Virtual 3D platforms in entrepreneurship and innovation events during the COVID-19 pandemic. The case of SHIFT in Finland in October 2020 on the VirBELA platform.

Prof. Jussi S. Jauhiainen
jusaja@utu.fi
BIIDEA project, Geography Section, University of Turku
December 2020

Keywords: virtual plaform, innovation, innovation events, user experiences, SHIFT, VirBELA

Abstract: Virtual 3D platforms in entrepreneurship and innovation events during the COVID-19 pandemic. The case of SHIFT in Finland in October 2020 on the VirBELA platform.

The report studies the two-day business and innovation event SHIFT, which took place in October 2020 and was held for the first time virtually on the VirBELA digital 3D virtual platform. The person who purchased the ticket to the event downloaded free software to their device, logged in to the SHIFT event, and created an avatar, a user-generated digital visual virtual character, to interact with the event. The report is based on an online survey of 46 participants in the event (organizers, speakers, company or organization presenters, and regular participants) as well as participatory observation by the report author on the virtual platform during the event.

The vast majority of respondents (57% men, 43% women) were highly educated experts in the field. Almost all (94%) had a university degree and the majority (60%) had participated in SHIFT before. Almost all (95%) did at least part of their work at distance in the autumn of 2020. During their participation in the SHIFT event very many (83%) also worked simultaneously at least a little.

Respondents had no previous experience with the VirBELA platform except that some (41%) tried VirBELA's OpenCampus just before attending SHIFT. Four out of five respondents (80%) felt that the virtual platform and internet connection worked technically well enough and 68% found the use of avatar pleasant. At SHIFT, two out of three used avatar to have a conversation with a previous acquaintance (68%) and also with a new person (68%). The majority (53%) thought that a virtual platform could support the emergence of innovation: on the other hand, many (35%) did not know how to comment on this, but only few (12%) thought that a virtual platform could not support the emergence of innovation. Very many respondents (88%) shared their experiences of using the virtual platform after the event. In the future, three out of four (74%) want to participate in innovation events on a similar virtual 3D platform (15% cannot say, 11% do not want to) and 72% recommend others to participate in innovation events on a virtual platform.

1. Introduction

This report studies the enterpreneurship and innovation event SHIFT, which took place in October 2020 for the first time without a physical gathering of participants in one place to attend the event. Since 2016, this event had been organized in Turku, Finland, with a few thousand attendees. In 2020, the digital 3D virtual platform VirBELA was used in the event. The event participant downloaded free software for the virtual platform, opened the platform for SHIFT on their device, created a digital avatar, that is, designed a digital visual virtual character representing him or her, which enabled to interact with the event, and participated in the event. Virtual platforms are quite easy to use and do not require expensive or complex technology from the user, but an internet connection and a device are sufficient.

The main observations of the report concern the participants' experiences of using the virtual platform and about it as a tool for social interaction and innovation. The empirical material for the report is from SHIFT's entrepreneurship and innovation event in October 2020. The survey to participants was answered by 46 people. Among them were the organizers of the event, the speakers, the presenters of the company, organization or project, as well as ordinary participants who had no other special role in the event besides participating. In addition, the report author's participatory observation at the event will be utilized. The topic is examined in more detail in forthcoming scientific publications.

1.1. Technology, entrepreneurship and innovation events

Technology, start up, enterprise, entrepreneurship and innovation events have grown in popularity in the early 21st century. The purpose of the events is to bring together companies, investors, the media and others interested in the topics, thus helping participants to better achieve their goals. At the same time, the purpose of events is to employ their organizers and bring financial gains (often to the place where the event is held) and, more broadly, to raise the profile of a sector, region or country, often internationally. The events present recent developments and emerging trends in the topics covered, offer services and products in the topic, market companies, organizations and activities in the field, and provide an opportunity to network with actors in the field. The duration of the events varies from a few hours to about a week.

These events can be considered as short-term temporary clusters that can also have significant positive effects on the emergence and development of innovations (Maskell et al. 2006; Bathelt and Schuldt 2014). Up to tens of thousands of individuals, companies and organizations will take part in the biggest events at once. Hundreds of individuals, many of them unpaid volunteers, take part in the arrangements for a single major event. The turnover of the largest individual innovation events can be in the millions of euros and with multiplier effects (accommodation, logistics, etc.) it can be in the tens of millions of euros (Galgina and Man 2020).

The best-known such event in Finland is Slush, which focuses on technology and growth companies. This international event has been held annually since 2008. It has become one of the best known in its field in Europe. In 2019, the number of participants in Helsinki was 25,000. Slush events organized according to the same concept have also been organized around the world. This is an example of the internationalization of non-profit associations involved in entrepreneurship and innovation having a significant economic impact on both the venue of the event and the many companies involved (Galgina and Man 2020). Another significant event in the field in Finland is SHIFT. This two-day international technology, entrepreneurship and innovation event has been held in Turku every year since 2016. It has gathered at its largest thousands of participants

The participants of the event can be divided into five groups. They are organizers, speakers, representatives of companies and organizations presenting their activities, members of the media and ordinary participants who have no special role in organizing, performing or reporting on them. On the other hand, all attendees can follow the course of the event and participate in it.

One of the key attractions of the events is to bring together key players in the topics and provide an opportunity to network, learn from others and get information about the current situation and emerging relevant trends that are important for the development of the company, other background community or otherwise for the participant. The year 2020 brought major changes to these industry events around the world due to travel and gather together restrictions caused by the COVID-19 pandemic. Most major events in the industry, such as Slush in Finland, had to be canceled. Instead, SHIFT was organized on 27-28 October 2020 on VirBELA's platform so that participants did not come together and physically meet each other. Instead, they met in an interactive digital 3D virtual platform.

1.2. Virtual platforms in entrepreneurship and innovation events

Events in virtual space have been used for many years for a variety of purposes, including meetings, seminars, and congresses. A significant advantage is that participants do not have to travel and stay in any specific destination, possibly even abroad. This saves participants' time and money, and it is beneficial also for the environment reducing the negative effects of traveling. Also, the organizer does not need large congress buildings and physical facilities for the participants, just a digital platform is enough. The organizer may also need physical facilities to carry out the various performances, and some staff for this purpose. In some events, however, almost all functions are outsourced to performers using a camera, microphone, and Internet connection. In 2020, due to the COVID-19 pandemic constraints, congresses and events conducted virtually and with hybrid arrangements became more common. This may lead to a permanent change in the organization and implementation of such events, extending beyond the post-pandemic period (Barral 2020; Porpiglia et al. 2020).

Three-dimensional (3D) virtual platforms are part of virtual reality. In it, physical reality is replaced by the digital dimension. A virtual platform can have features looking similar with physical reality, and it can even resemble it. Virtual reality can also be something for which there is no physical equivalent in the material real world. On virtual platforms, the participant has a digital visual avatar representing him or her. It allows him or her to participate in an event or game, move there, and otherwise act through the avatar. Sometimes an avatar is also used to interact with other participants in an event or game. Usually the organizer receives also data regarding the event participants, i.e. where and for how long they spent their time in the event and which activities they visited. Therefore, the issues of privacy and ethics are also important in the events organized in 3D virtual platforms.

There are more than one hundred 3D virtual platforms used for various kinds of events. Some of these events are small with tens of participant while the largest ones have simultaneously more than 10,000 participants. The participants into these events have grown substantially during 2020 and the growth is expected to continue in 2021 (Cook and Kuczer 2020). Among the most commonly used platforms are MootUp, Breakroom, LearnBrite, Virtway Events, Engage, AltSpace and VirBELA.

VirBELA provides a 3D virtual platform for distance working, distance learning and remotely organized events. The virtual platform has been developed since 2012 and it has tens of thousands of users every month (VirBELA 2020). On VirBELA's platform, the participant stays in a large digital event area with avatar and moves with it from place to place, follows the event and communicates with other avatars. The digital event area includes buildings, open public outdoor and indoor space, and various special sites. In addition to regular participants, also speakers, companies, service and product presenters, and organizers have avatars. The rooms have the digitized dimensions of regular events, such as information points, powerpoint

presentations on walls, etc. The presentation with powerpoints are similar to those at physical events. Live and recorded video broadcasts are often used, with real people appearing instead of avatars. Panel discussions are like in face-to-face occasions, although people can only be seen on screen. On the other hand, these discussion may also be held with fully digital elements with avatars.

1.3. Innovation development in blended environments

Innovations develop from ideas that are based on knowledge (Figure 1). For the emergence of a new idea, one needs interaction between relevant stakeholders and interpretation of the existing knowledge. Interaction and interpretation are connected to each other.

Earlier interaction took exclusively place in physical reality (Figure 1). The geographical proximity between stakeholders was seen important if not necessary to facilitate interaction. However, interaction could take place also over distance by phone and later by various already information and communication technologies (Skype, Zoom, Teams, Meet, etc.) facilitating the (visual) interaction over distance.

With the development of digitalization, it is increasingly possible to interact also in virtual reality and extended reality thus relaxing the necessity of geographical proximity between the stakeholders involved in interaction (Figure 1). Virtual reality has been studied in learning processes for decades. Various models have been developed to more accurately demonstrate the additional dimensions that virtual reality brings to learning processes. It has been stated that it can be utilized in many ways in human interaction, cooperation and learning (Parjanen et al. 2012).

Besides interaction, for the emergence of a new idea, there is needed also interpretation of the current state-of-art (Figure 1). Earlier, this exclusively took place between humans. However, with the advancement of technology, the interpretation was facilitated by machines such as computers and information and communication technologies. Avatar-based innovations that connect users in virtual dimensions to innovation development processes have been considered for quite some time (Kohler et al. 2009). More recently, interpretation that always needs to know what is the state-of-art and how the developing idea differs from it is taking place between machines that are able to learn and develop by themselves through machine learning and artificial intelligence (AI). Also, combinations between humans, humans with machines and between machines can take place in the interpretation of existing knowledge into new ideas. In the end creativity is now any an aspect that exclusively based on interaction solely between humans.

Not all ideas develop into innovations but some do. The transformation of a developed idea into innovation (a novel product, service, ways to organize, etc.) takes place through contextualizing and designing it (Figure 1). Context and design are connected to each other. The putting the idea into a context can take place in material physical environment immediately around the developers or in another physical material environment that is geographically distant from the developers.

However, digitalization has increased the contextualization in immaterial environment, i.e. in digital environment (that is, however, in the end also material through its technology). Nevertheless, currently the earlier mentioned realities and these environments become together a blended immersive environment consisted of various combinations of physical and material as well as digital, virtual and immaterial aspects.

The new idea needs also be designed before it can become an innovation. The design can take place in a process between humans or by human(s) assisted by machines (computer-assisted design programs, etc.). However, as in the interpretation of exiting knowledge into new ideas, also the design of ideas into innovations is increasingly taking place between “clever” AI-supported machines that are able to learn.

Also, combinations between humans, humans with machines and between machines can take place into design of ideas into innovations.

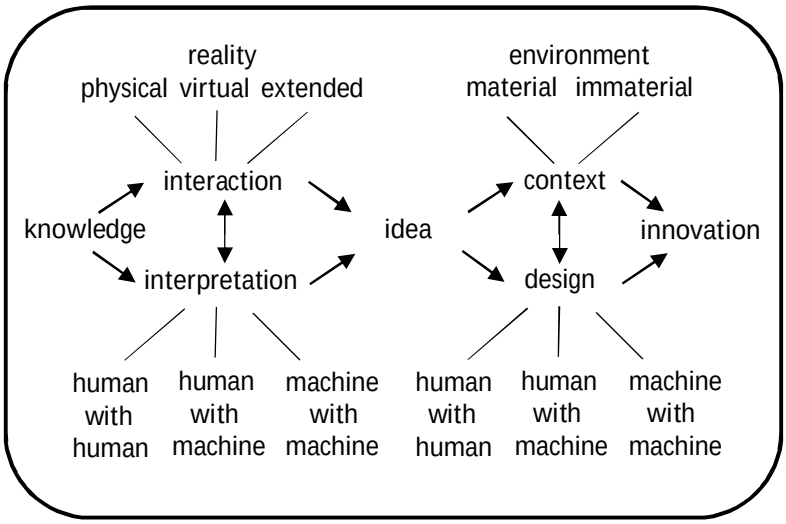


Figure 1. Model of the emergence of innovations.

Prior to 2020, virtual platforms were used quite rarely for specific innovation-focused events (besides learning), but in 2020, thousands of seminars, congresses and events were held through virtual connections and platforms. Comparisons have begun to compare the differences and similarities between events conducted in physical and virtual environments, and how different technologies can support interactive activities (Steinicke et al. 2020).

Studies have been conducted on the opportunities and challenges of virtual platforms in innovation processes, i.e. what is central to increase positive interaction (Kohler et al. 2011). Many of the early studies were inspired by the virtual world Second Life, developed in the early 2000s. Later this application was also utilized in learning environments (Salmon 2009). In contrast, there is much less academic research on the use of virtual platforms and experiences in technology, entrepreneurship and innovation events, in particular how virtual platform events support and perhaps prevent the emergence and development of innovations. It is expected that virtual platforms will be used significantly more for innovation development in the near future, so it is necessary to study the topic and find out the experiences of both organizers and users. This report focuses on the user experiences of the SHIFT entrepreneurship and innovation event held on the VirBELA platform during the COVID-19 pandemic in October 2020.

2. SHIFT as technology, entrepreneurship and innovation event

2.1. SHIFT environment

SHIFT is a series of interactive events focused on promoting technology, entrepreneurship and innovation. They are held throughout the year. The main event is a two-day thematic event featuring technology, business and innovation actors. It is possible for participants to learn about the recent development and to network with each other and with the speakers and presenters during the event. This future- and result-

oriented event also features company and organizational presentations and various discussions and workshops on current topics.

The first SHIFT main event was held in Turku in 2016, and since then, annually. The activities are based on Shift Events Oy, whose main task is trade fair and exhibition services. Its turnover in 2019 was almost 600,000 euros and it had 5 employees (Finder 2020). The actual SHIFT event is based on the non-profit registered association SHIFT ry. The main event in 2019 was attended by 2,000 people. The event was organized in 2019 by 120 people, of whom 80 were voluntary unpaid actors.

2.2. SHIFT in the VirBELA virtual platform in 2020

Immediately after the main event of SHIFT, the dates of the following year's program will be announced, i.e. the two days on which the event will take place. In the summer of 2019, it was announced that SHIFT would be held in August 2020. However, the COVID-19 pandemic began to spread to Europe in the spring of 2020. In March, the Finnish government decided on significant restrictions on the movement and assembly of people within Finland. As a result, the possibilities for organizing international mass events decreased significantly, as access to Finland became challenging. The number of participants in individual events was also limited, which made the financial and substantive organization of events challenging or even impossible. Restrictions were eased in the summer, but there was uncertainty in the autumn about when and what kind of restrictions might come.

Thus, the organizers of SHIFT decided in April that the main event would be postponed to October and implemented at least in part as a virtual event (New Technology 2020). When the COVID-19 situation became uncertain again in the autumn, it was decided that the two-day business and innovation event planned for physical presence would be organized for the participants completely virtually, enabled by VirBELA's virtual platform. This was the first time SHIFT organized its main event as virtual and the first time SHIFT used for that VirBELA's platform. The organizers of the event had compared different platforms and decided to use this platform. The event's main organizer stated before the event that "after all the time spent in traditional video meetings within the four walls, virtual SHIFT 2020 will feel like a truly real meeting platform. You are distant, but still genuinely together [original interview in Finnish]" (Lehtiniitty 2020). Prior to the main event, SHIFT hosted a series of webinars in the fall.

The event took place on 27-28 October 2020. The main themes were the cornerstones of smart business, such as economic growth and sustainability, anticipating change and business resilience, and nurturing human capital and innovation (Lehtiniitty 2020). On both days, the program began at 10:30 a.m. and ended at 6:30 p.m. (Appendix 1). During the day, there were main events held in one place for all participants. In addition, there were several sessions and workshops, some of which were conducted simultaneously in different locations in the virtual environment. In addition, during the days, companies and other organizations presented their activities. During the day, it was also possible to meet with avatars without agreeing on this in advance or with the exact time and place to date with other participants or speakers, and talk with them if they were present as avatars. The day's program ended with a voluntary digital social event ("beach party") in the beach area of the virtual platform, which also featured livestream music. There it was possible to talk, move and even dance with the help of avatar.

A total of approximate 800 people had registered for the SHIFT event. As the first virtual event was organized under special COVID-19 circumstances, this number can be considered reasonable, even though there had been almost ten times the number of participants in the physical events of SHIFT. According to the program, 36 speakers had registered for the event, 21 of them from Finland. Four people acted as facilitators (SHIFT 2020). In addition, there were about 10–15 avatars on both days as representatives of companies, organizations and projects to illustrate their activities. Typically, there were in total 100–200 avatars (sometimes over 200) in various locations throughout the event. There were about 20 organizing

avatars with task to guide the participants in going to the events as well as navigating the event area. There were from individual to dozens of avatars in the settings. Participants came and went throughout the days.

Following the 2020 event, it was announced that the 2021 SHIFT event is scheduled to take place in August 2021 as a traditional physical face-to-face two-day event that combines experiences from the virtual event in 2020. According to Sini Toivonen, CEO of SHIFT Oy, "we want to be able to organize the event on site again, because the exchange of thoughts and ideas works best face-to-face in spite of everything. However, virtual solutions make events more diverse and accessible than ever, for both participants and speakers [original interview in Finnish]" (e-Press 2020).

3. User experiences of the VirBELA platform in the SHIFT event in October 2020

3.1. Material, methods and the respondents' background

For the report, material was collected regarding the SHIFT entrepreneurship and innovation event that was organized in the VirBELA virtual digital 3D platform held on 27–28 October 2020. Users were sent a survey (Webropol) via the Internet. The author of the report prepared a questionnaire and the organizer of SHIFT sent it to around 600 people who attended the event. The survey was answered anonymously between 4 and 17 November 2020. The questionnaire was answered by 46 people. In addition, the author of the report participated in the SHIFT event and made observations in accordance with the principles of participatory observation. This report mainly presents direct distributions from the data. Subsequent scientific articles look at the issue in more detail.

Respondents had different roles in the event. One in seven (14%) respondents were actively involved in the organization of the event, one in three either mainly as a speaker (11%) or presenter (25%) of a company, organization or a project, and a half (50%) mainly as a listener and participant without special obligations during the event. On the one hand, everyone had the opportunity to follow at least some different occasions during the event, on the other hand, many had specific tasks that limited free participation in the activities (Figure 2)

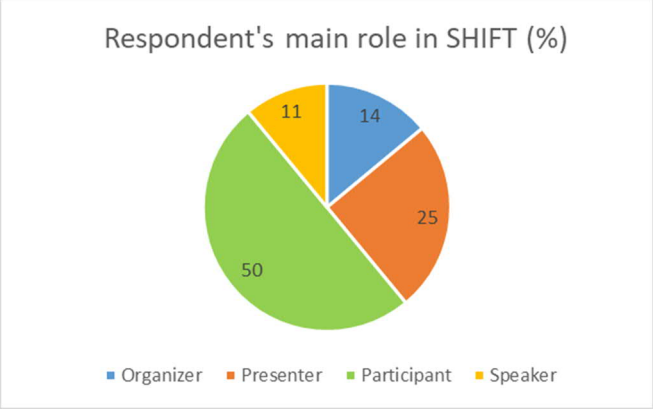


Figure 2. SHIFT event survey respondents' main activity in the SHIFT event in October 2020.

In the report, the respondents' viewpoints are discussed both as one group consisted of all respondents as well as defined between ordinary respondents and functional participants, i.e. those respondents having specific functional duties (organizer, speaker or presenter) during the event. Furthermore, some responses

are discussed along the respondents' backgrounds. The survey responses were inserted in the SPSS program and analyzed quantitatively with statistical methods such as cross tabs and direct distribution of the data.

Of respondents, slightly over half (57%) were men and slightly less than half (43%) men (Figure 3). Most were middle-aged respondents: 14% less than 30 years old, 43% 30–50 years old and 43% over 50 years old (Figure 3). The gender divisions were rather similar among ordinary participants (52% men, 48% women) and functional participants (57% men, 43% women).

A high level of education is typical for specialized events targeted to enterprises and innovation developers. Almost all (94%) respondents had a higher education degree. The share was slightly lower among ordinary participants (84%) while all functional participants has a university degree (100%). Of all respondents, about one out of four (26%) has PhD degree. Such very high education level is mostly due to active engagement of the staff of the local university in the event as they had been active also in previous SHIFT events.

Figure 3. SHIFT event survey respondents' gender and age.

The respondents were active in many different fields (Figure 4). A majority (57%) worked in the private sector (33% entrepreneurs, 24% otherwise in the private sector). The participation of those working in the private sector, and especially entrepreneurs, is common in entrepreneurship and innovation events, as the events are specifically targeted at them. Almost one in four respondents (22%) worked at a university or university of applied sciences. This is explained by the tradition of the event in Turku, i.e. the participation of the staff of the local universities and universities of applied sciences in the main event of SHIFT has been active in previous years as well. Fewer respondents worked in another public sector (9%), in other positions (4%) or were students (7%). There were small differences in the shares of ordinary participants (private sector 71%, university 14%, other public sector 5%, other work duties 5%, students 5%) and functional participants (private sector 46%, university 27%, other public sector 14%, other work duties 5%, students 9%).

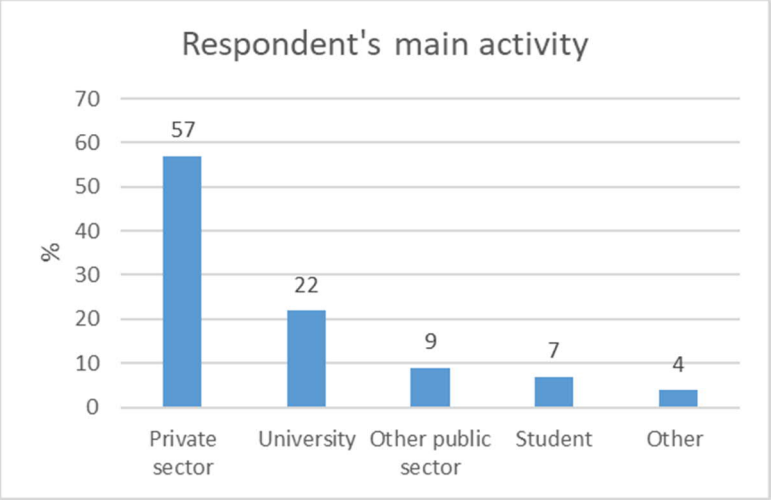


Figure 4. SHIFT event survey respondents' main activity in October 2020.

Almost three out of four (72%) respondents lived in Turku. They would have had only a small geographical distance to the event if it would been organized in Turku as in previous years. Of the respondents 11% lived elsewhere in Southwest Finland, 11% elsewhere in Finland and 7% abroad. At the end of October, the situation of the COVID-19 pandemic in Turku was still quite moderate and there were not (yet) major restrictions for face-to-face meetings. However, the situation in many countries had become already very serious and the travel and meeting restrictions would have made very difficult for speakers and participants to reach Finland and Turku. Also in Finland, the pandemic situation had started to become serious in the capital region.

Half of all respondents (49%) would certainly (29% perhaps, 22% not) have attended the SHIFT event in the fall of 2020, even if it had taken place as a physical event where participants meet face to face. Relatively fewer people living outside Turku would have participated in the event in the autumn of 2020 if it would have been organized as an event that would have required the participant's physical presence with other participants. By the end of 2020, it was no longer possible to physically host the event due to restrictions imposed by the authorities.

3.2. Experiences of distance work and interactive digital interactions tools

With the COVID-19 pandemic, the number of distance workers increased rapidly from spring 2020 in Finland, as elsewhere in the world, especially in Europe and the United States. Many workers started to work outside their actual place of work, either full-time or part-time, to prevent the spread of the virus and to potentially become ill. Employers followed different practices, but in many office jobs, at least partial distance work became commonplace during 2020. In the past, distance work had been a voluntary solution for many. In the new situation, almost all were forced to do so because of the pandemic (Choudhury 2020). This posed, among other things, a variety of challenges in interaction and social networks (Waizenegger et al. 2020).

Nearly all of the respondents (96%) worked remotely at least one day a week and the majority (56%) worked remotely throughout the working week. In practice, all respondents (98%) thought that distance work had come to stay in working life. Even if the restrictions on movement and assembly caused by the COVID-19 pandemic would be reduced and eliminated during 2021, at least from the respondents' point of view, there is no longer a return to the traditional constant everyday presence in the office or workplace.

Internationally, several large corporations and companies already changed their operations so that the share of distance work will be much higher than before 2020 (Choudhury 2020).

Almost all respondents (93%) would like to work at least one working day a week remotely outside the actual workplace. On the other hand, only one in six (16%) respondents wants to switch to full-time distance work (7% do not know, 77% do not want to). The "new normal" would mean, from their perspective, working part of the week at the actual workplace with other employees and part of the week somewhere else, perhaps at home or in their holiday property. Many people in Finland have well-equipped cottages with excellent internet connections in rural areas and elsewhere outside cities. There were only minor differences in the backgrounds of the respondents regarding the wishes for distance work. Of those, who were employed by the private sector, 58% would like also in the future to work outside their usual place of work at least one day a week. Of those, with less than 50 years old, 54% would like in the future to work outside their usual place of work (46% of those at least 50 years old).

Because of the changed circumstances, almost all respondents had received experiences of interactive digital communication tools in the distance work (Figure 5). Some of the tools are used for work only, others also for other purposes. Almost all used Zoom (91%) or Teams (83%). About every second or slightly more used Slack (52%), Google Meet (49%) or Skype (46%). Digital interaction tools more rarely used were, among others, Discord, Trello and GoToWebinar. Also some respondents use WhatsApp for work purposes.

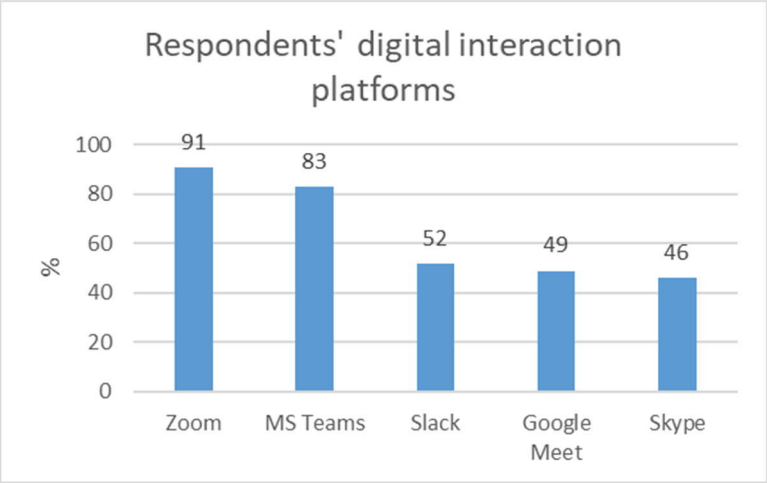


Figure 5. SHIFT event survey respondents' most common digital interaction tools in October 2020.

3.3. Participation to SHIFT

The SHIFT event has been organized annually since 2016, so in 2020 it was the fifth time. Some respondents had previous experience with SHIFT and some had little or no experience. In 2020, 39% of respondents participated in SHIFT for the first time, i.e. the majority (61%) had participated in the event before. In the past, slightly half (54%) had participated 1–2 times and few (7%) had participated at least three times.

Home has become an important and even the main pace to work during the COVID-19 pandemic in 2020. One can also participate from home in many kinds of virtual seminars that earlier required time-consuming traveling, even to abroad. Of the respondents, four out of five (80%) were at home during the event (73% on work duties, 7% on holidays), one out of six (16%) at their proper working place and few (4%) elsewhere (Figure 6).

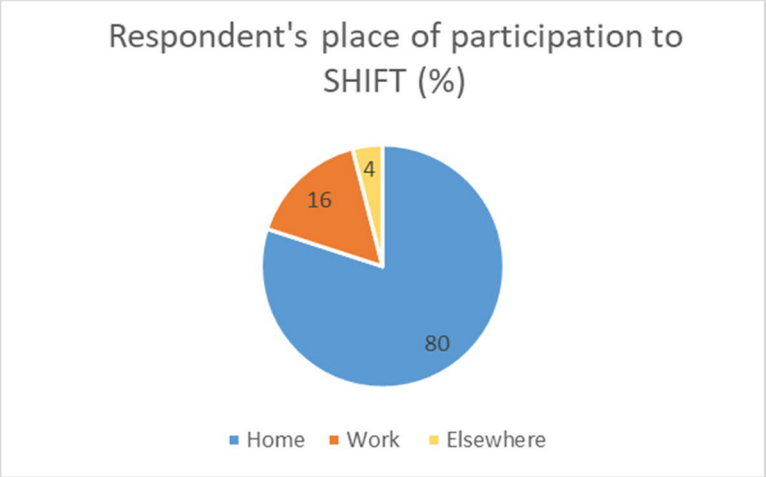


Figure 6. SHIFT event survey respondents' main location during the event in October 2020.

In 2020, almost all (94%) participated in SHIFT during both days of the event. Participation in the event was also active (Figure 7). On the first day, which took place around 10:30 a.m. to 6:30 p.m., a majority of respondents (59%) followed the program for at least half of the entire program day (36% almost all day, 23% about half the day), a fifth (20%) 1–2 hours and fewer less than one hour (9%) and not at all (11%). On the second day, which also took place around 10:30 a.m. to 6:30 p.m., a majority (55%) of respondents followed the program for at least half of the entire program day (25% almost all day, 30% about half a day), every fourth (26%) 1–2 hours and the rest less than one hour (14%) or not at all (5%). About one of four (23%) of respondents participated (at least almost) entirely in the program on both days, 43% at least half of the day on both days. These most actively present people were mostly ordinary participants or company and organization presenters. Very few (9%) participated only very little on both days, and these were often invited specific speakers.

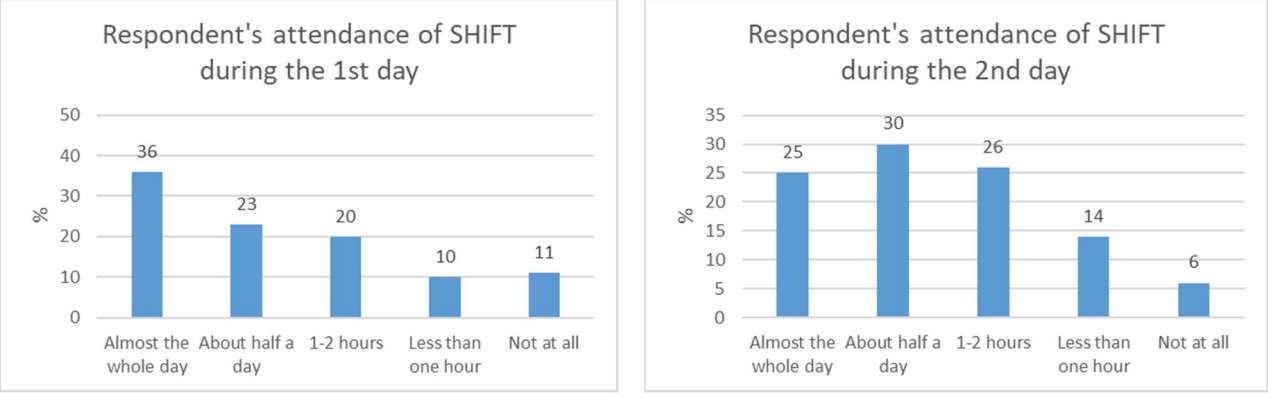


Figure 7. SHIFT event survey respondents' following of the event in October 2020.

Individual participation in the event usually took place as part of work assignments or in addition to other work. In a typical physical event, others see what everyone is doing during the event: whether they are watching a show, talking on the phone, surfing the web or social media, or spending time in a cafe, bar, or outdoors. In the virtual platform, it is possible to see where each participant's avatar is (i.e., in what concrete virtual space), but it is usually not known what the person behind the avatar is doing. It is not known from the avatar sitting on the virtual bench whether it is used to follow the performance or whether

it is otherwise just sitting on the spot and the person behind it is perhaps doing something completely different. Of course, when the avatar is speaking, it is known that the person in the background is also speaking and when the avatar is moving, there is a person behind it.

During the SHIFT event, five out of six (83%) simultaneously work on other duties that just following the event. This is much easier in a virtual than a physical face-to-face event. One in five (21%) respondents simultaneously worked for almost all day, one in three (31%) about half a day, and one in three (31%) did little work. One in six (17%) did no other work at all during the event (Figure 8).

Checking mobile phones (e-mails, text messages), surfing the web and watching social media have become commonplace for many attendees at congresses, seminars and other events. There, this may be limited by situations where others notice these activities. In contrast, the presence in a virtual platform has little external control. Business and pleasure get intertwined often in these events but usually the social media use is more about sharing experiences and entertainment. Seven out of eight (88%) respondent used social media at least a little during the event. Few respondents (9%) used social media almost all day and one-sixth (16%) about half of the day and almost two-thirds (63%) less than that. One in eight (12%) respondents stayed out of social media throughout the event, meaning they did not use it at all at the time. A couple of respondents mentioned that the use of social media at the event was their job, which explains why they were on social media all day. Work and entertainment are sometimes intertwined in the use of social media at events, but most often its use is not directly related to work (Figure 8).

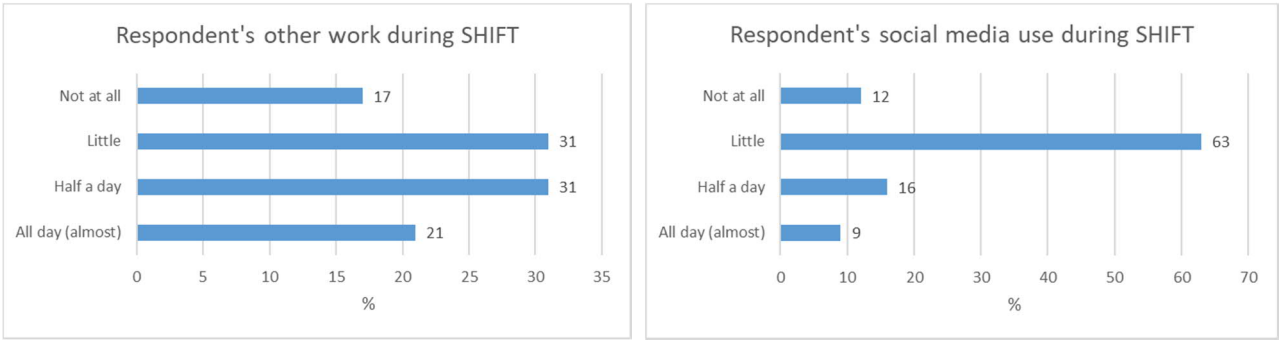


Figure 8. SHIFT event survey respondents' work and social media activities during the event in October 2020.

Within a week to two weeks of the SHIFT event, almost all respondents (88%) shared their experiences of using the virtual platform. They were more than those who shared the content of the event with others (61%). Many had used the platform for the first time, especially in an entrepreneurship and innovation event, so it was a new experience that was natural to share with others.

Two out of three (65%) estimate that innovation events on a virtual platform will replace face-to-face innovation events, and one in five (22%) disagreed on this (13% could not say). The restrictions brought by the pandemic were still quite new in the autumn of 2020, and virtual and hybrid events had not yet established their position in relation to events based on physical presence, at least in Finland. Some respondents still considered that virtual events are alternative, substitute and temporary solutions, although the situation regarding the organization of events may have already changed permanently. Time will show how much of the technology, business, entrepreneurship and innovation events will continue as event fully based on face-to-face presence, hybrid event based on both virtual and face-to-face presence or fully virtual presence.

Almost three out of four (72%) of respondents indicated that they would recommend others to participate in innovation events on the virtual platform and only a few (9%) disagreed with this (19% could not say). Negative perception of one's use of virtual platform influences the potentiality of recommendations. Of those, who were disappointed of the use of virtual platform, 64% recommended its use. On the contrary, of those, who were not disappointed of the use of virtual platform, substantially more (83%) recommended its use. The experience of a virtual platform in SHIFT was generally positive, with three out of four respondents (74%) saying that they would like to participate in future innovation events on a similar virtual platform (i.e. VirBELA) to SHIFT (11% disagreed, 15% could not say).

As the result of participating to the SHIFT event through the virtual platform in October 2020, the respondents had different opinions on what they got from the event (Figure 8). Of the respondents, about one-in-three (32%) agreed with the statement that the use of the virtual platform was a disappointment for him or her, however, a majority (54%) disagreed on this statement (14% did not know). The perceived disappointment can refer to the technical issues of the platform, contacts one got or did not get during the event or the contents of the event.

A clear majority (57%) of the respondents were of opinion that they got useful information (27% disagreed on this, 16% did not know). There was not difference on this whether one attended the event for the first time or was a more experienced participant. Of those, who were the first time in the SHIFT event, 59% agreed to have received useful information (29% disagreed on this, 12% did not know). Of those, who had attended the SHIFT event also earlier, almost the same amount (56%) agreed to have received useful information (26% disagreed on this, 19% did not know). However, of those working in the private sector, fewer (48%) agreed to have received useful information and slightly more (32%) disagreed on this (20% did not know).

Of the respondents, two out of five (37%) got useful work-related contacts (54% disagreed on this, 9% did not know) (Figure 8). Of the respondents, one out of seven (14%) got useful social contacts (68% disagreed on this, 18% did not know) (Figure 8). The focus of respondents was on getting useful information, to some extent work-related contacts and rather little on social contacts. The technical virtual platform was the setting in which all activities took place. Whether the participant got useful information and contacts or not depends on the viewpoint of the person and the contents of the event.

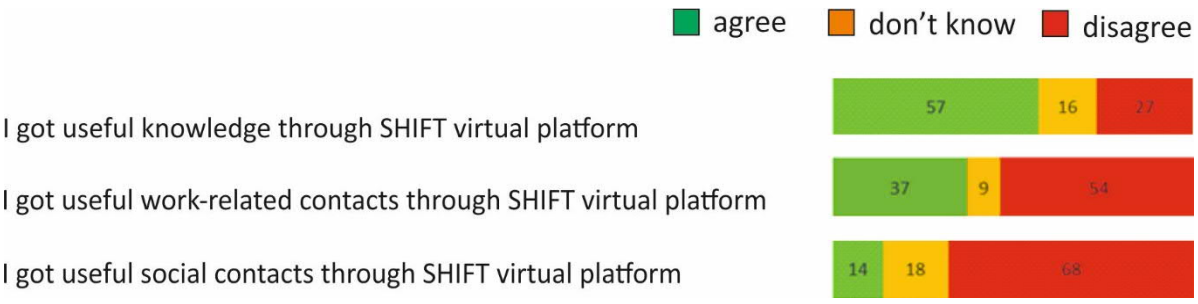


Figure 8. SHIFT event survey respondents' viewpoints what they got from the event in October 2020.

3.4. Moving around the virtual platform

The platform developed by VirBELA consists of different parts. In a way, it resembles a larger congress area or campus with several event-related buildings with interiors (large lecture halls, seminar rooms, workshops, showroom, etc.), other buildings, other indoor and outdoor spaces and a variety of leisure

venues (such as a park, terraces, football pitch, cinema, beach area, motor boat, etc.). Depending on the size of the event, many or only a few of the buildings are directly used by the event, i.e. they have a program. However, the digital virtual environment exists, whether there was actual activity or not. The features of the digital virtual environment have an impact on the interaction that takes place through the avatars present there. As in the physical world, open and enclosed spaces, buildings, and rooms structure, enable, and direct the realization of interaction (Berger et al. 2016)

Avatars can move freely throughout the congress area listening to presentations, attend workshops, talk here and there as planned at a meeting place with other avatars, or sit, walk, run, dance, or even drive a motorboat away from the actual meeting event. From the user's point of view, the area is quite large and it easily takes 10-15 minutes or more to move from end to end, depending on the pace of walking or running, stops or the ability to find the right routes to one's destination. This is also somewhat reminiscent of a physical congressional area. The difference is that using the "Go To" command, the avatar moves in a blink of an eye to a specific area, such as a seminar building, workshop, exhibition hall, or even the beach.

Different areas have been given different names, and SHIFT participants were also asked about their use. Each avatar initially appeared in a virtual outdoor space in the congress area, from which it was then possible to proceed wherever desired. One should bear attention that the English names of the areas may not have been remembered by all respondents (Figure 9).

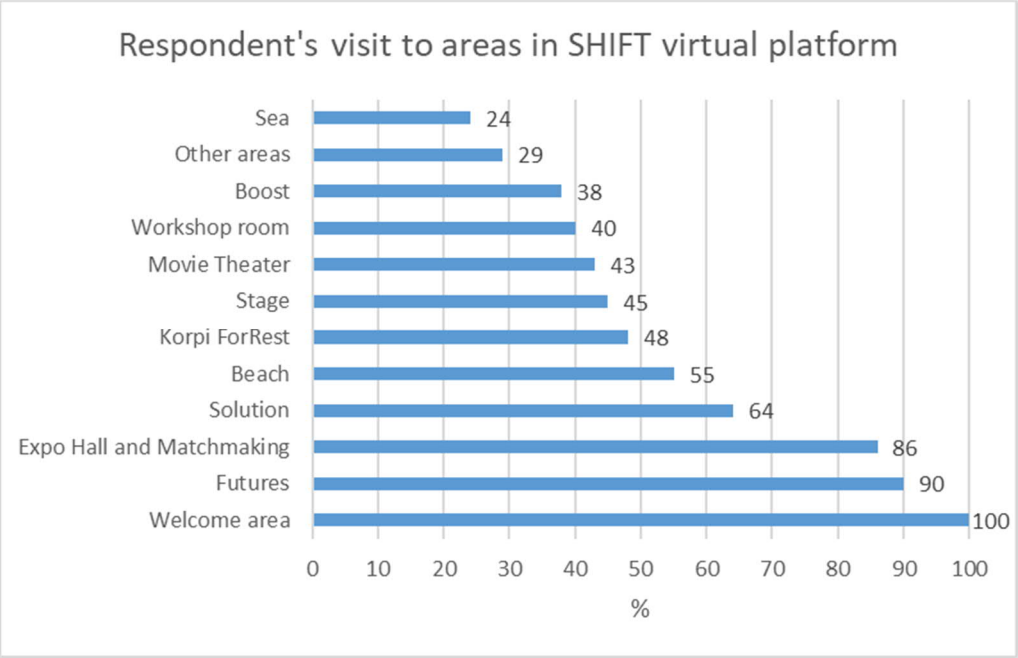


Figure 9. SHIFT event survey respondents' movement in the virtual platform sites of the SHIFT event during the event in October 2020.

3.5 Digital virtual character of avatar

In both physical face-to-face and virtual events, the participant makes choices about what he or she wants to look like at the event. The participant pays attention to how the appearance and clothing are suitable for the event and how they make the participation pleasant and effective. Before participating in the SHIFT October 2020 virtual event, and if necessary during the event, the participant was able to customize the look and dress of their avatar to their liking.

Male and female “prototypes” exist on VirBELA’s platform, and male and female characters are clearly distinct. The choice may affect avatar's physical appearance, including avatar's skin color, hair and shape and color, eyebrows, beard and mustache, and eye color. In addition to this, one can choose clothing for the avatar from a fairly wide selection. It includes different and different colored headwear, pants and skirts, shirts and jackets, as well as a variety of watches, jewelry, eyeglasses, sunglasses, etc. Avatar's look and clothing could be easily changed at any time.

Avatar is a digital visual character on a virtual 3D platform. The avatar does not have to remind the wearer, and the avatar does not have to dress or behave as the wearer does in the physical world. Eight out of nine respondents (89%) tried to edit their avatar to resemble themselves (much 50%, 39% somewhat) and very few (9%) did not at all (Figure 10). Previous studies on the creation of avatars show that users tend to modify an avatar to resemble themselves, at least in essential general features (gender, skin color, etc.). They may add details (hair color and shape, eye color, etc., and clothing) that idealize and complement their own physical features (Messinger et al. 2019). An avatar that looks a lot like a real physical person externally helps the user to identify with it and that other users are better able to imagine the real person behind it (Latoschik et al. 2016). Better identification of the user with the avatar, in turn, helps him to function more authentically and better through it (Suh et al. 2011). However, harmful features have also been observed in focusing too much on the appearance of avatars, especially in games that focus on avatars. Players can identify too much with their self-modified idealized avatars, which can increase addiction to that game (Mancini et al. 2019). On the virtual platforms of innovation events, there is hardly any danger of this dependence. However, the provocative appearance of an avatar creates attention and emotional states in individuals behind other avatars.

In general, in the SHIFT event, the main crowd of avatars looked more or less like an average attendees of a face-to-face entrepreneurship event in Finland. Almost all were fearing semiformal or casual clothing that would nicely fit into a face-to-face meeting. In addition, almost all had white skin color. There were a few clear exceptions as well, i.e. avatars that looked like persons that one do not meet in such events, at least in Finland. In the VirBelas selection, the avatars seem to look like rather fit persons in their 30s or young middle-aged person. Selecting the tone of hair and clothing one may look a bit younger or older, nevertheless, a fit and able person.

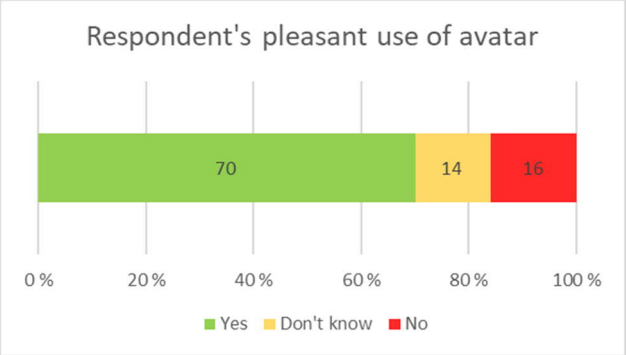
At real face-to-face events, participants may change their clothing if there is a need for it due to a change in the nature of the occasion, such as leisure, or external factors such as temperature, rain, etc. However, there is no physical need to change clothing, jewelry, or hairstyles on a virtual platform. In the VirBELA platform it is never raining and it seems not to be too hot or cold. The sun seems to go up and down, and sometimes it is more sunny or cloudy. Nevertheless, there is not physiological reason for changing the clothing as in real physical world nor the clothing never gets dirty in the VirBELA world. In the SHIFT event, most participants remained in the avatar form they had originally created. Of the respondents, almost one in four (23%) edited their character during the two-day event and more than three in four (77%) did not edit at all (Figure 10).

Figure 10. SHIFT event survey respondents' avatar during the event in October 2020.

In a face-to-face event, dress and appearance can (try to) influence the attitude of others by creating a relaxed or very businesslike impression of oneself, for example. The virtual platform can also be used to strive for this or to detach freely without joining the real self and appearance. The avatar personifies the user so that the first and last name of the participant was constantly displayed on the head of avatar. As such, others cannot be sure who is using the avatar. At the SHIFT event, respondents did not know exactly what and how avatar's appearance could affect. About two out of three respondents (63%) could not say whether the appearance of the avatar influenced how other people perceived the person behind the avatar. Few (7%) were sure that the appearance of the avatar had an effect and less than one in three (29%) estimated that the appearance of the avatar had no effect on the attitudes of others, so almost two-in-three (64%) did not know how to answer on this. For almost all of the participants, this was their first time in a virtual 3D event, so they also did not yet have experience of what impact the appearance of the avatar could possibly have (Figure 11).

Previous research, however, suggests that avatar's appearance may have a bearing on the actual user's perceptions. A particularly friendly-looking and smiling avatar brings a positive feeling to other participants, even if they have not always consciously noticed it in the look of the avatar (Oh et al. 2016). The face and expression of an avatar is thus of great importance for experiencing interaction and forming an image about oneself in virtual space. Expressions are ways to give and receive complementary social information in interaction situations, also in the virtual 3D platforms (Oh Kruzik et al. 2020). VirBELA's avatar characters also had the opportunity to show a variety of feelings, such as enthusiasm, amazement, or reflection. However, synchronous use of this and noticing such use requires proficiency in using avatar.

The avatar was moved mainly with the device's (such as laptop computer's desk) arrow keys. The movement, turning, standing and sitting of the avatar appeared quite a lot like the movement of a real person, albeit caricatured. Two in three respondents (68%) thought that using avatar was pleasant and more than one in six (18%) disagreed on this (14% could not say) (Figure 11). Two out of three respondents (67%) mentioned that they moved with avatar during the event at times without a goal. Many used it to listen to music and other social activities during the event or otherwise just moved around on the virtual platform. The avatar was able to run even on the grass, kick the ball, or dance, but it could not do socially questionable actions, such as fighting with other avatars, or climbing a cliff up or jumping down from there. Clashes with other avatars meant just going through them without any strange effect. The use of the avatar largely followed conventional social conventions, such as in face-to-face innovation events. During the performances, most of the avatars sat quietly in place and movement in the leisure facilities was more raucous. The organizer avatars also came to point out, if necessary, if any avatar just stood in front of the stage during the performances and no loud discussion was allowed during the performances. Instead, in the otherwise vacant spaces, it was possible to start a conversation without either reason, if so desired.



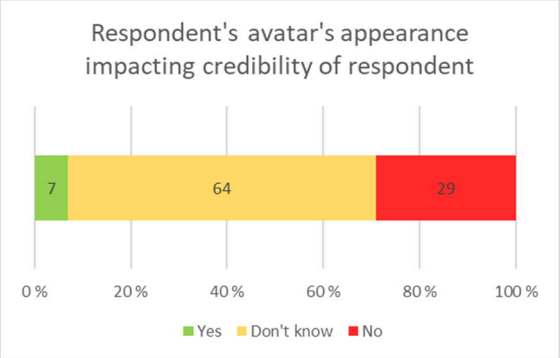


Figure 11. SHIFT event survey respondents' avatar, how pleasant it was to use and what impact it had during the event in October 2020.

3.6 Virtual platform, interaction and innovations

Restrictions on mobility and gathering and being face-to-face together in 2020 presented a wide range of challenges to the interactions necessary for the development of companies and organizations. This applies to the situation both inside and outside the company and organization. During 2020, it was hardly possible to host larger technology, growth enterprise and innovation events based on the physical presence of participants. Thus, events on a virtual platform became an alternative way to develop social interaction and innovation among innovation developers.

There are several crucial aspects in innovation activities. These include interaction and trust between actors, the opportunity to present and refine ideas and knowledge, and to adapt cognitive proximity to fit (not too large or small differences for understanding each other and develop ideas and knowledge further) the development of innovations. If physical proximity is not possible, then it should be circumvented through various means of communication. In addition to the phone, these include various tools for visual distance interaction such as Zoom, Skype, Teams, etc. Virtual 3D platforms such as VirBELA, MootUp, Breakroom, LearnBrite, Engage and AltSpace also offer this possibility.

Figure 12 shows different user perspectives from the SHIFT event on the virtual platform and its use. As noted above, almost all respondents actively used remote interaction tools and had higher education levels. Instead, VirBELA was used by everyone for the first time, except for a short try out before the SHIFT event. This must therefore be taken into account when interpreting the respondents' perspectives.

Interaction and social relations are essential in the development of innovations and, more generally, in various business and innovation events. Overall, almost a half (45%) of all respondents were of opinion that in the virtual platform of the SHIFT event it was easy to get in contact with persons they wanted, and slightly more than half (55%) either disagreed with this opinion (25%) or were not sure about it (30%).

Conversing with acquaintances, colleagues and new persons is part of social networking. Two out of three respondents (68%) talked via avatar with a former acquaintance on the SHIFT virtual platform (32% did not). There was not asked if all participants had former acquaintances in the event. Of those, who took part for the first time in the SHIFT event, clearly fewer though still a majority (56%) talked with a person they knew from before (33% did not, 11% did not know). SHIFT attracted to the event in 2020 also that kind of new people who are already networked in their fields of activities despite not having attended SHIFT earlier.

In principle, every participant had a possibility to talk through the avatar with a person they did not know in the SHIFT event. No one of the participants knew all the people in the event. However, not necessarily all wished to talk with persons they did not know from before. Similarly, two out of three respondents (68%) talked with a new person via avatar on SHIFT's virtual platform (5% cannot say, 27% disagree). It can be assumed that everyone had people in the event that he or she did not know from before. However, not all respondents might not have been interested in talking with persons they did not know.

Of those, who took part for the first time in the SHIFT event, slightly more than a half (57%) talked with a new person (43% did not or did not know). However, of those who had attended this event in earlier years, substantially more, i.e. more than three-in-four (78%) talked with a new person (22% did not or did not know). Those who were more familiar with the SHIFT event were thus much more active in making contacts to new people in the event. This suggests that experienced event participants use the event more clearly for new networking purposes. Of ordinary participants of the SHIFT event, 59% talked with a new person (41% did not or did not know), and of functional participants of the SHIFT event, substantially more (77%) talked with a new person (23% did not or did not know). Therefore, those who had a task in the event were more likely to be in contact with new people. This can mean also that the participants were eager to get in contact with the speakers, presenters and organizers.

Of those who were disappointed with the use of the virtual platform, 64% talked with a new person (36% did not or did not know). This was only slightly less than the average among the respondents. Of those, who thought that talking in a virtual platform bear a larger security risk than that of face-to-face or they were not sure about it, even slightly fewer (58%) talked with a new person (42% did not or did not know). Of those, who thought that the use of avatar was not pleasant (or who were not sure about it), 62% talked with a new person (38% did not or did not know). Thus, in general, those having certain technology-related concerns about the virtual platform were slightly but not substantially less active in getting contacts with new people during this event that was organized in a 3D virtual platform.

The easiness of making contacts depends on many aspects, of the respondent's character, general availability of persons one wanted to meet, technical issues of the digital platform or the avatar, and one's timetable during the event. Of the respondents, three out of four (76%) expressed that interaction in the virtual platform was more difficult than that in face-to-face (12% disagreed on this, 12% did not know). As mentioned, all respondents were rather unexperienced in using virtual platforms, at least that of VirBELA, and in entrepreneurship and innovation events such as that of SHIFT. Based on the author's observations, very few participants used actively any technical elements to show emotions through avatars through the VirBELA platform avatars have a possibility for it. Most avatars just remained calmly sitting or standing despite what happened during the event. One could say that ordinary Finnish participants in innovation events like SHIFT are rather calm in their expressions but in the SHIFT virtual event they showed even less expressions than in the ordinary face-to-face events. Having said, this might have been influenced by the participants' skills in using avatars (though the general use was very easy) and the general knowledge on what is a commonly expected or accepted behavior of avatars in such events. In a more relaxed virtual environment, such as in the social networking beach party after the official part of the program, some avatars were dancing, jumping or moving around more actively. However, to make the avatar move and express something, one needs to push particular buttons of the computer keyboard that thus requires some technical-functional task that is different from an immediate action in face-to-face events.

Respondents' perspectives varied widely on whether the interaction on the virtual platform was at least as good as in Zoom, Team, and similar tools (44% agree, 16% did not know, 40% disagree). Of ordinary participants of the SHIFT event, one-in-three (33%) agreed on this (67% did not or did not know). However, of functional participants, substantially more (55%) agreed that the interaction on the virtual platform was at least as good as in Zoom, Team, and similar tools (45% did not or did not know). Of those, who talked in the SHIFT event with a new person or a person they knew from before, a half (51%) agreed on this (49% did not or did not know).

Trust is one of the key elements in the interaction related to the development of innovations. Nearly half (44%) of the respondents could not say whether trustful relationships can be established on the virtual platform. On the other hand, two out of five (40%) thought they could establish a trustful relationship, and one-in-six (16%) were different from us. Such large share of uncertain people is because they did not have yet much experience of the use of such platforms and the long-term impact of the acquaintances they possibly made in the SHIFT event this year through the virtual platform.

Of the respondents, less than a half (47%) were of opinion that discussion in the virtual platform bears more security risks than face-to-face discussion whereas almost one out of four (23%) disagreed on this and almost one out of three (30%) did not know how to answer. Security risks can be of many kinds but people can wonder if external people will get to know what one talked with other persons during the event. Of those, who talked in the SHIFT event with a new person or a person they knew from before, slightly less were concerned about the security risks (40% agreed on the risks, 31% did not or 29% did not know). Of those who did not talk in the SHIFT event with a new person or a person they knew from before, very few (6%) were of opinion that discussion in the virtual platform is not having more security risks than face-to-face discussion (47% agreed on the risks, 47% did not know). Of those, who felt that the use of virtual platform was a disappointment, 46% agreed on the risks (15% did not or 39% did not know). Of those, who were of opinion that in the virtual platform of the SHIFT event it was easy to get in contact with persons they wanted, 42% agreed on the security risks of the platform (37% did not or 31% did not know). In all, perceived consideration of security risks seemed to prevent some people of getting in contact with new people in the event.

Based on the author's experience during the SHIFT event, it was possible to hear occasional conversations very clearly if the avatar was reasonably close to the other avatars discussing. Because of the microphones in use, the conversation was clearly audible, and those attending the conversation did not necessarily understand that others could hear these conversations as well. On the other hand, the active coming close of the unknown avatar could end the conversation, as in the physical world. If my avatar went actively close to these talking avatars or seemed to look at them close by, the avatars stopped talking and sometimes even moved into another place. In the VirBELA platform, there are also clearly marked private spaces in which avatars can have talks in private and one can recognize if another avatar enters these spaces. Joining into a random discussion was possible like in an ordinary face-to-face event, thus requiring verbal social ability. However, it was easier to listen through an avatar talks as an outsider than in face-to-face meetings.

Few respondents (12%) felt that the virtual platform allowed for a better focus on presentations than a face-to-face opportunity (26% cannot say, 62% disagree). Challenges to focus were not asked, but there are many. These are, for example, the new situation in the use of the virtual platform, which requires a technical focus on the device itself. Another reason was the interest to watch with avatar what is happening. During the presentations, participants had the opportunity to choose different perspectives on the presentation: for example, focusing only on the speaker, his or her (usually) powerpoint presentation material, or even the audience's views. The latter is usually the only option that one has in a face-to-face meeting. In addition, one can move instantly to another seminar room to follow a parallel session and then move instantly also back if one wants so. Such immediate zapping in the venue is not possible in face-to-face meetings. Challenges can also be brought by a restless place where an avatar user physically attended the event – it is not the physical site of the venue but it can be a busy office in one's working place or home where the family is around. Not being physically present in the venue can mean that there are more possibilities to aim to work, surf the internet or use social media simultaneously when one should focus on presentations.

There was no decisive substantial difference, at least in superficial social networking, in the virtual event compared to the physical face-to-face event. The avatar could sit or stand next to another avatar if there was room. At the same time, there was the opportunity for occasional chatting and "small talk," as in

physical events. Social distancing also mattered as many avatars moved further away if some unknown avatar (and the person behind it) came very close to their own avatar. In my experience, occasional conversation was possible, albeit at times a little more reserved than in a physical event. It was also possible to talk with a new person (through avatars) and join a group that was talking with each other. A difference is that one sees all the time the (supposed) name of the persons because the name is written all the time on the top of each avatar. The initiation of a conversation, i.e. approaching other avatars, seemed to be a bit more reserved than in ordinary face-to-face meetings. The facial and bodily expressions of avatars are still less evident than those of real persons with physical bodies. As said, to use such expressions of feelings during a conversation or meeting requires an active use of the keyboard that is an additional technical task to do that may distract the attention and focus of both that avatar who is talking and that who is listening.

It seemed that after their presentation now so many avatars immediately started to approach the speaker as it happens in face-to-face events. However, this might be because the participants were not very experienced users of avatars in such events. Furthermore, SHIFT was not a very large event this time having up to a few hundred participants and in many cases having less than 100 participants following one presentation. There were also some technical tools to facilitate a rapid checking of who is who because one could write a short bio or other information about oneself during the registration (or amend it during the event) and other participant could check that info quickly and easily before, during or after being in contact with that avatar.

The virtual 3D platform was the setting for the SHIFT event in 2020. A broader issue is if and how such events can support the emergence and development of innovations and what are the differences (if any) between face-to-face events and virtual platform events on this. The majority of respondents (53%) thought that the virtual platform could support the emergence of innovations, but more than a third of could not say whether the platform had this effect (35%). On the other hand, one-in-eight (12%) felt that the virtual platform could not support the emergence of innovations. The emergence of innovations is influenced by many factors depending on the nature of the innovations. Based on the answers, the virtual platform therefore has potential to support the emergence of innovations and innovation processes. However, this is something that needs to be explored more thoroughly.

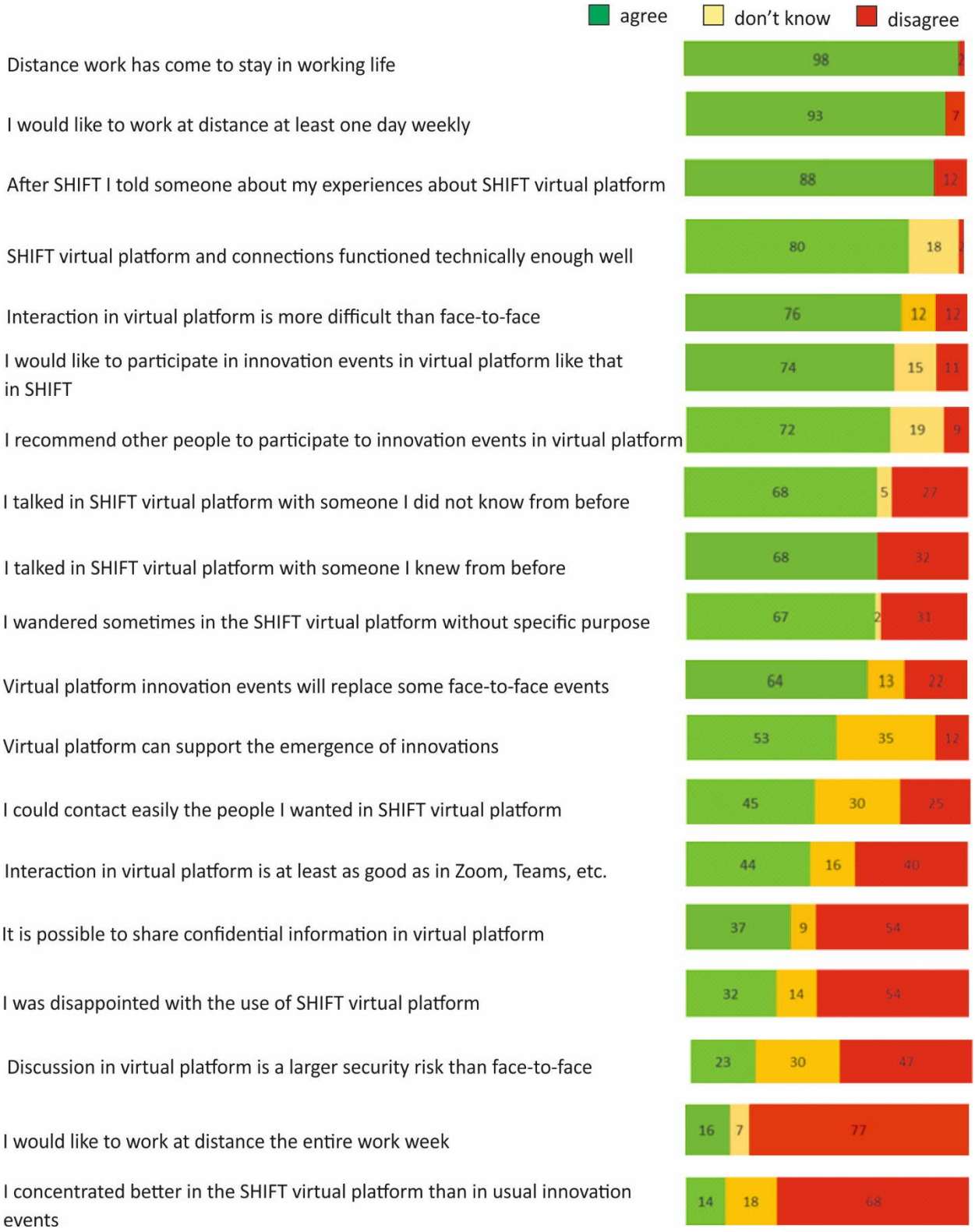


Figure 12. SHIFT event survey respondents' viewpoints on the virtual platform during the event in October 2020.

4. Conclusions

The COVID-19 pandemic in 2020 brought a wide range of constraints to events where previously the physical presence of multiple individuals in the same location at the same time had been central. Examples of these are technology, entrepreneurship and innovation events, which have become large and relevant during the 2010s. Now, in the early 2020s, there is a situation where the organization of and participation in these events cannot be based on the physical presence of the participants, at least as long as the restrictions on mobility and assembly caused by the pandemic remain in place. During 2020, very many have gained experience of both distance work and participating in various events remotely without a physical presence at those events. Thus, even if restrictions on mobility and assembly are removed when the pandemic is brought under control, there will be no return to all past practices in different events.

There are a variety of ways to compensate for physical simultaneous presence, ranging from various hybrid events, where some participants are always present face-to-face to events that take place via the Internet alone without participants gathering in one place. This is a challenge for many corporate and innovation events, where one key dimension is the interaction of organizers, speakers and participants and also the opportunity for the media to be involved in the event. The opportunity for social networking and interaction – key elements in the emergence and development of innovation – is not easy to achieve without participants seeing each other and being able to talk to each other, and also meet each other in a more serendipitous ways. On the other hand, physical constraints can be removed or modified by different realities. These include virtual reality, augmented reality and extended reality, which have already become part of various business and innovation events. Innovation development from knowledge to a new idea and further into innovations increasingly takes place in a blended immersive environment consisted of physical material, digital virtual and extended combined realities in which communication, interaction and design takes place between human, between humans and machines and also between AI-supported machines.

Virtual 3D platforms are one possibility for innovation development. In it, a person from the “real physical world” can create for himself or herself a virtual avatar that allows him or her to participate and communicate with other avatars (and the real world people behind them) in a digital 3D environment. Thus, digital 3D virtual platforms have started to be used for corporate and innovation events, especially in 2020, as it has not been possible to organize physical events. The restrictions imposed by the pandemic will eventually pass. It has already been debated whether it makes more sense to return to the former, that is, to move a large number of people to meet each other for one or a few days, but whether to continue on virtual platforms and other digital dimensions. This could lead to significant improvements in time management, support sustainable development and reduce resource use and incidental costs. What is crucial, however, is what participants get from these opportunities through virtual platforms: whether the virtual events meet the needs of the participants and help them, for example, to promote entrepreneurship and innovation processes in a useful and productive way. On a global scale, the situation is new, so there is a need for researched information on the topic and the perspectives of users (participants, organizers and speakers, for example) on their experiences.

This report looks at the two-day business and innovation event SHIFT in October 2020, which was held for the first time on the VirBELA digital 3D virtual platform. The person who attended the event downloaded free software to their device, opened the program, registered for the SHIFT event, and created a digital avatar that allowed him or her to interact with the events of the event. The views presented in the report are based on an online survey that was answered by 45 participants in the event as well as participatory observation by the author of the report on a virtual platform during the event. Respondents included event organizers, speakers, presenters from companies and organizations, and regular participants.

Respondents were highly educated experts in their fields, both men and women. Distance work had become a practice for them during 2020 and almost everyone also wanted to continue partial distance

work (at least a day a week) even after the restrictions imposed by the pandemic would disappear. In practice everyone also uses some digital interaction tools. Thus, the idea of digital remote participation in an entrepreneurship or innovation event is no longer an unusual idea to them.

Respondents had not used the VirBELA virtual platform previously at the SHIFT event or in another event, so the experience was new to them. Prior to attending SHIFT, less than half experimented with using the platform in VirBELA's OpenCampus environment. As a technical platform, VirBELA was very successful from the respondents' point of view. Four out of five respondents felt that the virtual platform and Internet connection worked technically well enough, and more than two out of three found the use of avatar pleasant.

On the virtual platform, many of the participants networked socially and otherwise did the things that are done in the physical event, i.e. followed the performances, talked with old acquaintances and new people, and moved without any particular goal in the area. Some also participated in social pastimes such as listening to music and casual meetings in the leisure facilities. The majority of respondents were of the opinion that a virtual platform can support the emergence of innovations. On the other hand, more than one in three could not comment on this because the use of platforms was still new to many.

Participating in the SHIFT event on the virtual platform was a positive and interesting experience for most. After the event, almost everyone shared their experiences of using the virtual platform. In the future, three out of four want to participate in innovation events on a similar virtual platform and almost three out of four also recommend participating in other innovation events on the virtual platform.

Central to organizers of technology, business and innovation events is to be aware of what participants, speakers and other performers want from these digital virtual platforms and what they can get. This is best achieved with research data regarding events from different perspectives. It is also essential to conduct follow-up research on the short and long-term effects of events on participants' activities. From the participants' point of view, the key is to identify not only the challenges but also the opportunities brought by 3D virtual platforms for the development of companies and organizations and the promotion of innovation processes.

References

Balthelt, H and Schuldt, N. (2014). Between luminaires and meat grinders: International trade fairs as temporary clusters. Regional Studies 42:6, 853–868.

Barral, A. (2020). Virtual conferences are the future. Nature Ecology and Evolution 4, 666–667.

Berger, M., Jucker, A. and Locher (2016). Interaction and space in the virtual world of Second Life. Journal of Pragmatics 101, 83–100.

Choudhury, P. (2020). Our work from anywhere future. Harvard Business Review November-December 2020.

Cook, A. & Kuczer, K. (2020). A brave new world with virtual worlds. How virtual worlds are the next evolution in communication and collaboration. Deloitte Insights 2 October 2020.

E-Pressi (2020). SHIFT järjestetään ensi vuonna 25.-26.8. Tuotannossa hyödynnetään tämän vuoden oppeja virtuaalisesta tapahtumatuotannosta. [In Finnish, SHIFT will be organized on 25 – 26 August next year. In the organization is utilized insights from this year's virtual program production] E-Pressi 28.10.2020, 12:10. https://www.epressi.com/tiedotteet/talous/shift-jarjestetaan-ensi-vuonna-25.-26.8.-tuotannossa-hyodynnetaan-taman-vuoden-oppeja-virtuaalisesta-tapahtumatuotannosta.html

Finder (2020). Shift Events Oy. https://www.finder.fi/Messupalvelut+n%C3%A4yttelypalvelut/Shift+Events+Oy/Turku/yhteystiedot/3150332

Galgina, T. and Yang, M. (2020). Bringing Nordic Slush to Asia: Entrepreneurial internationalization of an NGO as a social movement. International Business Review 29.

Kohler, T., Matzler, K. and Füller, J. (2009). Avatar-based innovation: Using virtual worlds for real-world innovation. Technovation 29: 6–7, 395–407.

Kohler, T., Fueller, J., Matzler, K. and Stieger, D. (2011). Co-creation in virtual worlds: The design of the user experience. Management Information Systems Quarterly 35: 3, 773–788.

Latoschik, M., Roth, D., Gall, D., Achenbach, J., Waltemate, T. and Botsch, M. (2016). The effect of avatar realism in immersive social virtual realities. VRST '17: Proceedings of the 23rd ACM Symposium on Virtual Reality Software and Technology November 2017 Article No.: 39, 1–10.

Lehtiniitty, M. (2020). Kasvuyritystapahtuma SHIFT järjestetään tällä viikolla 3D-virtuaaliympäristössä. [In Finnish, The growth enterprise event SHIFT will be organized this week in 3D virtual environment] Mobiili.fi 26.10.2020. https://mobiili.fi/2020/10/26/kasvuyritystapahtuma-shift-jarjestetaan-talla-viikolla-3d-virtuaaliymparistossa/

Makransky, G. and Petersen, G. (2020). The Cognitive Affective Model of Immersive Learning (CAMIL): A theoretical research-based model of learning in immersive virtual reality. Educational Psychology Review (on-line first).

Mancini, T., Imperato, C. and Sibilla, F. (2019). Does avatar's character and emotional bond expose to gaming addiction? Two studies on virtual self-discrepancy, avatar identification and gaming addiction in massively multiplayer online role-playing game players. Computers in Human Behavior 92, 297–305.

Maskell, P., Bathelt, H. and Malmberg, A. (2006). Building global knowledge pipelines: The role of temporary clusters. European Planning Studies 14:8, 997–1013.

Messinger, P., Ge, X., Smirnov, K., Stroulia, E. and Lyons, K. (2019). Reflections of the extended self: Visual self-representation in avatar-mediated environments. Journal of Business Research 100, 531–546.

Oh, S., Bailenson, J., Krämer, N. and Li, B. (2016). Let the avatar brighten your smile: Effects of enhancing facial expressions in virtual environments. PLoS ONE 11:9, e0161794

Oh Kruzic, C., Kruzic, D., Herrera, F. et al. (2020). Facial expressions contribute more than body movements to conversational outcomes in avatar-mediated virtual environments. Scientific Reports 10, 20626.

Parjanen, S., Hella, L. and Konsti-Laakso, S. (2012). Brokerage functions in a virtual idea generation platform: Possibilities for collective creativity? Innovation 14:3, 363–374.

Porpiglia, F., Checucci, R., Autorino, R., Amparore, D., Cooperberg, M., Ficarra, V and Novara, G. (2020). Traditional and virtual congress meetings during the COVID-19 pandemic and the post-COVID-19 era: Is it time to change the paradigm? European Urology 78:3, 301–303.

Salmon, G. (2009). The future for (second) life and learning. British Journal of Educational Technology 40:3, 526–538.

SHIFT (2020). SHIFT Business Webstival 2020. https://theshift.fi/speakers-2020/

Steinicke, F. ym. (2020). A first pilot study to compare virtual group meetings using video conferences and (immersive) virtual reality. SUI '20: Symposium on Spatial User Interaction. October 2020 Article No. 19, 1–2.

Suh, K., Kim, H. and Suh, E. (2011). What if your avatar looks like you? Dual-congruity perspectives for avatar use. MIS Quarterly 35:3, 711–729.

Uusi Teknologia (2020). Shift 2020 siirtyy lokakuulle – virtuaalisesti elokuussa. [In Finnish, xxxx] Uusi Teknologia 30.4.2020.

VirBELA (2020). Virbela: A virtual world for work, education & events. https://www.virbela.com/

Waizenegger, L., McKenna, B., Cai, W. and Bendz, T. (2020). An affordance perspective of team collaboration and enforced working from home during COVID-19. European Journal of Information Systems 29:4, 429–442.

Appendix 1
SHIFT event program on 27 October 2020

10:30–11:00 FUTURES STAGE: OPENING SHOW

Opening of the SHIFT Business Webstival 2020.

11:00–12:15 FUTURES STAGE: TO THRIVE IN CHANGE

11:00–12:15 SOLUTION STAGE: HOW CAN CIRCULAR ECONOMY AND FAIR DATA ECONOMY HELP TO REBUILD YOUR COMPANY POST-CORONA?

12:30–13:45 FUTURES STAGE: CHOOSING STRATEGIC FORESIGHT OVER FORTUNE TELLING

12:30–13:45 SOLUTION STAGE: THE HACKER WAY OF THINKING: BREAKING YOUR BUSINESS TO MAKE IT BETTER?

14:00–15:15 FUTURES STAGE: SYSTEMS THINKING AND DIGITALIZATION OF SUSTAINABLE FOOD BUSINESS

14:00–15:15 SOLUTION STAGE: ARE YOU READY TO IMPROVE YOUR FUTURE LITERACY SKILLS?

15:30–16:45 FUTURES STAGE: DIGITAL-HYGGE AND REMOTE COOPERATION

15:30–16:45 SOLUTION STAGE: WHAT ROLE CAN DIGITALISATION AND DATA PLAY FOR RESILIENCE?

17:00–18:15 FUTURES STAGE: IF GROWTH IS BROKEN, WE NEED TO EXPLORE OTHER OPTIONS

17:00–18:15 SOLUTION STAGE: HOW TO BEST PROTECT YOUR HUMAN CAPITAL?

18:30–19:30 SHIFT OFF AFTER PARTY AT THE BEACH

15:30–16:45 SOFOKUS WORKSHOP: BOOST YOUR DIGITAL MATURITY THROUGH COLLABORATION IN 2021

17:00–18:15 BALTICSATAPPS WORKSHOP: SATELLITE DATA FOR A SUSTAINABLE FUTUR

GOFORE PARTNER PROGRAM AT EXPO HALL & INSTAGRAM LIVE

CITY OF TURKU PARTNER PROGRAM AT EXPO HALL

SHIFT event program on 28 October 2020

10:30–11:45 FUTURES STAGE: DEMOCRATIC AI IS FAIR AI +

10:30–11:45 SOLUTION STAGE: WHAT MOTIVATES THE NO BULLSHIT -GENERATION TO WORK AND CONSUME? +

12:00–13:15 FUTURES STAGE: SCIENCE LEADING THE WAY FOR SUSTAINABLE BUSINESS +

12:00–13:15 SOLUTION STAGE: HOW TO KEEP OUR FEET DRY AND HEADS COOL? +

13:30–14:45 FUTURES STAGE: CO-CREATION, THE HOLY GRAIL OF INNOVATION +

13:30–14:45 SOLUTION STAGE: HOW CAN DEMAND FOR DIGITAL SERVICES DRIVE DECARBONISATION? +

15:00–16:15 FUTURES STAGE: CLOSING LOOPS THROUGH TECHNOLOGY, LEGISLATION AND INTENTION +

15:00–16:15 SOLUTION STAGE: HOW TO LEVERAGE YOUR CORE BUSINESS FOR SUSTAINABILITY AND MOVE AWAY FROM PURPOSE-WASHING? +

16:30–17:15 FUTURES STAGE: FINAL KEYNOTE, RITA MCGRATH +

17:15– FUTURES STAGE: HACKATHON AWARD CEREMONY, CITY OF TURKU +

17:30–18:30 SHIFT OFF AFTER PARTY AT THE BEACH +

14:00 ELITE PARTNER PROGRAM: LEVERAGING ON PRIVATE AND PUBLIC CAPITAL MARKETS TO BOOST YOUR GROWTH +

GOFORE PARTNER PROGRAM AT EXPO HALL +

CITY OF TURKU PARTNER PROGRAM AT EXPO HALL +