotic boots which will allow you to feel as though you are moving around although standing still. (Marr 2021.) The fact is that technological trends that earlier focused on offering practical solutions, now provide very futuristic visions. For instance, German scientists have already developed a real-life teleporter system to scan, transport and rebuild physical objects with 3D printing technology (Gibbs 2015). Why not? In the future, teleportation in virtual reality might be experienced with all our senses: "Mr Scott, beam us up" (Captain Kirk, Star Trek).

References

A4AI 2022. Advancing Meaningful Connectivity: Towards Active & Participatory Digital Societies. Alliance for Affordable Internet. Retrieved 3.3.2022. https://webfoundation.org/docs/2022/02/FullreportFINAL.pdf

Burke, Jamie 2022. Foreword. State of the Open Metaverse 2021/22. Outlier Ventures. Retrieved 2.3.2022. https://outlierventures.io/wp-content/uploads/2022/01/OV-State-of-the-Open-Metaverse-2022.pdf

Ecosystem Events 2022. What is the environmental impact of virtual events. Retrieved 6.3.2022. https://www.ecosystemevents.com/what-is-the-environmental-impact-of-virtual-events-2/

European Commission 2022. Digital citizenship: rights and principles for Europeans. Retrieved 2.3.2022. https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

Filling Space 2019. How will virtual and augmented reality affect sustainability. Retrieved 9.3.2022. https://filling-space.com/2019/10/03/how-will-virtual-and-augmented-reality-affect-sustainability/

Gibbs, Samuel 2015. Beam me up Scotty: German scientists invent working teleporter, of sorts. Retrieved 2.3.2022. https://www.theguardian.com/technology/2015/jan/23/german-scientists-teleporter-transporter-3d-printing-star-trek

Hall, Stefan & Baier-Lentz, Moritz 2022. 3 technologies that will shape the future of the metaverse – and the human experience. Retrieved 2.3.2022. https://www.weforum.org/agenda/2022/02/future-of-the-metaverse-vr-ar-and-brain-computer/

Horton International 2020. Disrupting the consumer industry. Retrieved 1.3.2022. https://www.hortoninternational.com/news/disrupting-the-consumer-industry

I-Scoop 2022. What is digital transformation? The essential guide in DX. Retrieved 1.3.2022. https://www.i-scoop.eu/digital-transformation/

Livni, Ephrat 2021. Can Crypto Go Green? The New York Times 10.10.2021. Retrieved 7.3.2022. https://www.nytimes.com/2021/10/10/business/dealbook/crypto-climate.html

MacKinnon, Rebecca 2021. What to Get Right First. Starling Lab. Retrieved 7.3.2022. https://www.starlinglab.org/what-to-get-right-first/

Marr, Bernard 2021. Future predictions of how virtual reality and augmented reality will reshape our lives. Retrieved 9.3.2022. https://www.forbes.com/sites/bernard-marr/2021/06/04/future-predictions-of-how-virtual-reality-and-augmented-reality-will-reshape-our-lives/?sh=4010d6cc68b4

Shamas, David & Nordnes, Robin Andre 2022. State of the Open Metaverse 2021/22. Outlier Ventures. Retrieved 2.3.2022. https://outlierventures.io/wp-content/uploads/2022/01/OV-State-of-the-Open-Metaverse-2022.pdf

The Green Web Foundation 2022. Is your website hosted green? Retrieved 9.3.2022. https://www.thegreenwebfoundation.org/

United Nations 2021. Harnessing Blockchain for Sustainable Development: Prospects and Challenges. Retrieved 9.3.2022. https://unctad.org/system/files/official-document/dtlstict2021d3_en.pdf

APPENDIX 1
LET'S VISIT VEVENT WORLDS!
VEVENT WORLDS HANDBOOK

Veera Vuorio

Vevent Worlds is a large virtual event venue for VR/MR headset and PC users that combines multiple event spaces and different virtual event hosting possibilities. This handbook will walk you through the basics of how-tos to enjoy your visit or hosting experience. You can get the Vevent Worlds running by downloading the AlspaceVR application and entering the Vevent Worlds with a code.

Here's the access code to Vevent Worlds - Innovation Plaza:

Innovation Plaza: IDU950

Joining Altspace and accessing Vevent Worlds

2D Mode, VR glasses, and recommended hardware

Here are the minimum requirements for the AltspaceVR platform for 2D Mode, PC VR and standalone VR headset users.

Windows 2D Mode
- Windows 10 64-bit, version 1809 or higher.
- Intel i5
- 4-GB RAM
- DX9 compatible dedicated GPU, 1-GB video memory
- 500-MB available space

Head-mounted displays (VR Glasses)
At the time of writing, AltSpace supports the following virtual headsets:
- Oculus Rift CV1
- HTC Vive
- Oculus Quest (Standalone, no PC required)
- Windows Mixed Reality

Minimum system requirements for Windows Mixed Reality glasses, HTC Vive and Oculus Rift
- Oculus Rift CV1 (Windows Only)
- NVIDIA GTX 960 or greater
- Intel i3-6100 / AMD FX4350 or greater
- 8 GB+ RAM
- Compatible HDMI 1.3 video output
- Windows 8 or newer

HTC Vive (Windows Only)
- NVIDIA GeForce® GTX 970, AMD Radeon™ R9 290 equivalent or better
- Intel® i5-4590, AMD FX 8350 equivalent or better
- 4 GB or more RAM
- HDMI 1.4, DisplayPort 1.2 or newer
- Windows 7 SP1, Windows 8.1, or Windows 10

Windows Mixed Reality headsets
For Windows Mixed Reality headsets the requirements and compatibility vary between PC setups and it's recommended to run the Mixed Reality Portal app to ensure compatibility with your PC.

You can read more about Windows Mixed Reality minimum PC requirements here.

Bandwidth requirements
A minimum of 5mbps is recommended and events with many video streams may require more.

Creating an account for AltspaceVR

and accessing the event space

To access AltspaceVR, you need a Microsoft account. If you have one, you can sign in to create your AltSpace account here.

If you do not have a Microsoft account, you can create one here.

After you have an account in AltspaceVR, you can install the application.

For Virtual Reality or Mixed Reality headset users
Download AltspaceVR app from Microsoft Store (For Windows Mixed Reality), Steam (For HTC Vive), or from Oculus Store (Oculus Quest, Oculus Rift)

For 2D Mode (Windows or Mac)
Download AltspaceVR for Windows from Microsoft Store or for Mac OS (Beta version) here.

Note: When you first open AltSpaceVR, it offers you the option to go through a short tutorial. This is strongly recommended to get a good grasp of how the basics work.
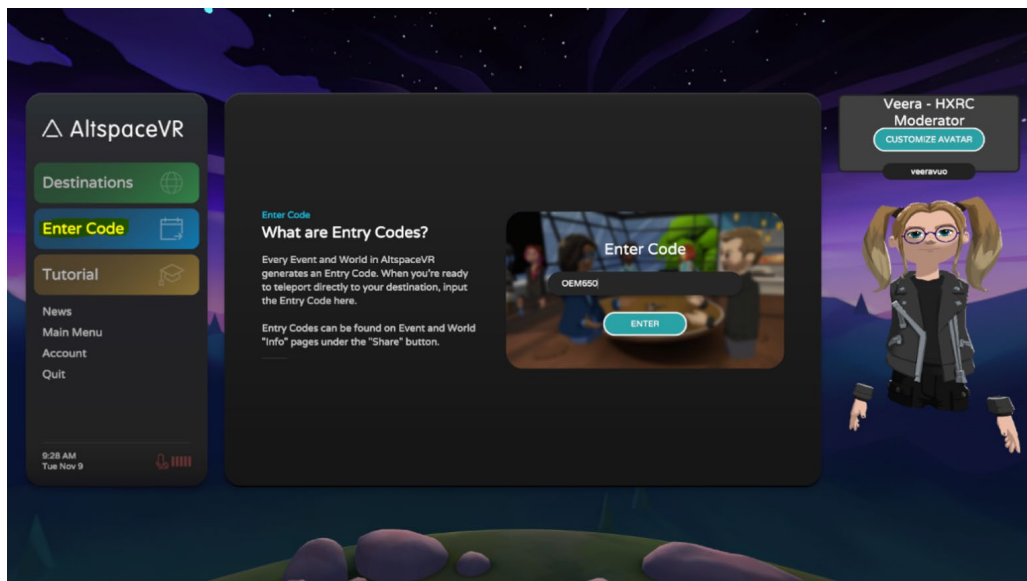
Image: AltSpaceVR

How to join the event space
When you open the app, navigate to "Enter Code". Every event and world in AltSpaceVR has an entry code that you can share with attendees and use to teleport into events. **To teleport to Vevent Worlds, use the code IDU950.**

Important to note: Some features of AltSpaceVR are only in the Worlds Beta and Early Access Program. It's recommended that you turn these two settings on:
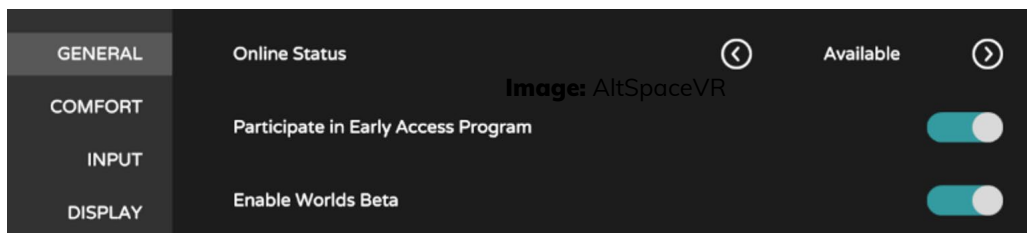
Image: AltSpaceVR

Admin rights and roles

Roles in events and event spaces are assigned on the AltSpace Website under the settings of your event or world. These are useful in giving different sets of actions for different users. A moderator can mute, message, or kick users out of events, and a host

gets access to Host tools that enable them to amplify their voice and gain access to the event space prior to the event for pre-checking the venue.

These roles become useful when hosting events and assigning roles to hosts, audience, and moderators. At any time, even mid-event, you can assign new admins and moderators.

In section 3 Creating an Event, we'll go through the AltSpaceVR website platform where you can create events, assign roles, and more.

How to navigate, communicate in and use the event venue

Altspace controls (VR & Desktop)
If you are visiting AltSpace in VR for the first time, I recommend going through their tutorial to get to know the controls. If you accidentally skipped the tutorial, you can re-access it in your menu. Depending on the VR/Mixed Reality headset you are using, the controls may vary.

Desktop 2D mode users use keyboard shortcuts and a mouse to move around. Here are the basic controls for 2D mode users, and these instructions can also be found nearby once you've teleported into the Vevent Worlds event venue.
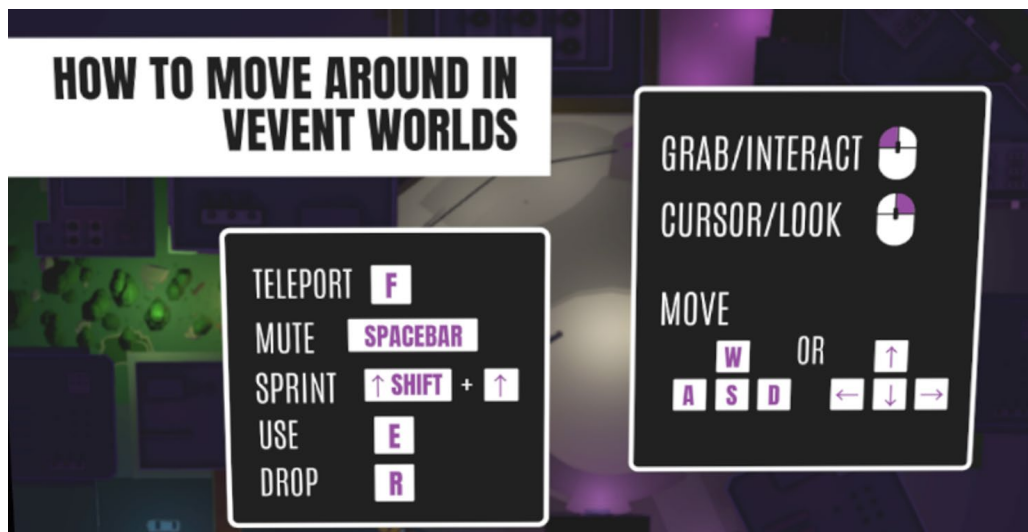
Image: More information about Avatar controls in 2D mode can be found here.

Navigating Vevent Worlds

The Vevent Worlds event venue consists of four different spaces. Navigating is easy from the Innovation Plaza, just follow the markings on the floor that lead you to the teleports. The map nearby where you first spawn upon entering Vevent Worlds lets you know which markings to follow to get into different spaces.
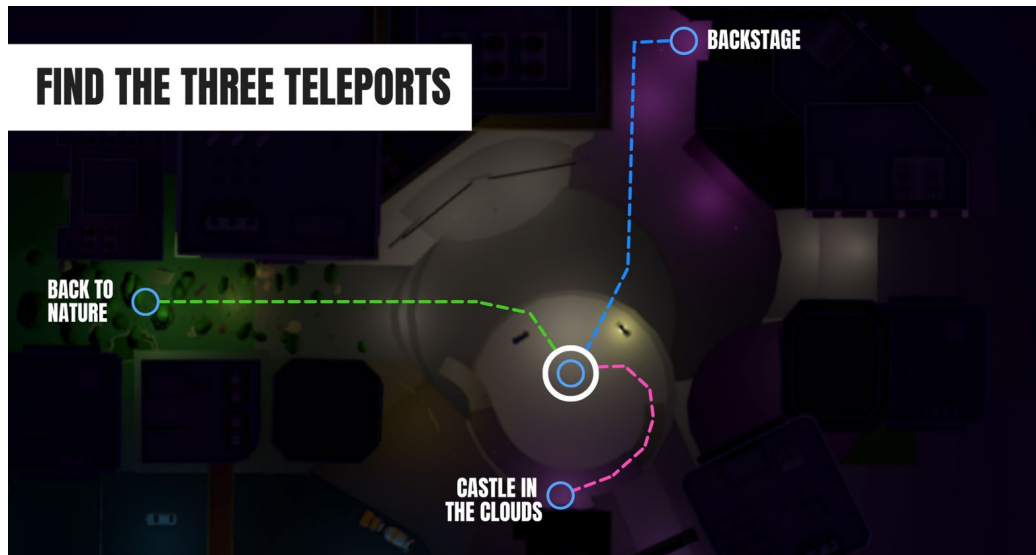
Look out for signs during your visits that guide you through the different areas. All the spaces are very different from one another and they also vary in size.

Image: If you have host or admin rights, you can access host tools on the right side of the user panel. Image: AltSpaceVR

How to use Host tools and present content

Host Tools
If you are hosting an event or presenting content, host tools are an important set of tools for you. You can amplify your voice and mute visitors. See AltSpace's video on the use of host and moderation tools here.

You can mute attendees, amplify your voice to reach all of your audience, send private messages, kick people out, report users, and message or mute all attendees at once.
If you are hosting a larger event with multiple hosts, moderators and an audience, I recommend taking the time to get to know the full set of Host tools from Microsoft's own page dedicated to that here.

Presenting Content

Using the multimedia console
Altspace has a tool called the multimedia console that enables media sharing in events and worlds. Each event space in Vevent Worlds uses these to present video, presentation slides, images, or live streams.

All the content needs to be hosted somewhere, which depends on the type of content you have. Images can be uploaded to altvr.com, .mp4 video files need to be hosted online (Like Vimeo or an online drive. For videos, YouTube does not work.) and for live streams (For live presentations, for example) you can use a Dlive live stream link.
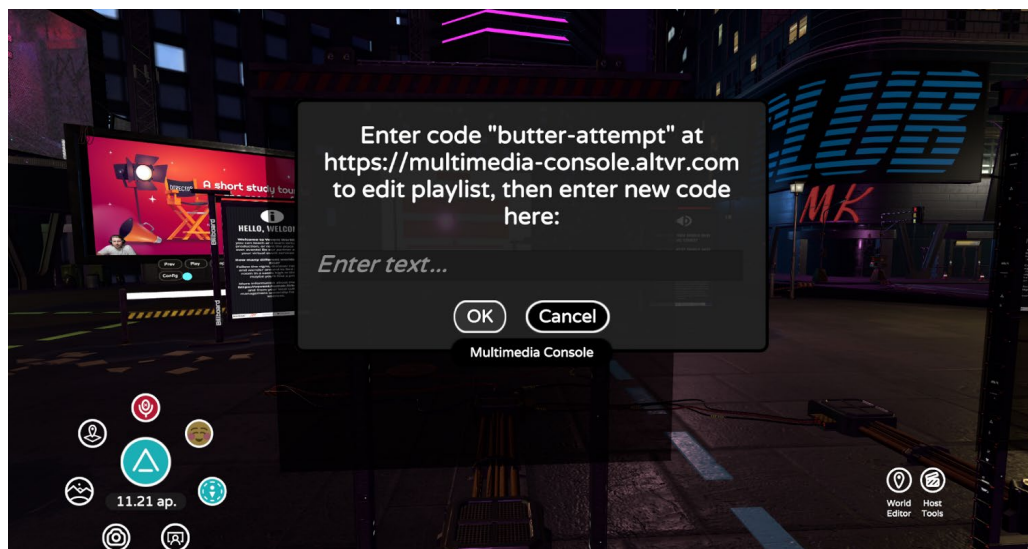
After the content is hosted and you have a link for each one, you can navigate to the display or screen in Vevent Worlds you wish to display your content on and click config. This opens up the configuration code for the specific display. Follow the instructions to access the playlist page and click "load" to input the code that opens the playlist on the webpage.

**Note:** Each display has its own code, so the content for each display needs to be configured separately.

Now you can edit and replace the content you want. To apply the changes, you only need to click publish.

This only applies if you are creating an event on a copy of Vevent Worlds and working with the existing displays in the spaces. If you are creating your own world or need to create a new display or screen, look into these instructions on how to configure and place a new multimedia console in your environment.
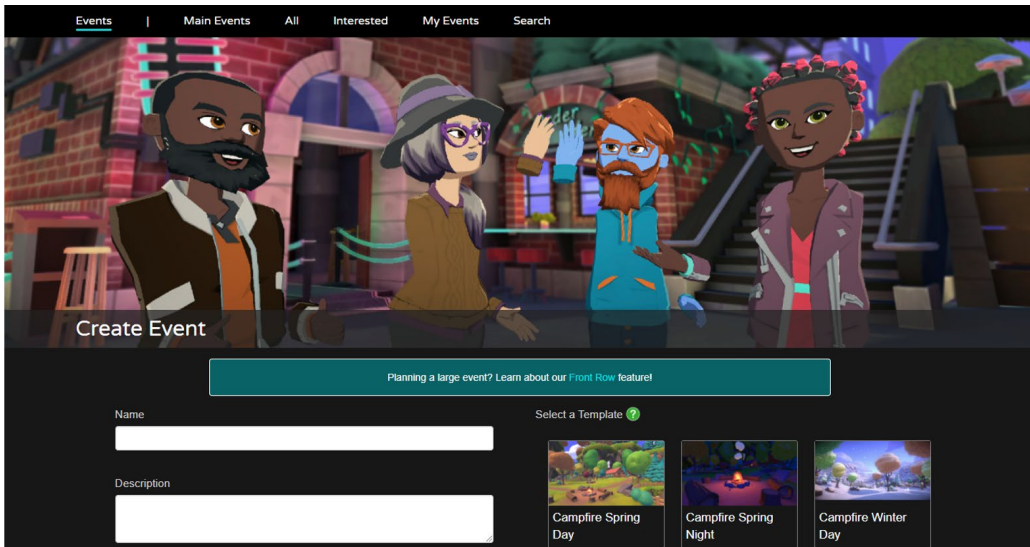
Creating an event

To create an event, navigate to Events on the AltVR webpage. Here you can define the Event Space Template (For example Vevent Worlds - BackStage) name, description, and start and end time for your event, and also choose the category and event type. Under advanced options, you can toggle options like room capacity if you'd like.

The room capacity is 50 by default. Once this number is exceeded, AltSpace creates a duplicate of the event space.

After creating your event, you can start defining roles and edit things further from the Event page.

Creating an event is not necessary in order to bring people together in Vevent Worlds. You can also choose to just visit the world without creating an event, which can be an easier solution for small groups and when you don't wish to have a set start and end time for your visits. In this case, make sure you have the necessary rights to the venue you wish to visit, edit the content prior to your visit, and share the access code with your attendees or students once you are ready to go.

Renting the venues

It is possible to rent these spaces for your own events, fairs, or teaching. The spaces are suitable for many kinds of content and program. One space can accommodate 50 people at the same time and if more people enter, the space is doubled. This may cause some delay in downloading the spaces.

Rental fees are negotiable depending on the required support and modifications. If some modifications are made, the pricing is set by the hours an XR designer or a 3D modeler

works. The spaces can be modified only by those designers that are familiar with the world, have experience with AltspaceVR, or by well-briefed and approved externals.
We offer training for event producers. Training costs vary by the number of hours and trainers needed.

Do you want to rent the Vevent Worlds?
Or learn how to build your own event there?
Contact: laura-maija.hero@metropolia fi.

Sources:

https://docs.microsoft.com/en-us/windows/mixed-reality/altspace-vr/getting-started/system-requirements

https://altvr.com/get-altspacevr/

https://docs.microsoft.com/en-us/windows/mixed-reality/altspace-vr/getting-started/avatar-controls

https://docs.microsoft.com/en-us/windows/mixed-reality/enthusiast-guide/windows-mixed-reality-minimum-pc-hardware-compatibility-guidelines

https://docs.microsoft.com/en-us/windows/mixed-reality/altspace-vr/tutorials/multimedia-console

https://account.altvr.com/events/main