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Using emerging technologies to add value in event organizing business

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Description

The study was conducted to discover potential usages for new and emerging technologies in the event organization and management. The main aim of the research was to explore how organizers of various kinds of events could use various technologies that are currently considered emerging.

Primary data was collected by interviewing event organizers with backgrounds in different kinds of events. A representative of a company, whose emerging technology is thought to have a high potential to impact the event business, was also interviewed.

The interviews were the main source of data for the research as there is very limited access to reliable data about technologies that are currently considered to be emerging.

The study showed that event organizers were open and excited towards using emerging technologies in their events. The interviewees proposed various usages for the technologies which they believed could be used in their own events. Concerns were also brought up about the potential return on investments as well as legal concerns about collecting data during events.

Keywords (subjects)
Emerging technologies, event organizing, event managing, events, virtual reality, internet of things, smartdust,

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Tiivistelmä

Opinnäytetyössä pyrittiin tutkimaan uusien ja nousevien teknologioiden mahdollisia käyttötarkoituksia tapahtumien järjestämisessä ja hallinnoimisessa. Tutkimuksen päätavoite oli selvittää; miten erilaisten tapahtumien järjestäjät voisivat käyttää tapahtumissaan hyödykseen teknologioita, jotka tällä hetkellä luokitellaan nouseviksi.

Erilaisten tapahtumien järjestämisessä mukana olleiden tahojen haastatteluja käytettiin ensisijaisena tiedonlähteenä. Haastateltaviin kuului myös edustaja yrityksestä, jonka palvelut toimivat pitkälti nousevien teknologioiden ympärillä.

Haastattelut toimivat tiedon ensisijaisena lähteenä. Luotettavaa tietoa, etenkin nousevista teknologioista on tällä hetkellä saatavilla hyvin rajallinen määrä.

Tutkimus osoitti; että tapahtumien järjestäjät ovat avoimia ja kiinnostuneita nousevien teknologioiden käytöstä tapahtumissaan. Haastateltavat ehdottivat useita käyttötarkoituksia teknologioille, joita he uskoivat voivansa käyttää hyödyksi omissa tapahtumissaan. Haastateltavat ilmaisivat myös huolensa teknologioihin laitettavien sijoitusten kannattavuudesta sekä erilaisten tietojen keräämisen laillisuudesta tapahtumien aikana.

Avainsanat (asiasanat)
Nousevat teknologiat, uudet teknologiat, tapahtumien järjestäminen, tapahtumien hallinnointi, tapahtumat, virtuaalitodellisuus, esineiden internet, älypöly,

Muita tietoja

Contents

1 Introduction

Technology business as a field is currently in a state where new development is happening constantly. Around fifty years ago, in the mid-20th century inventions like phone calls with picture, were considered science fiction. By the year 2022 the expected number of smartphones globally is 6,8 billion units according to the “Ericsson Mobility Report” (2016). These smartphones that we now carry in our pockets are able to do what was considered to be science fiction in addition to many other things they can now do. Emerging technologies are like the name suggests new technologies that have characteristics and uses that have high potential to be adopted by consumers on a large scale. Some technologies that have gained lots of visibility by general public are technologies such as the internet of things and virtual reality. At the same time, some fields of business have experienced only small or no changes. Event managing and organizing business could be considered as this kind of field. There have not been major changes in the ways people enjoy for example a football match or a concert.

The topic for this thesis was from a thought that came up while watching an ice-hockey game, “Would it be possible to watch the game with virtual reality headset?”. After discussing about the topic with our thesis supervisor we eventually refined it from just talking about virtual reality to new and emerging technologies as well as from only sports perspective to events in general. So, the question changed from questioning the possibility to asking why new technologies are not used yet and how they could be used. As we had mutual interest towards technologies, new and old. It was decided that this thesis would be done as a pair.

There has been little to none prior research towards the attitudes and perceptions of event visitors and event organizers on new technologies. Multiperspective approach was chosen as the research method to gain data from various of different kinds of sources, this enables the researchers to gain views and opinions from different kinds of events and technology pioneers about the topic. As the topic is not centered around just one kind of event

there was interviews that were conducted with people who have been part of organizing events like eSports and weddings. To gain even more perspective on the matter it was decided to approach companies that are working using technologies that are currently emerging. This research aims to explore the attitudes towards emerging technologies and possible uses for them in the event organizing and managing business.

The main research question is:

- How event organizers can take advantage of new and emerging technologies to add value to their events?

The sub research questions are:

- What emerging technologies are most likely to have an impact in event organizing and managing business?
- Can emerging technologies help solve current problems of the industry?

As the research aims to explore the attitudes and perceptions in general and not just within one type of event, it is beneficial to keep the questions open and not too specific. This is also because different kinds of events can gain additional value and benefit through different technologies and solutions, as a company that organizes events around football matches might face different challenges than a company organizing music festivals.

First part of the thesis reviews literature that has been available during the writing process of this research. Literature regarding some of the technologies that have been most discussed during the interviews has been limited as the technologies are new and not a lot of research on the field has been done regarding them. After literature review methodology of the research for this thesis is explained as well as why specific methods and approaches were chosen.

Results from the interviews that were conducted will be presented after methodology chapter. In the results chapter, we compare the different

opinions and ideas of the interviewees who have background in different kinds of events and/or new technologies. When results have been presented and explained they will be concluded and explained how the researchers have ended up with these conclusions. In addition, suggestions for future research around the topic. Last part of the thesis lists the resources used during this thesis as well as appendix of additional information and data.

2 Literature review

2.1 Event Management Business

Experience economy is the business of creating experiences for customers (Seo, 2013). Event management business is used as a name for organizing and creating these experiences through events. Experience economy is not only limited to events, but it also contains businesses that have been established around for example bungee jumping and waterparks which also offer customers experiences but they cannot be considered as events. According to Seo, (2013) Pine and Gilmore (1999) explained the difference between a service and experience as follows:

> *when a person buys a service, she purchases a set of intangible activates carried out on her behalf. But when she buys an experience, she pays to spend time enjoying a series of memorable events that a company stages to engage her in a personal way.(72.)*

Event management is the business of organizing and managing different kinds of events. These events can be varying and different; everything from music festivals to theatre shows, events can also be for example trade shows or a sports match. An event is a planned social or public occasion. According to Bowdin (2006) the birth of event industry and business was caused by commercialization of popular celebrations like May Day and Midsummer Day. Even though different kinds of events and festivals have been organized for

over hundred years the increase in the amount of leisure time of working people has caused an increase in the number of events that they go to, providing event organizers and managers with new opportunities. The increased amount of leisure time has also created demand for different kinds of events in addition to the more traditional music festivals and theatre (7.) For example, during August of 2016 there was an event that was built around Finnish Youtube creators and their fans. This event called “Tubecon” gathered over 10000 people together around a scene that is still new in Finland (Määttänen, 2016). The scale of different kinds of events that event management companies can organize can vary greatly, it can be a small gig in a night club for a local band that might attract less than a hundred people or an event like the summer Olympics which brings millions of people to visit the country where the event is held. It is safe to assume that opportunities in event management business are close to limitless.

Through emerging technologies event organizers could possibly add more value to their events or increase the efficiency within them. The other things that emerging technologies bring with them are completely new events, expos and meetings only based on the new technology. For example, Silicon Valley VR expo attracts hundreds of VR enthusiasts as well as experts and developers in the field. It is likely that Augmented Reality and Mixed Reality expos will follow. Event organizers can also find new sources of income instead of just the regular participant flow and advert money that you’re likely to get from the event.

2.2 Value Network

Value Network is a term set to describe the relationships network between individuals, companies and organizations. In these networks those companies or individuals that are involved are helping each other to generate value for each participant. This value can be tangible or intangible. Tangible value can refer for example to goods that are needed to produce a product, in most cases the company that is exchanging the goods is gaining monetary value.

Intangible value can be used to refer for example knowledge. (Grudinschi, 2015.) If all participants of value network are not contributing equally in terms of providing others as well as receiving, the overall system may become unstable and even collapse (Allee 2003, 238.)

Visual mapping of a value network of an organization or a company can help in identifying the strong and the weak points of its operations. On a company level examining the value network of a company can also help generate pathways to generate better value for other organizations within the network. (ibid., 226.) This value network mapping method is not only applicable to networks on company level but also within the company. Having employees do their own value networks in their work environment could also benefit an employer to optimize the working processes in the company as it efficiently displays the dynamics of employees within the work environment. According to Grundinschi (2015, 5) Allee (2011) introduced three basic elements that should be used when mapping value networks:

a. Roles, these represent the different participants in the value network that can be individuals, companies or organizations

b. Transactions, these are displayed in the mapping process as incoming and outgoing lines from each participant of the network.

c. Deliverables, the tangible or intangible objects that are moving from participant to another in the transactions. These can be different kinds of assets or for example knowledge.

With these elements, a basic value network map can be created to gain understanding of all the factors that are affecting operation of a company or an individual. In addition, each of the basic elements can be assigned a value for example from low to medium to high, this way the most valuable chains in the network can easily be identified.

According to Verna Allee (2009,) value network analysis can be used to fill in the analytical gap of previously popular organizational performance tools. As

the previous methods have had the tendency to only recognize the business processes or human interactions the value network analysis can be used to bring the two aspects together so that creating or reforming new and better working organization structures is possible (238.)

2.3 Emerging Technologies

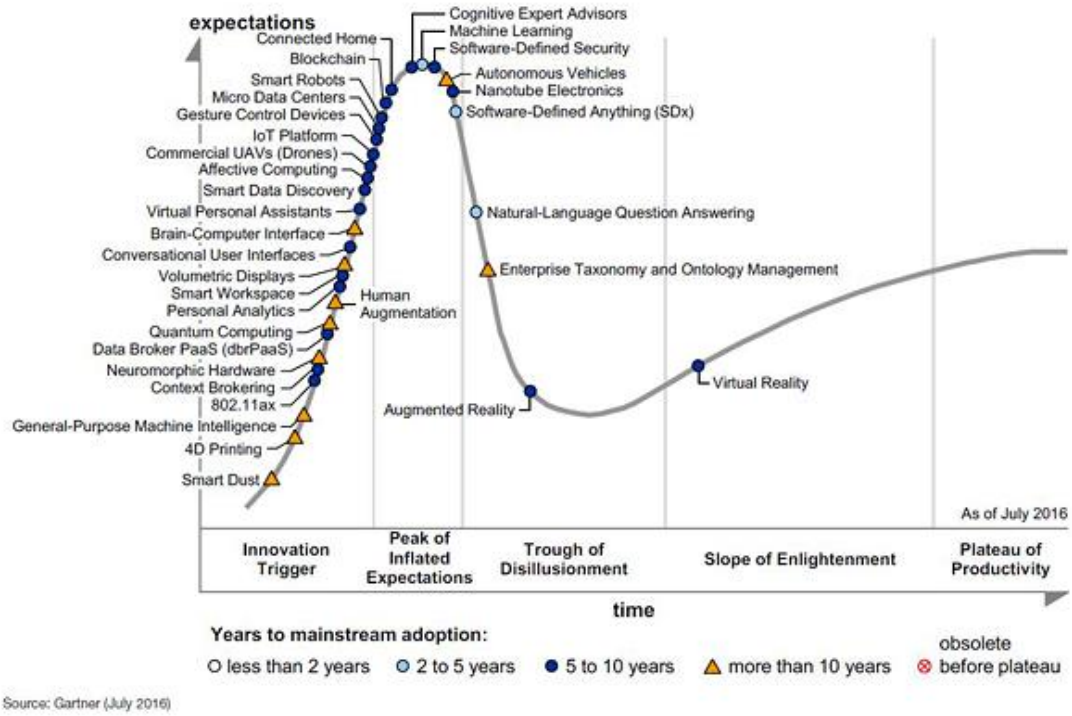
Emerging technologies are technologies from various fields that have high possibility of changing the ways that some industries, organizations or even individuals operate in the future. These kinds of technologies are in most cases based on new innovations but they can be also developed further from previously recognized technologies.

> *A radically novel and relatively fast growing technology characterized by a certain degree of coherence persisting over time and with the potential to exert a considerable impact on the socio-economic domain... (Hicks,2015, 13).*

As the technologies that can be considered emerging are varying each year, there is a restricted amount of scholarly reviewed and reliable publications that are discussing emerging technologies as a whole, rather than a specific technology that is considered to be emerging. However various organizations are publishing lists of technologies that are highly likely to have an impact on the socio-economic domain. These lists have been examined to determine the currently on going trends of emerging technologies as well as observed what technologies might have potentially the highest impact on event organizing business in the years to come. These technologies are being presented further on the paper. Different techs from the Gartner Curve have been filtered and discussed more in the paper and picked because we see that they could be the most significant ones for creating more value for event organizers. Different stakeholders will also get their voice heard so their opinions will be noted whether the picked technologies will be meaningful for the stakeholders or not. Based on the popularity of certain techs (Internet of Things, VR/AR) we tried to pick the most discussed about, but also ones that might have surprising outcomes or uses for event organizers. The stakeholders will know how exactly the new technologies can or cannot affect their daily jobs. This

helps to gain the views from many perspectives and not just from the premade assumptions based on the technologies.

Multiple sources publish lists of technologies that are considered as the biggest emerging technologies in the future. The technologies on the lists are varying depending on the source of the list as well as the year of the publication. One of the most well-known publishers of these lists is an American research company Gartner that publishes a “hype cycle” that is set to display those new technologies that are having the most publicity and the highest possibility to be adopted by the public. Another resource that publishes this kind of list is the World Economic Forum. Even though these lists are often published around the same time, these lists contain very different types of technologies. In the Gartner hype cycle of 2016 the Internet of things platform has just reached the peak of inflated expectations and it is expected to hit the mainstream adoption in five to ten years (Gartner, 2016.) At the same time the list from World Economic Forum is explaining that nanosensors and internet of nanothings would be the number one emerging technology at the current moment (Cann, 2016).



Source: Gartner (July 2016)

Figure 1. The Gartner hype cycle of emerging technologies 2016, (Gartner, 2016)

As we can see from the graphic above majority of the technologies that Gartner rates as emerging are still very much having the first phases of their process of being adopted by the public. All the technologies listed have been put under three key technology trends by Gartner. These are “Transparently immersive experiences”, “The perceptual smart machine age” and “The platform revolution”. Augmented Reality and Virtual Reality being the closest to be adopted by the public. This list alone contains multiple technologies that could help event organizers to capitalize by adding value to their events(Gartner ibid.)

Even though these lists and hype cycles have been accurately describing the technologies that would catch on in the previous years it is still important to remember that these are anticipations and predictions instead of an absolute truth of what the future of technology will be. It is possible that an innovation could suddenly come through and make multiple different technologies that are anticipated to be the next big thing suddenly obsolete.

Virtual- and Augmented reality

Virtual reality (VR) is an artificial environment created with software and it is displayed to the user so that they will see and accept it as a real environment (Rouse, 2015). Virtual Reality headsets have already hit the markets; For Example: Oculus Rift, PlayStation VR and HTC Vive are ready products which have internal display screens built-in. These headsets are made mostly to the people playing games but they are compatible with other entertainment as well. Another section of VR headsets is Mobile VR-sets; such as Google Daydream, Samsung Gear VR and Google Cardboard. The mobile-VR devices offer you a frame to put your smartphone into and they usually have only lenses inside, that help one experience the Virtual Reality from the screen of your phone. YouTube has offered its users an opportunity to watch certain videos in 360 degrees since March 2015; mainly meant for the users of

VR-sets (Lopez, 2015.) It is also possible to watch any video with a VR-Headset.

Figure 2. HTC – Vive; Virtual Reality gaming headset. (De Waal-Montgomery, 2016)

Augmented Reality (AR) is a technology that layers computer-generated enhancements on top of an existing reality to make it more versatile through the ability to interact with it. (Lindsay, 2015) Unlike VR, Augmented Reality isn't yet on the level on which it would be possible to start producing AR headsets. Instead AR Is used on the side of different applications and software. (like Pokémon Go and Google Maps) AR-technology is being used on smart glasses like Microsoft HoloLens, but the product isn't yet affordable for a regular user. The mixture of AR and the actual reality is called Mixed Reality (MR) which is what you see through lenses while using the product.

Some TV Broadcasts have been already made into 360° videos. Nelonen and Kiinteistömaailma made promotional 360° videos of Finnish Talent which were compatible with VR-headsets. The next big (and important) step for event organizers could potentially be broadcasting their own events on VR-compatible platform.

Internet of things

Internet of Things (IOT) means that everyday household devices and objects could have access to the internet. This would mean that items could connect to other objects. If the object can be turned on and off, it is most likely going to be IOT compatible eventually. According to Gartner's estimation, (Gartner Inc., 2013) 26 Billion devices will be connected to the internet by 2020. Adding objects to the circle of IOT can be cost-efficient compared to creating completely new devices to add on the circle of IOT. The most important thing on Internet of Things is that so many different objects can be placed on the same circle whether they are highly sophisticated or some everyday objects. Event organizers and managers might be able to get a clearer vision of the totality of their event through internet of things. For example, it's possible to see if everything is at the right place and working with one glance, once all the ''Things'' are connected to IOT (Morgan, 2014)

Smart dust and volumetric display

Smart dust refers to a ''network of tiny devices equipped with wireless micro-electromechanical sensors aka MEMS. (Rouse, 2009) Smart Dusts MEMS can be used for example as: GLONASS systems, Sensors that measure air pressure or heat, as optical switches, cameras or as safety measures for buildings. The concept of smart dust is that in the future people are able to produce cost-efficient; even cheap; sensors that can serve in multiple purposes. Thanks to the small size of MEMS, it's possible to use the concept in places where it hasn't been possible before. Michel Maharbiz was able to control a beetle with the help of smart dust already at 2009, so already by 2020 there shouldn't be many devices or objects that couldn't also benefit of smart dust. (Woo, 2015) Especially with the recently found technology that combines smart dust with a camera; event organizers could benefit from this by spreading the dust across the event area, providing a better experience for

the ones watching it through a stream or broadcast. Especially if it's watched with VR-glasses.

Volumetric display is an alternative way to reflect images and pictures on a surface.

> *Volumetric displays create visual representations of objects in three dimensions, with an almost 360-degree spherical viewing angle in which the image changes as the viewer moves around.* (Gartner Inc., 2013)

Volumetric Display creates hologram-like pictures that stand out from other surfaces viewing an image, thus being more appealing for anyone watching.

Live streaming and broadcasting

In this research, video and audio streaming and broadcasting is discussed. Streaming and broadcasting is when you are being sent a signal that lets you watch or listen to the content in real time. Main difference between the two is that Broadcasts send you a single signal that you share with all the other watchers/listeners. (Like TV or Radio signals) Whereas Streaming works in one-on-one interaction between the two parties even there was multiple people watching it. A market research firm 'Markets and Markets' assumes that Video Streaming Market will be worth 70.5 Billion USD by 2021, it currently being about 30.3 Billion. (Markets and Markets, 2016.) Streaming is a popular way to share video, and live video especially, as the Market research also suggests. Small events are more likely to be streamed to the internet than broadcasted on TV, because it's much easier and cheaper than getting it on air. This is because different streaming platforms have made it affordable to provide a stream. (For example Twitch, Periscope and Youtube) Wider audience can be reached through streams than broadcasts, because on most websites there is no restrictions from which country you are watching. Income through streaming comes traditionally from adverts and other promotional clips during the stream. For some streams and streaming platforms you are supposed to pay a fee, such as Netflix, to be eligible to watch the content inside. Watching live-streams on the other hand is usually

free of charge, which is one of the reasons that there is almost always an audience.

2.4 Synthesis of framework for the study

Events are supposed to give new experiences for the customers, and event organizers are trying to look for new ways to make the customers stay more pleasant or provide them new experiences. This is where Emerging technology pioneers can step in and provide something new for the customer and the organizer. In a situation where event organizer and technology pioneer make a collaboration that suits the customer, everybody benefits. Most of the emerging technologies might be tricky to use, so in order to start an effective value network, the technology must be simple for the customers to use or to monitor. Many of the emerging technologies can be of use for both organizers and customers, but the new technologies should be used in an experiment- like environment before used widely on events. If customers feel like the technology used isn't giving them any added value, so will the organizer. This leads to the point where Value Network between the three stakeholders won't come about. Currently the Value Network is happening between the organizer and the customer. Adding emerging technologies to the cycle early enough will help the organizer climb to the top amongst the first. This is important because these technologies most likely will be used widely and by everybody in the future so it's of great value to the organizer because their customers can now be the first people to experience that.

3 Methodology

Inductive was chosen as the research approach of this paper. There were no pre-hypotheses developed before the research process and the inductive approach as a method offers the best starting point for the purposes of this kind of research where theory is formed based on data collected (Saunders, Lewis & Thornhill 2009, 126). The purpose for this study is to learn about the preconceptions of event organizers on the future of their field and more specifically the effects of new and emerging technologies to that field. As the principal way of conducting the research is to interview experts of the field as well as other people who are organizing different kinds of events and to describe some ways that emerging technologies could be used in event organizing business, the study purpose would be described as descripto-exploratory (Saunders, Lewis & Thornhill 2009, 139). By having two researchers going through the interview material, both individually and together, has enabled research triangulation that has improved the quality of the research due to being able to compare interpretations of the interviews by the researchers. The most realistic solutions could be reached by synthesizing the ideas obtained from the collected data through the interviews. In order to come up with potential usages for emerging technologies in event organizing business.

Multi-perspective method that is used to look at the research problem from three different perspectives: technical, organizational and personal. These perspectives interact with each other and each has a different objective that is to be fulfilled. The Technical perspective aims to solve problems and through analysis create solutions for those problems. Objectives of the organizational perspective are action, process and stability. And the objectives of personal perspective are power, influence and prestige (Linstone, 2003.) In order to gain the primary data from each of these perspectives interviews were chosen as a mono method for gathering qualitative data. Enquiries were sent to possible interviewees about their interest in participating in the research. These enquiries were sent to people that run technology companies that

operate in fields of one or multiple emerging technologies as well as people that are linked to organizing various kinds of events.

The research aims to explore and discover the attitudes towards usage of new and emerging technologies within the business of organizing events. In addition, the purpose is to find out different ways of using new technologies in events of different kinds. Emerging technologies as a concept is changing almost annually. This means that it is to be noted that the emerging technologies that have been discussed in this research have been considered as “emerging technologies” during the fall of 2016 and the spring of 2017. Technologies presented in the literature chapter were considered to be the most likely ones to have an effect on the event organizing business by the researchers as well as the participants. As emerging technologies are a broad concept this kind of limiting was necessary.

Qualitative data was collected for the research through interviews that were held during March of 2017. Interviews were conducted by meeting face to face, on the phone and via Skype calls through internet. Participants of the interviews have been participating in organizing and running different kinds of events or worked with new and emerging technologies. The interviewees were chosen from different kinds of events to gain wider understanding of the preconceptions in general within event organizing business. The people interviewed were:

Iiro Kalli, official electronic sports (in future referenced as eSports) referee trained by the Finnish eSports Federation SEUL Ry and one of the few officially trained eSports referees in Finland. Iiro has experience as an eSports referee from few competitive gaming events held in Finland as well as being participant in them before.

Petri Kaijansinkko, executive of Jyväskyläs finnish baseball team Kirittäret. Among other things Petri is in charge of marketing and sales for Kirittäret, he also has a long list of other finnish baseball teams that he has worked for

previously as well as few ice-hockey teams around Finland. He has also worked as the chief executive officer of Superpesis which is the highest league in finnish baseball.

Soile Niinikoski runs her own business called Elämystuotanto that produces and develops different kinds of events. Some of the latest events Soile has organized include multiple wedding fairs and leisure time fairs.

Miikka Sipilä is IT engineer student who was one of the main organizers of PowerLAN eSports gaming event. He is also an associate producer for X-mas JKL that is being held in December of 2017. Has participated also in organizing events such as “Jyväskylä game jam” “Stage 142” and upcoming “Jessembly”-event.

Renne Hirsimäki is studying information systems in university of Jyväskylä for the 4th year. In addition he has been organizing an event called “Spotlight” while cooperating with Jyväskylä entrepreneurship society. Spotlight event aims to help students to develop their skills with the help of professionals through panel discussions, workshops and speeches.

Tero Uuttana, producer of an event called “Yläkaupungin yö” that is held every spring in Jyväskylä. A city festival that hosts wide range of different kinds of events around the city of Jyväskylä that are suitable for all ages and sizes. In 2016 Yläkaupungin yö had over 60 venues and even more events within those venues all available free of charge.

Raine Pulkkinen is marketing coordinator, promoter and publicist for JELMU the live music association of Jyväskylä as well as Tanssisali Lutakko, a well-known finnish show venue.

Teppo Laine is the restaurant manager at Tanssisali Lutakko. Teppo works closely together with Raine Pulkkinen on the field of marketing especially with videos.

Ilmari Huttu-Hiltunen founder and CEO of Rakka Creative. A company that produces cinematic virtual reality and 360-degree video. Has multiple years of experience on the field of media content and technical production.

3.1 Data analysis

Inductive approach will be used to analyze the data as the whole study is based on qualitative responds. First the most mentioned topics from the interviews will be summed up and then grouped them to see which topics had the most similarities between different interviewees.

Variables That studied variables were how the individuals saw emerging technologies (whether they would be useful for them or not) and different challenges that the stakeholders had. We also wanted to see how the individuals saw the future of their own profession/field and naturally the answers varied.

Variables are measured purely by the differences and similarities between the views of the interviewees. The answers are compared between each other and grouped up by similar views of the future/tech.

How was the data analyzed?

All the interviews were recorded in audio format by using mobile phones and a separate voice recorder. The recorded audio files were listened by both of the researchers afterwards. The key ideas and concepts were listed under each interview question from all of the interviews. An example of the interview transcription as a whole, can be found in the appendix of the paper. We compared each correspondent’s answers and our notes between the researchers to agree on the things we understood from the interviews. We did it this way to avoid having misunderstandings from the interviews. After this

we categorized the answers so that the correspondents whose opinions were same about the questions were on one list. If for example question one had 4 positive answers, 3 negative and 2 neutral; there would be 3 lists of names under that question. Some answers were narrow so later in the text we tell what kind of section of the research group had either a positive or negative view of the question. If the answers were broader and unique, they are displayed as citations.

3.2 Verification of findings

Internal validity

The goal of the interviews was to see how event organizers and other stakeholders view the emerging technologies and if they could be used to add value for them. We were also looking for things that are problematic for the event organizers and see if some of the new technologies could help with those problems or challenges. Our research questions were how could event organizers gain value or use emerging techs to their advantage and which of the techs would have biggest impact on the field. These questions were answered during the interviews, telling us whether the event organizer saw value on the techs or not. Questions were answered and conclusions can be made from them, so the validity of the research remains.

External validity

The findings of the research can be generalized at least in Finland, but there could be some regional differences. Most of our interviews were from the city of Jyväskylä, so every Finnish region might not have the same problems with event organizing. Most of the challenges and findings from the interviews can still reflect to other Finnish events.

Reliability

Our findings can be reproduced by other researchers, but not into perfect extent as it does depend who they will interview. There is no reason to doubt the credibility of our interviewees as we know quite a bit of their backgrounds and past experiences in event organizing business. we also wanted to hear their views of what the future might hold, so opinion based questions ‘’can’t’’ be unreliable. We used a big variety of sources; from different kinds of event organizers to tech developers. Multiple people from same fields (sports, expos and concerts) were also interviewed to get answers from wider perspective compared to only interviewing (for example) one sports event organizer. Our data collection technique should have been fair enough. We only asked open ended questions and avoided leading interviewees into certain conclusions.

Objectivity

The interview data was studied by both researchers individually. We also took our own notes of the interview records and compared them afterwards to see if we came to the same conclusions with each other. After that, possible misunderstandings were discussed to form a summary of each interviewees opinions for the questions. If all the recordings were given to another researcher to listen, we believe that they would get the same results as we did is highly likely. For data analysis technique, content analysis was used to summarize the overall views of the stakeholders. If the opinions were far off between the correspondents, that is also mentioned in the result chapter. We believe we followed the guidelines of the data analysis technique in a right way. The researchers tried to stay as objective as possible while analyzing the data, believing what we hear instead of making assumptions. This is the reason the data was analyzed multiple times by both of us.

4 Results

4.1 Attitude towards technology and changes

The responds of the interviewees about their attitude towards technology followed a straight line. All the interviewees either said themselves or agreed on the fact that they do need technology before, during and after the event itself. Two of them admitted that they are clumsy with technology themselves, but they said that they wouldn't be standing in the way if more technology were to be implemented on the events. Over half of the people we interviewed defined themselves as early adapters or said that they are interested in the upcoming technologies. The overall attitude towards technology and the emerging ones was positive already in the very start. One person who claimed that he is very clumsy with technology said that the kind of event he is marketing and organizing needs to reach the expectations of the crowd in order to succeed. It was good to notice that even the ''late-joiners'' (technology-wise) see that they need to develop and adapt with the technology around them instead of sticking to old habits. These individuals also ended up having the most unique ideas of how the emerging technologies could be used to their advantage on their own fields.

The attitude towards changes in the field resulted into a bit similar responds as well. Most of our interviewees were part of the 'new generation' (as described by themselves) and the main thing they responded when asked about the attitude towards changes in the field was that the 'old school' event organizers might stick to what has worked before and refuse to change with the society. Despite the younger generation said that the older organizers might refuse to change, the old schoolers we interviewed were open towards the change. The most general answer was ''It depends of the people organizing.'' The events where everything happens around the technology (e-sport events and technology expos) are even more forced to change with the

new technology releases, but we also noticed that those interviewees were most critical about individual technologies presented.

When asked do the people believe that there would be big changes on their field, everyone responded no. Some small things were mentioned, like the need to turn advertising into something different it is currently, but nobody saw that anything significant was to happen in the near-future.

When we asked the interviewees about their fields future in ten years from now, we received the most diverge answers of the whole study. Some saw that in ten years the events would turn back to their roots, making the social aspect of them more important. People would return to the occasions physically instead of watching them through streams from their own home. Some saw that in ten years e-tickets (Paying the ticket for the possibility to watch it in live from home) would cover the most of the ticket sales instead of the tickets sold for the event itself. These being the reverse opinions, about half of the people saw that in ten years the events will look pretty much the same, but they will rely much more on technology than they have so far. Over half of the respondents mentioned Virtual- or Augmented realities and how they will most likely be used in ten years, but it was also said that the VR/AR-sets need to become much more common in households to be used in event organizing.

Even emerging technologies aren't likely to be part of most of the events for a while, it would be important for the event organizers to understand and prepare for the actual demand of them. The technology pioneer (Huttu-Hiltunen) that was interviewed but it this way:

> *If an event wants to be ready for the coming expectations and new standards, they need to start using the emerging technologies as soon as possible, even if they wouldn't benefit from them as much as they wanted to in the beginning. Being one of the first events to handle the up-coming technologies will give a huge advantage to them. If one must start learning the technologies when they are already a requirement, it will be too late(2017.)*

4.2 Value added

Whether the emerging technologies will add value for the people interviewed or not divided the opinions. Some respondents saw that for example new ways of streaming and watching the event would help solving their current problems. ‘’New ways to watch a live sport event could potentially attract new (younger) watchers’’, Said one correspondent referring to VR-streaming. In most cases the interviewees said that they’d be interested to use technology in their favor, but they don’t know exactly how they could help their event to solve the current problems OR increase sales through the emerging technologies. The cost-efficiency was also something almost everyone interviewed talked about. Most believed that spending more money on technology during events is only added expenses for the organizing and thus un-necessary. The reason this was the opinion was because the correspondents either didn’t see any use for the technologies, or thought that they would only add the customer interest slightly, leaving them without any additional income through those technologies.

If VR/AR- glasses were to become an everyday item, over half of the correspondents saw that they could add value for their events or to some other events. Augmented reality glasses for example could aid you to the place you are looking for, much like using a navigator but in a smaller scale. Looking for the shortest bathroom line or closest restaurant could then be easier. Majority of people will first need to learn how to use the technologies so they can benefit both organizer and customer.

4.3 Potential usage

Most interviewees saw potential usages for emerging technologies within events whether it was during the event or at a time of organizing it. When the interviews were scheduled with the interviewees they were sent a list of few emerging technologies that the researchers saw as most probable to have an impact in this field, these emerging technologies were chosen off the latest Gartner curve and each of them had a short explanation of the technology and

source for additional information. In most cases the interviewees believed that technologies like virtual reality held potential to be used in the events they have been organizing or were organizing currently. While the potential was seen, when asked how they thought that technology like virtual reality could be used, most interviewees didn't have a clear answer for the question. After few interviews we had example usages to present for new interviewees, examples that were ideas from the previous interviews.

One of the potential usages presented by interviewee was to use internet of things to give the audience and customers of a sports event better understanding of what is currently happening. While watching sports from television you could hear analysts and commentators talk about the matches which was seen a more helpful way to get yourself to understand a game than going to the match itself and hear the announcer yell something every once in a while.

> *I have a vision of Pesäpallo's rules and goals to be explained to the watcher through small earpiece that is given when the match starts, from which you can hear a separate commentary from. Someone would commentate the game so that the new watchers understand what is going on (Kaijansinkko, 2017.)*

This example came from experiences of watching Major League Baseball (MLB) as well as the final of the National Football League (NFL) better known as Super Bowl. In both cases the basic idea behind the sport was somewhat familiar to the interviewee but he felt like having deeper understanding and knowledge about the players and rules of the games would help him follow the them. This could be done in similar fashion that some big tourist attractions around the world hold tourist tours where visitors are given headphones that have pre-recorded guided tours. Internet of things was seen as a potential way of achieving similar results in real-time.

Volumetric display as an emerging technology was viewed as a good way to advertise events around town and few interviewees even though that they could use volumetric displays at the events themselves. Additionally, virtual reality environments were considered to have potential to be used in

advertising before the date of the event. With virtual reality, the potential customers could have a brief immersive experience of what the experience of going to the event would actually be like. On the field of sports events they have very recently in Finland started using digital advertisement so using volumetric displays was not seen as very likely technology to gain popularity within that field in the near future.

Interviewees that were attached to events like sports matches and events with program like panel discussions also believed that in the future live streaming of the events would become even more common and accessible to people. Recently 360-degree videos have started to gain popularity, mainly due to platforms like Youtube and Facebook being able to play 360-degree video. This technology paired with virtual reality headsets and live streaming could enable more people to have a more immersive experience of events anywhere. Especially in the cases of events where there is a good variety of ongoing program simultaneously as there is lots of content to be viewed. This was the view point of our tech pioneer interviewee as well. He also pointed out that this could help the event organizers to advertise the event for even wider audiences.

One aspect of using emerging technologies in events that was brought up by majority of the interviewees was gathering data from the events. Technologies like smart dust and internet of things could be used to gain data not only for the event organizers but for the use of customers as well. One of the interviewees was attached to an event called Yläkaupungin yö. As the event is spread out on a large area around the city of Jyväskylä another aspect that makes it hard for the event to gather data at the moment is the fact that it is free to attend. Using various emerging technologies to gather data in real-time could help the event visitors to see for example what venues are full or where people are heading to. This would also benefit the event organizers as they could map out what areas and places at the events attract the most people. Based on the data the interviewees thought that they would have a better idea on what kind of improvements they could make to increase the overall interest rate of people towards their events.

4.4 Problems

While gathering data about the event visitors was seen as a really useful tool for event organizers to gain a better understanding about what people are interested in the event. This might however cause legality issues, especially in case of events where attending was free. Using technologies like smart dust or even drones equipped with cameras might be illegal since the purpose would be to follow the movement of the audience. This kind of issue might be possible to go around in cases of events that the visitor needs to buy a ticket.

Another issue that was concerning event organizers during the interviews was with volumetric displays. While they would attract people and spark interest while used in advertising, the placement of the displays could become problematic. Could placing a volumetric display to advertise an event near a road make drivers of motorized vehicles too distracted and cause accidents and would the event organizers be accountable for those possible accidents.

Biggest issue with using emerging technologies in near future at events according to the interviewees was however the cost efficiency. When will for example virtual reality headsets be so common in households that it becomes current topic for event organizers to consider adding to their events. Perhaps one of the most surprising thing discovered during the interviews was that the people who were organizing gaming and eSports events were the most skeptical and even reluctant towards the possibility of technologies like virtual reality gaining major popularity. This was interesting because event visitors of gaming and eSports events are at the moment the people who seem to be most interested towards new technologies like augmented- and virtual reality. Also, our tech pioneer interviewee thought that the hype and discussion around virtual reality, 360-video and similar technologies was starting to slow down and wait for a new rise. In general, the biggest problem that the interviewees had with taking new technologies in consideration when organizing their next events was money and why they would spend it on something that has not yet proved to work in the field.

5 Conclusions and discussion

The purpose of the research was to explore the attitudes and general thoughts of event organizers towards usage of emerging technologies in their events. Because the researchers wanted to research something that was not focused on just one dedicated sector of the event organizing business, it was decided that inviting interviewees that had various backgrounds in event business gave the best overall picture of wanted answers. Eventually the research questions developed as follows:

The main research question was:

- How event organizers can take advantage of new and emerging technologies to add value to their events?

The sub research questions were:

- What emerging technologies are most likely to have an impact in event organizing and managing business?
- Can emerging technologies help solve current problems of the industry?

To answer these questions invites for interviews were also sent to representatives of companies that are closely involved in using or developing one or multiple of the technologies that are currently seen as developing.

This research has shown that event organizers are interested in using new and emerging technologies to add value to their events. However, there were also concerns about using them; in most cases the cases were about financial possibilities but also concerns about privacy of the event goers in cases where collecting data using various technologies. At this point of time some of the emerging technologies (like virtual reality and smart dust) that were discussed with event organizers are still expensive which makes them a risky investment to implement.

At interviews the highest potential for future usage was seen in virtual reality and internet of things. Virtual reality could help event organizers reach new customers that are currently not in their market by providing for example 360-

video streams from the events. The benefit in internet of things was being able to gather data across various areas and parts of the event. And some of the interviewees believed that using these emerging technologies could help them in their problems whether it is discovering the actual turnout of a free event or reaching new audiences by providing new possibilities for following a sport.

The biggest limitation for the research was to find proper literature about the emerging technologies as there is not large amounts of public information about all of them. Because these technologies are still very much in the development process there is not many reputable sources providing information as companies don't want to give out information that might benefit their competitors. Another limitation that was faced was the amount of developers and companies that were using or developing these emerging technologies is still quite small in Finland, this meant that the researchers were not able to get as many interviews from technology representatives as they would have liked. The data that was gathered through interviews was reliable as it came from primary sources that have participated in organizing of various kinds of events. The researchers managed to stay objective during the process, during the interviews only ideas were presented that were already discussed or brought up by another interviewee to stimulate the interviewee and spark up the conversation. This was done so that the researchers would not bring up their own personal ideas about the topic during the interviews.

Ideas for further research/reflections

This study was conducted in Finland, main area of focus being around the city of Jyväskylä and its events, so first idea for future research would be to conduct the same study in another area inside Finland OR in a different country. As mentioned earlier in the thesis, some of the responds could change when interviewing people that organize bigger events or interviewing people who are working with different emerging technologies. The findings aren't likely to be the same everywhere in the world, so to see the differences the same research questions should be answered also in different regions. Another way to continue the study would be to put some emerging tech

aspects in events (that are possible today) to try out if the customers or organizers see added value in those. Placing a prototype of some emerging tech in events could be the way to then monitor people using/seeing it, and those people along with the organizer then interviewed whether they think it’s useful or not.

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Appendices

Appendix 1. Interview questions (Finnish)

1. Kuka olet, mitä teet?
2. Millainen on suhtautumisesi teknologiaan?
3. Miten oma alasi suhtautuu muutokseen (yleisesti)?
4. Onko alallasi tiedossa isoja muutoksia lähitulevaisuudessa, millaisia?
5. Miten alasi muuttuu seuraavan 10 vuoden aikana?
6. Mitkä tekijät vaikuttavat eniten alan muutoksiin?
7. Millä tavoin muutokset vaikuttavat asiakaskuntaan?
8. Mitkä teknologiat voisivat vaikuttaa omaan alaasi ja jos kyllä niin miten?
9. Onko uusille teknologioille (kuten VR ja IoT) tarvetta?
10. Onko uusille teknologioille kysyntää jo nyt?
11. Voiko teknologian kehityksellä olla haittapuolia omalla alallasi?
12. Mitä haasteita alallasi on nyt?
13. Voisiko joku tai jotkut nousevat/uudet teknologiat auttaa ratkaisemaan haasteet?
14. Onko sinulla kysymyksiä aiheeseen liittyen, joihin haluaisit mahdollisesti saada vastauksen?

Appendix 2. Interview questions translated(English).

1. Tell us about yourself, who you are and what you do?
2. Can you tell us about your attitude towards technology?
3. How does your own field react to change (in general)?
4. Does your field have major changes ahead in the near future? What kind?
5. How will your field change in the next 10 years?
6. What factors have most effect towards changes in your field?
7. How do changes affect your customers?
8. What technologies could have an effect on your field? What kind?

9. Is there a need for new technologies (like Virtual reality and Internet of Things)?
10. Is there demand for new and emerging technologies already?
11. Could development of technologies cause issues on your field?
12. What challenges is your field facing currently?
13. Do you think that some of these new technologies could help solve the challenges?
14. Do you have questions or concerns regarding this topic that you would like to get an answer to?

Appendix 3. Interview questions for technology businesses (Finnish)

1. Kuka olet, mitä teet?
2. Millainen on suhtautumisesi teknologiaan?
3. Miten koet että muutokseen tai uusin asioihin suhtaudutaan omalla alallasi? entä asiakkaittenne toimesta?
4. Minkä alan toimijoita asiakkaanne ovat?
5. Onko edustamasi yrityksen teknologiaa käytetty tapahtumissa?
6. Onko ko. teknologialle kysyntää erilaisissa tapahtumissa? (festivaalit, urheilutapahtumat yms.)
7. Miten edustamasi yrityksen teknologiaa käytetään tällä hetkellä?
8. Miten uskot että kyseistä teknologiaa käytetään tulevaisuudessa?
9. Millä tavoin kyseinen teknologia voisi palvella tapahtuman järjestäjiä? entä asiakkaita?
10. Mistä muista teknologioista voisi olla apua tapahtumien järjestäjille tulevaisuudessa?
11. Uskotko että näille teknologioille olisi jo nyt tarvetta tapahtumissa?
12. Voiko näillä uusilla teknologioilla olla haittoja tapahtumien järjestäjille tai niiden asiakkaille? Jos kyllä niin mitä haittoja? Jos ei niin miksi?
13. Minkälaisia haasteita uskot että tapahtumien järjestäjillä voisi tällä hetkellä olla?
14. Onko sinulla kysymyksiä aiheeseen liittyen, joihin haluaisit mahdollisesti saada vastauksen?

Appendix 4. Interview questions for technology businesses (English)

1. Tell us about yourself, who you are and what you do?
2. Can you tell us about your attitude towards technology?
3. How does your field react to changes? How about your customers reactions?
4. What kind of businesses or individuals your customers are in general?
5. Has the technology from your company ever been used in events?
6. Is there demand for said technology in various events? (Music festivals, sports events etc.)
7. How is your companys technology being utilized at the moment?
8. How do you think that said technology will be used in the future?
9. How that technology could serve event organizers? or event participants?
10. What other technologies you believe could benefit event organizers in the future?
11. Do you believe that these technologies are needed in events already?
12. Could these new technologies cause problems for event organizers or participants? If yes, what kind? If no, can you justify that?
13. What challenges do you think event organizers are currently having?
14. Do you have questions or concerns regarding this topic that you would like to get an answer to?

Appendix 5. Transcript of interview with Petri Kaijansinkko, Kirittäret

Eetu Nyman: For starters, would you first tell who you are and what you do?

Petri Kaijansinkko: My name is Petri Kaijansinkko and I am society director for Kirittäret. I handle the sales and marketing, but also lead the actions of junior side. I also coach for one junior team.

E: What is your own attitude towards technology?

P: One could say that… I'm pretty clumsy with technology when it is on my own hands, but technology in our field of business is really important and we should be able to answer the expectations.

E: How does your field react to changes? In general.

P: In our society it is only starting slowly (technology and events) but the organizations who work with (above) us 'superpesis' and 'pesäpalloliitto' are highlighting technology at least in their communication. Mainly with officework.

E: Do you already know if you have some big changes coming up?

P: No, not really. What we have done with technology recently (during this winter) is that we have invested in our social media related things, and in that field we have taken some big steps forward.

Leevi Kauppi: What do you see happening to your own field in the next 10 years? (what kind of changes)

P: Well, maybe it will change so that the tools for our sales and marketing will change significantly as we'll have to answer the challenges of marketing events with other ways than only posting pictures.

E: Do you think that Pesäpallo-matches as an event will change?

P: Well… Maybe. It depends highly on what will happen with the Media, For Pesäpallo Television visibility and such is important. What will be the platform in the future; something else than TV (E:streaming?) Yes; Veikkaus TV- will show all the ladies superpesis matches next summer, which shows the direction we are heading. And Ruutu.fi has an agreement with the Male pesäpallo championships. The technology will most likely have the biggest effect on different distribution platforms that view the matches.

E: How will these changes effect on your customer base? Do you believe that different stream platforms will bring you more visitors on the spot?

P: Hopefully! Because the problem with Pesäpallo is that our watcher-base is getting too old. Pesäpallo is the ''traditional'' sport like cross-country skiing,

and it is really popular when it's viewed off a free Television channel, but if we wish to get more (younger) viewers, we will have to answer the needs through technology or Pesäpallo will die out as a sport eventually. Our watchers are already retiring, we need to find the young audience again.

E: Which technologies could have an effect on your field in the future? Like Virtual-Reality or Internet of Things; Do you see that these kind of things would have an place in the Pesäpallo – scene?

P: They might have, but I don't have uses in my mind for them right now. The thing I'm looking for is how do we reach our new customers/viewers and get them aboard. Another issue with the field is that the children are watching and interested in the sport, but we don't managed to keep them in the scene as it isn't considered 'trendy' anymore. They'll either pick from football, floorball or ice-hockey and such.

E: Has there been any demand for these new technologies yet? From the behalf of the viewers?

P: Maybe not through our viewers, but I do know that at Superpesis they are constantly having conversations about how Pesäpallo can answer todays needs. And that partly might have something to do with internationalization. We don't want pesäpallo to be a sport that is only played and watched in Finland. In the spring the men are going to play one matchs at Spain, and the ladies will be playing one in Sweden. And superpesis matches were introduced at India last autumn. We want to get international instead of staying still as a sport.

L: Do you think there could be any downsides in technology considering Pesäpallo and its development?

P: I don't see any downsides that it could have. Right now we should use more technology for our advantage. For example, American football teams coaches use touchpads and headphones to their advantages, and as pesäpallo is as tactical as a sport as American football; we should also adapt in the same way. I have a vision of Pesäpallo's rules and goals to be explained to the watcher through small earpiece that is given when the match

starts from which you can hear a separate commentary from. Someone would commentate the game so that the new watchers understand what is going on.

E: Do you feel that Virtual Reality or some other emerging technology could help to deal with the challenges that Pesäpallo has currently?

P: I think they could bring us new customers/watchers. They could bring the young people in that you can see using tablets and phones anyways. They know their applications and stuff better than anyone else. Therefore technology can bring us new people in the scene. If we get the children in then most likely their parents will also join.

E: In the United States, some matches are videotaped with a 360-camera and people are able to watch it from home with VR-Headpiece. Do you think this could be of use in Finland?

P: Definitely. Another challenge of baseball is that we have a ridiculously small ball to play with. (It's hard to see from time to time) So everything that could enhance the watching experience will help to market our sport. Having a 'smartball' on pesäpallo would help, but it relies on money so much…

E: Smartdust would help to create more visuals on screen as well as statistics.

P: Pesäpallo is a sport which is filled with statistics. And we are lacking most of them because we only record the statistics from our batting side. It lacks the whole other half currently. The games statistics can't be followed at all from the catching sides half.

E: I've noticed that you have been working with different ice-hockey societies as well. Do you see any similarities between Pesäpallo and ice-hockey where the technology is needed or used in a same manner?

P: Ice-hockey is more developed technology-wise. But using touchpads to film and send to other coaches can be used in any sport. Sales and marketing-wise, ice-hockey and pesäpallo have the same challenges on that field. Just the ice-hockey events are much bigger that on them we are marketing the event whereas on baseball we try to get visibility. Those are the main differences, but technology-wise they are really close to each other.

E: Do you have any things in mind that interest you personally? Something you'd like to find out / ask from other event organizers? (considering technology and challenges)

P: The Virtual-Reality and the separate commentary thing interests me, do other sports or events do that? Do they open up their sport during events or steaming? I know that in Finland that doesn't happen. At least in any other way than giving a brochure at the door. I personally would like that if someone told me what is the main goal in the game that I don't klnow. Even boring sports might get more interesting if someone tells the idea behind them. It could make the watching experience more dynamic.

E: We are all out of questions, Thanks.

P: Thanks.