The Online Event Experience

Discovering the elements of a successful online participant event

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Abstract:

Especially after the COVID-19 pandemic, online events have become increasingly popular option for event organisers. However, online events are still perceived often as the "plan B" when physical face-to-face cannot be arranged. This thesis focuses on the online event participant experience and aims to identify key elements that make the online event participant experience successful. The results of this thesis are based on case example of online events, material provided by the event organisers post-event and participant evaluation survey replies. The research method used in this study is descriptive research method. This research mainly focuses on scientific events and congresses organised as online events after the pandemic hit in 2020, but the findings of this research can be useful for all event organisers. As part of the results, this thesis also provides recommendations for online event organisers.

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1. BACKGROUND AND INTRODUCTION

In early-March 2020, the American Physical Society (APS) was due to hold its *March Meeting* (attended by approximately 10 000 delegates internationally) in Denver, Colorado. However, only 36 hours before the meeting was about to start, the meeting was cancelled due to the escalation of the *COVID-19* pandemic. Consequently, APS decided to move its next April Meeting online (Castelvecchi 2020; Durrani 2020). APS was not the only meeting organiser experiencing similar challenges for the first time in 2020.

This research focuses on the kind of elements which make an online event successful. In the wake of the *COVID-19* pandemic, event organisers were forced to transform their onsite events to online events in a relatively short time in 2020 and the trend has continued in 2021. Along with several other industries, such as travel and hospitality industry, the event management industry has been heavily impacted by the global pandemic and event organisers are aiming to adapt to the new environment.

This transformation has impacted on the characteristics of events in both obvious and more concealed aspects. The safety and health situation is one key factor impacting on the decision to travel to a congress destination. Before 2020, other global crisis, such as the 9/11 terrorist attacks and SARS did temporarily impact conventional tourism (Yoo 2005). According to the senior editor of the British Medical Journal, Dr Tessa Richards, a positive effect of the *COVID-19* pandemic has been that it has caused professionals to rethink work routines and what can be considered as an "essential journey" or a "must attend" onsite event. She also states that understanding what works (and what does not) in an online event is pivotal when organising future online events. (Richards 2020)

This research concentrates on scientific congresses organised as educational and networking meetings for professionals of a specific field or industry. Most cases analysed in this research are congresses organised by medical societies. Medical associations have a robust history of organising annual physical/onsite congresses and as a result, the *COVID-19* pandemic has had a transformational impact on their event management process. This

has been an exceptional opportunity to improve congresses and medical societies to lead the transformation to virtual meetings (Martin-Gorgojo et al 2020).

1.1 Problem statement

Onsite (in-person meetings) have been criticised for their environmental impact and the necessity to travel, which excludes those potential participants who are not able to travel for one reason or another (Roos 2020). Online congresses, on the other hand, can offer a more inclusive and flexible mode of participation. Even without the global pandemic, online events can be expected to have a fruitful future ahead. Considering that onsite and online events have usually similar goals (while the practical nature and concrete experience of the event is rather different for both attendees and organisers) this research aims to discover the kind of elements which make an online event successful.

Major scientific congresses are organised to enable the spread of information and learning and to enhance multidisciplinary and international perspectives on problems (Richards 2020). In a 2001 study, conducted by *Rittichainuwat et al.* the motivations for attending annual conferences among professors and researchers were analysed and the following motivations were identified: education, networking, career enhancement and traveling to desirable locations (Rittichainuwat at al. 2001). Similar research was conducted in 2005 by *Joanne Jung-Eun Yoo,* whose study identifies factors impacting in association convention participation decision -making process. The findings of this research are comparable with the study of *Rittichainuwat et al* - destination stimuli, professional/networking and educational opportunities, travelability and safety and health situation are identified as the key factors impacting on the decision to participate (Yoo 2005.)

In an online event, the wish to “travel to desirable location” can naturally be ruled out, while it can also be argued that compared to an onsite event, online events do not offer as strong networking possibilities. However, could it be possible that by enforcing and improving online learning and expanding innovative networking methods, online events provide an experience comparable with onsite events? Or are there aspects which can be provided by onsite events, which cannot be replicated in online events? Or could it be that

online events success should not be evaluated by comparing how well it manages to imitate onsite events?

1.2 Research questions

This research aims to identify, for the benefit of online event organisers, what elements does a successful online event consist of. The focus is on professional, scientific congresses (mainly medical congresses); however, the results of this research can be somewhat useful for other online event organisers.

The main research question for this study is:

- What elements does a successful online event consist of?

For this study, a successful online event is defined being 'successful' based on the participant evaluations and/or organiser experiences. However, this research has only had limited access to sources (especially with the all the events included in this research being events from 2020 or after), the argumentation behind the use of the word 'successful' in this research could be further criticised.

The three sub-questions to support the research questions are:

- How to emphasise the benefits of an online event adequately so that that the online event becomes comparable with an onsite event?
- What organisers should consider when organising an online event?
- What are the added values present in an online event which are not present in an onsite event?

1.3 Limitations

Scientific congresses are organised as a platform for researchers to exchange knowledge. This often results in a "community feeling" ("scientific community"), and the congress attendees are motivated in being part of the event actively by participating in discussions and networking opportunities. In this sense, the underlying motivations to attend a

scientific congress are different from the motivations of attending, for instance, a concert or travel fair. In the discussions of this research, this is reflected as the importance of interaction and networking opportunities.

This research focuses on identifying the elements which are present in a successful online event based on experiences and evaluations from events which have been organised. While this research focuses on academic/scientific congresses with several hundreds to thousands of participants, it automatically excludes more smaller scale events and events which require a shorter planning schedule. This also excludes events where the audience participation in forms of questions and discussion are not as present (such as concerts and other cultural events). Furthermore, video conference calls, live streams, online classes, or any other smaller scale online teaching sessions which are not part of an event programme are not included. This research presumes that that the online sessions considered are part of a bigger event (with defined event dates).

Furthermore, this research does not provide recommendations of online event platforms or software. Many scientific congresses also involve an industry participation as a form of an exhibition, but this research has not focused on this component. In addition, this research starts to identify elements of a successful online event when the event programme officially stars. As a result, event marketing or registration processes are not included in this research.

1.4 Methodology

The qualitative methodology chosen for this study is *descriptive research.* Descriptive research aims to analyse the subject of the research without focusing on the reasons behind the phenomenon ("why this happens"). Instead, descriptive research aims to answer the question "what does this consist of" and aims to describe the phenomenon and its characteristics. (Nassaij 2015; QuestionPro n.d.) The descriptive research method used in this thesis is a combination of survey research and case study method.

To answer the research questions, this study has analysed previous case reports or evaluations of other scientific congresses held in a fully digital (online) setting. The cases

selected for this research are all academic/scientific congresses, which were held online in 2020. In the vast majority of cases, this was a consequence of the *COVID-19 pandemic* and the even chosen for this research was held online for the first time. This research has gathered information delivered by the organisers post-event regarding their events. This information presented by the organisers provides a holistic evaluation on the organised event (what went well and what could be improved in the future) and offers recommendations of other event organisers.

A portion of the case studies used for this research are also based on participant evaluations and comments provided by the delegates. This research identifies elements of successful online events by analysing the event material provided by the organising associations online. In addition to the case studies, this research has analysed the *ESTRO 2020 – Online Congress* participant evaluation survey replies. Access to the full survey replies were granted and the relevant questions for this research were chosen as the subject of further analysis.

In the Discussion-section the successful elements of the online events are presented, reviewed, and debated.

1.5 Concept definitions

1.5.1 Onsite – Online – Hybrid

In this research *onsite event* is used to refer to traditional congresses held physically at a specific venue while *online events* lack this physical aspect at least partly. Online event is often dynamic, flied with information and aims to encourage interactivity and engagement (Filo at al, 2018).

The online congress cases selected for this research have taken place in various online environments (from free Telegram to professional online-based platform designed for events). In an online environment designed for events, the registered participants have personal login information they use to access the interactive environment, where they can navigate independently between content and programme sessions. In addition, with the

programme content, the environment can also be access to help desk, interactive programme, bios and photos, industry exhibition area, lounges etc. In an online congress environment, the participants must choose where to go and what to attend by navigating between event content – similarly to the physical experience in an onsite event venue. The online environments can also offer options for the participant to search for content in the platform as well as build their personal event agendas.

Figure 1 Example image of an online event platform session room (Kenes Group https://kenes-group.com/services/virtual-hybrid-events/). Kenes Group platforms were used for EPA Virtual 2021 -congress.

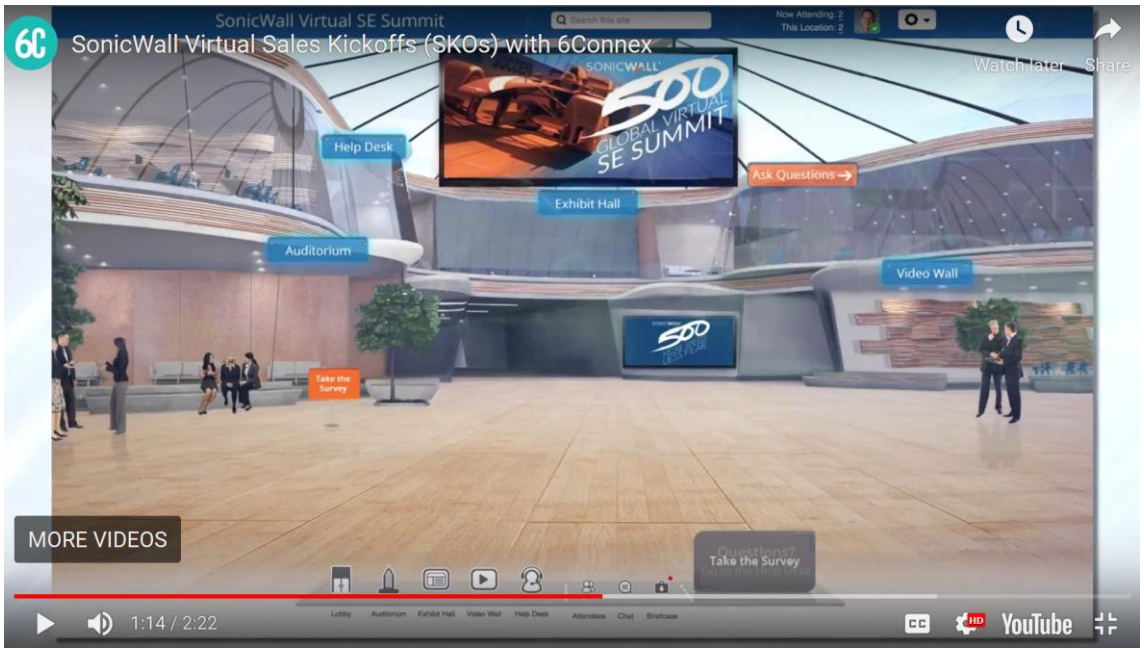


Figure 2 Example of an online congress environment (video caption from 6Connex https://www.6connex.com/virtual-events-platform/). 6Connex was used for ESTRO 2020 - Online Congress

Hybrid events combine aspects from both online and onsite events as some delegates attend the meeting remotely while others are together and attend the presentations physically. While this format potentially could satisfy all attendees, it also has the danger of breaching the community feeling by dividing participants into two groups (Richards 2020).

1.5.2 Conference and congress

This study concentrated on international professional congresses, which pre-2020 were organised as physical onsite events and in 2020 were organised as fully digital events for the first time. Webster's Comprehensive Dictionary (1996) defines *congress* as an assembly or conference: a gathering. *Conference* is defined as a formal meeting for counsel or discussion. (Webster's Comprehensive Dictionary, 1996) This study focuses on professional congresses and conferences held entirely online without a physical hosting location and venue. At least the format of scientific conferences has stayed the same for centuries – speakers presenting in front of an audience reminds the meetings of the Royal Society in 1660 (Reshef at al. 2020). Conferences have traditionally taken place in hotels or event

venues and entailed a great amount of physical interaction, such as sitting and eating together and sharing a microphone (Stokel-Walker 2020).

The IAPCO Meeting Industry Terminology publication defines congress as a regular meeting of hundreds or thousands of individuals belonging to a singular cultural, professional, religious, or other group. Conference is defined as a participatory meeting meant for discussion and learning. Compared to a congress, a conference can be smaller in scale and more exclusive in character, which is to facilitate exchange of information. (ICCA n.d.) This research focuses on scientific events/congresses, which are organised as platform for exchanging information between researchers. They often have a programme extending to multiple days, several sessions with time dedicated for discussion (some running simultaneously) and various session types.

1.5.3 Virtual event

A virtual event can be defined as an event where some or all the event attendees are not physically in the event location but are connected to it in a common environment. Most often the common environment is enabled by computers and the Internet. (Meetings Today 2012) Often virtual events and online events are used as a synonym to each other. However, virtual events can be separated from online events by affiliating virtual world/virtual reality into them. In this case, the virtual event occurs in a computer-based environment where the event participants interact via avatars, which can be three-dimensional graphical representations (Meetings Today 2012). As this research focuses on events hosted via online platform/websites without the aspect of the virtual reality being present, for the sake of terminological clarity, from now on, this research will use the term *online event.*

1.5.4 Delegate

This research refers participants as “event delegates”. Delegates include both the registered participants and event speakers/presenters.

2. THEORETICAL FRAMEWORK

Until very recently, there has been relatively few academic studies focusing on online event experiences. However, 2020 and the global the COVID-19 pandemic have changed the event management field drastically which has also caused a large influx of new studies and case reports on online/virtual events. For this study, professional/scientific congresses taking place online during 2020 to early 2021 were analysed by looking into online event information available on the congress websites, event reports and event evaluations.

Prior to the COVID-19 pandemic, F. Castro (2019*)* studied the role of social presence in an online professional conference (*21st Annual Teaching Colleges and Community Worldwide Online Conference*). The results of the study suggests that social presence can be achieved in the timeframe of online congress sessions (lasting 20-45 minutes). According to the findings, interactive or communicative reinforcement is pivotal with sustaining interpersonal interactions during an online event -replying to other participants' messages during presentations and making references to the content of others' messages being examples of this. As a result, delegates projected themselves socially and emotionally and formulated perceptions of other participants and presenters as real human beings. To achieve a successful social presence, online learning experiences should be designed as social interactions between the presenters and attendees. (Castro 2019)

Kharouf et al. (2020) have studied the importance of participant interaction in the online event environment. According to their research, participant interaction among each other and effective communication along with online content engagement does have an impact on the participants online event experience. Their study suggests various event organisers methods for increasing participant interactivity by online photo/video sharing, publication of user generated content etc.). Furthermore, they encourage participants to customise and create profiles as way of personalising further the online event experience. (Kharouf et al 2020)

*"*Also, allowing consumers to create and customise profiles may contribute to their online event experience and favourable intentions towards the event, while also have the potential to generate benefits for other stakeholders*."*

(Kharouf et al. 2020, p.473).

During an onsite event, the participant experiences the event holistically with all human senses – for instance, the participant is aware of the physical nuances of the event venue, hears background noises and sees an interactive visual environment. During an online event most of these dimensions and aspects are not present and the participant (in many cases) is alone in front of their device. To overcome this, Becki Cross encourages hybrid event organisers in an *Event Manager Blog* entry to think specifically about the online perspective of an event. She encourages organisers for example to think about the breaks during the online event. For the participant to access continuous content during the event, she recommends also organising a programme during the breaks (e.g., interviews and behind the scenes content). (Cross 2018)

A few publications have been issued focusing on providing instructions and guidelines for the online event organisers on how they should arrange their work when organising online events (in forms of checklists). For instance, in March 2020 guidelines for virtual conferencing based on the experiences gained during the *COPERNICUS Alliance Online Conference 2019 were* published by Diethart et al. The guidelines focus on offering other organisers practical guidance by clarifying all the tasks and steps organisers need to take. In these guidelines, also typical online functions and tools have been listed. Along with hardware (such as a computer and a microphone), they include features that the online event platform should have; attendee list, file/screen sharing, chat and notes boxes, activity buttons (applause, raising hand etc.) and for interactivity, quizzes polls and whiteboards. (Diethart et al. 2020) The relevance of these features serving the participant experience are further discussed later in this research.

In this research, the elements of interaction, networking and community are discussed in relation to online events. A sense of community is created when people share a common environment of interest (Dawson 2006). Amy Jo Kim, a professional in Web community design, has focused on best practises in web community building in Amy Jo Kim's book *Community Building on the Web: Secret Strategies for Successful Online Communities*. The book introduced nine "timeless design strategies" for building communities -articulating purpose, building flexible gathering places, creating meaningful member profiles,

designing roles (guidance to newcomers), developing leadership programme, encouraging good etiquette, promoting cyclic events, integrating rituals, and facilitating subgroups (Kim 2006). In the event cases of this research, some of these strategies are put to practice (e.g., guidance on etiquette), while others are included in the recommendations this research offers (e.g., attention to newcomers).

The Community of Inquiry (CoI) is a theoretical framework representing the process of creating a deep and meaningful learning experience. This is done via the development of three independent elements: social, cognitive, and teaching presence. Each element is also divided into categories and indicators, as presented in figure 3.

ELEMENTS	CATEGORIES	INDICATORS (examples only)
Social Presence	Open Communication	Risk-free expression
	Group Cohesion	Encourage collaboration
	Affective Expression	Emoticons
Cognitive Presence	Triggering Event	Sense of puzzlement
	Exploration	Information exchange
	Integration	Connecting ideas
	Resolution	Apply new ideas
Teaching Presence	Design & Organization	Setting curriculum & methods
	Facilitating Discourse	Sharing personal meaning
	Direct Instruction	Focusing discussion

Figure 3 Community of Inquiry. D.R. Garrison, J.B. Arbaugh / Internet and Higher Education 10 (2007) p. 157–172

Randy Garrison has implemented CoI in online learning environments and computer-mediated communication. According to Garrison, understanding the role *social presence* in creating *community of inquiry*, designing learning experiences as well as creating a climate for open communication and group cohesion is important for productive inquiry. *Social presence* is defined as the capability of participants in the *Community of Inquiry* to project their personal attributes into the community, and as a result, presenting themselves to the other participants as "real people". *Social presence* demonstrates the difference between a simple process of receiving information and a collaborative community

of inquiry. Expression of emotions, humour, self-disclosure, and open communication are key factor contributing to the existence of social presence. (Garrison and Arbaugh 2007; Garrison et al. 2000) As seen later in this study, the sense of *social presence* plays a key role in the successful online event participant experience.

Online community building in the context of online classes were examined by Pam Veseley at al. (2007). For this study, a survey was circulated among teachers and students taking part in online education, and they were asked to rank factors impacting community building. The students ranked "instructor modelling" (e.g., teacher responding to questions and participating in discussions) as the most important factor while the faculty ranked "interaction and dialogue" (e.g., students introducing themselves, role-plays, debates etc) as the top factor. As the second and third most relevant factors both groups named "student's interest and priority for the class" and "sufficient time for discussion and interaction". The survey also revealed that 89 % students and 78% of instructors view that community building in online courses is more challenging than in face-to-face courses. The lack of body language, finding time to discuss personal issues and experiences online, time spent in responding and reading comments, were mentioned as factors impacting online community building negatively. In the conclusions, this study recommends the faculty to play a leadership role in the community building as students believe instructor modelling is the most important part of online community building. (Vesely et al, 2007)

Ilja Simons (2019) has studied the construction of hybrid event communities, which contributes to the knowledge of the role that events play in the modern network society. As part of the conclusions, Simons states that interaction can shift from physical presence to online presence and vice versa, but also emphasises that not all combinations of online and offline interactions result in the construction of a hybrid event community (Simons 2019).

2.1 Why to organise online events?

After international travel and event management industries have recovered from the COVID-19 pandemic, onsite congresses are likely continuing to hold a place in the event scene due to their recognised benefits in facilitating interactions between many participants (Roos 2020). However, online events will continue to provide a more inclusive format for attending events. As there is no need to travel, cost savings are gained, which contributes to the professional institutes being able to sponsor more delegates to attend the events. As seen in this study, several organisations are also able to organise online events free of charge. It is also possible to attend an online regardless of physical disabilities, without taking days off from work, combining work-life balance, and still follow the presentation flexibly (if the congress material stays available) (Diehart et al 2020).

Online events also offer an environmentally friendly method for attending events, which can be predicted to be increasingly appreciated in the future. A study by Sebastian Jäckle (2019) calculated that an onsite academic congress can cause a high carbon footprint: the average emissions per participant to five editions of *the ECPG General Conference* were between 0.5–1.3 tons CO2-equivalents (estimations based on the IPCC reports call for a reduction of per capita emissions to 2.5 tons by 2030). (Jäckle 2019) Furthermore, onsite services such as catering and printing of materials are redundant, providing additional environmental benefits (Diehart et al 2020).

These same motivations to attend an event virtually were also reflected in the participant survey for the *EDBT/ICDT 2020 congress* (discussed further in the Case studies section of this research) – environmental reasons were named as the number one motivation by the 104 respondents.

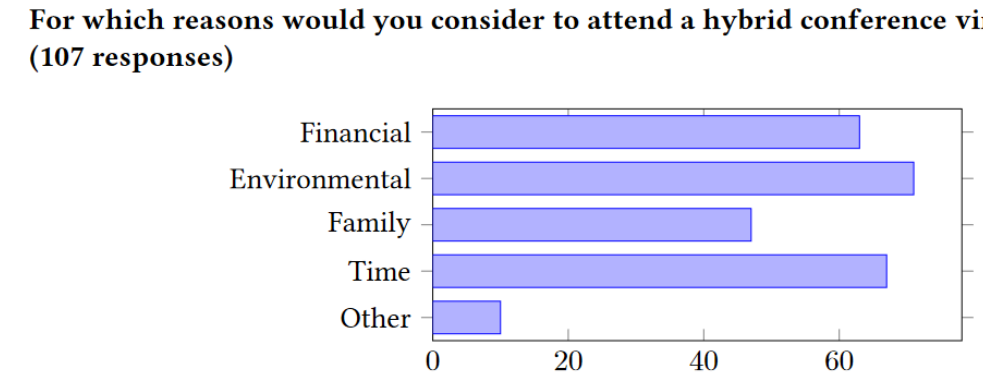


Figure 4 More than 60% of the respondents to the EDBT/ICDT 2020 participant survey name environmental, time and financial reasons as motivations to attend an event virtually (Bonifati et al, 2020)

3 CASE STUDIES

The online event cases chosen for analysis are scientific online events organised after the COVID-19 pandemic drastically impact on international travel and event management in March 2020. Most of the events analysed in this research were organized for the first time as an online event (apart from *Virtual Winter School on Computational Chemistry)* obliging the organisers to adapt their onsite event planning to match the online event reality. All events are tied together by being scientific/academic congresses with a well-planned event programme lasting for more than one day. They are analysed based on the event elements and aspects the event participants and organisers have found functioning and effective in creating a successful online event participation experience.

This section has a description of each online event chosen for this research with a summary of the findings and characteristics of each event. *ESTRO 2020 – Online Congress* has a more extended section compared to the other events as full access to the online participant survey for this event was granted for this research.

2.4 Photonics Online Meetup 2020

In January 2020, the first online-only photonics event (*Photonics Online Meetup*) was held. An article of the event journey was published in March 2020 in *Nature Reviews Materials.* In their story, the organisers provide suggestions for other online event organisers while identifying the positive aspects and challenges in their event; as positive aspects, they mention "globally accessible meeting", which does not require air travel (reducing CO_2 emissions), costs, impact on participants' families and avoiding international visa issues. Consequently, according to the organisers, online events have the potential of democratising access to knowledge on a global scale. As challenges, they mention participants potentially connecting from different time zones causing inconveniences for some, emerging IT issues (especially if presenters are scattered between several locations), lack of emotional engagement caused by the lack of in-person interaction and finding an ideal online platform for hosting the event. However, they conclude their experience being optimistic that in the future, novel technologies used for online meetings will produce more attractive events. According to the organisers, the absence of such ordinary element as

applause, was noticeable. As a suggestion to overcome this, they ponder the use of virtual reality. With this meeting, the organisers created "hubs" where participants physically came together to participate in the online event adding some face-to-face interaction in the event. (Reshef at al. 2020)

3.1 ESC 2020 – The Digital Experience

The European Society for Cardiology (ESC) held its annual congress, *ESC 2020 – The Digital Experience*, between 20 August and 2 September 2020 collecting a record-breaking attendance of 125 registrants. For this congress, the key speakers and presenters gathered together in a professional TV-studio in Amsterdam, which was said to increase the feeling of "being together" which came across to the remote audience. As another method for increasing the community feeling, the organisers of the congress emphasise that active social media presence underlines the global participation. To increase the quality of the presentations and avoiding technical issues, the presentations were pre-recorded with professional help. The organisers reported that the congress gathered an increased participation in women and young professionals (aged under 40) and that data collection from the online event was simpler. The organisers concluded that after the first online congress, "there is no going back". (ESC 2020)

The ESC Congress 2021 will be held on 27-30 August 2021 as an online congress. In congress website, the organisers state that "ESC Congress 2021 will use a new intuitive platform that will enable smooth navigation and exceptional interactivity". (ESC 2021)

3.2 The 88th annual congress of the European Atherosclerosis Society (EAS)

The 88th annual congress of the European Atherosclerosis Society (EAS) was held virtually between 4-7 October 2020 with approximately 2000 participants. The organisers provided participants with instructions on how to participate to the congress online in a website section called "Virtual congress how-to". Furthermore, a separate "Social Media Toolkit" was provided via the congress website to encourage participants to share information about the congress and their participation experience within their network. The toolkit provided the relevant social media accounts to follow and suggested ways to share

information about the congress, with the option to use sample sentences in their social media posts, with official graphics and disclaimers. In addition, the congress website had a publicly available tutorial video to demonstrate the access to the congress platform and navigate the participant through the platform. (EAS 2020)

3.3 The 28th European Congress of Psychiatry and EPA Virtual 2021

The 28th European Congress of Psychiatry was held as an online congress on 4-7 July 2020 with more than 2900 participants. As a benefit for being an online congress, the organisers were able to hold *Ask the Expert* sessions with unlimited capacity and without the need for pre-registration. To increase networking opportunities, the congress included *Thematic Chat Channels* at certain times with a specific topic and a moderator. The congress participants were encouraged to continue consuming the congress platform. There were, 300 presentations and discussions running until almost 3 months after the congress. The networking opportunities were also promoted post-congress by inviting participants to use the list of participants for contacting other participants and experts. (EPA 2020)

The 2021 edition, EPA Virtual 2021 (29th European Congress of Psychiatry) was held 10-14 April 2021. Prior to the congress, the organisers released teaser material of the content by posting videos of the speakers releasing preview soundbites from their congress presentations. In the congress website, the organisers added a section called “Be Social”, where they encouraged attendees to “share information about the congress and [your] participation on social media – before and during EPA Virtual 2021”. As with the the EAS congress, this section provides instructions and examples posts to share on social media. In addition, the organisers have created a section to describe good online behaviour during the congress, including guidelines regarding the use of camera and video and online harassment. (EPA 2021)

3.4 Online Dermatological Congress 2020

As an example of a free professional congress with a smaller budget, whereby 954 participants attended the Online Dermatological Congress between 25 and 26 April 2020.

The congress was held via Telegram Messenger App (telegram was chosen as the platform as it had hosted a professional dermatology chat since 2014). Furthermore, Telegram is free of charge, which contributed to the fact the congress did not have a registration fee. As the programme schedule was tight, the Q&A sessions were organised by collecting questions to speakers via moderators and organising a separate Q&A session on the last congress day. (Martin-Gorgojo 2020) This way, the speakers had also time to think of answers to the questions, which is usually not possible during a traditional onsite congress.

Telegram as a platform also provided the opportunity for speakers to address each question directly with Telegram-videos. Furthermore, the platform enabled the congress certificates to be sent directly to speakers' Telegram-inboxes. As it was possible to organise this congress without registration fees, the delegates did not have to travel and as it was possible to keep the videos uploaded in Telegram post-congress, the congress allowed easy and flexible participation. In the end, according to the participant evaluation survey results, 61.6% of the respondents considered this meeting format superior to regular meetings. (Martin-Gorgojo 2020)

3.5 The joint EDBT/ICDT conference 2020

International Conference on Extending Data-base Technology/International Conference on Database Theory 2020 was supposed to be held in April 2020 in Copenhagen, Denmark. With only three weeks' notice, the decision to move the congress online was made. The organisers aimed to run the meeting fully in live-mode to stimulate the physical congress experience as much a possible and the presentations were held live in Zoom. Afterwards, the presentations were also made available for the participants to view them later at their own time and Slack communication platform was used to host discussions and Q&A sessions. This meant that the interaction could also continue for longer. The organisers decided to shorten the duration of presentations with the assumption that longer presentations held online might be more tiring for participants.

Social programme was implemented by organising two "bring your own beer" receptions where attendees were assigned randomly to smaller Zoom breakout rooms to enable

smaller group interaction. The organisers emphasised the importance of planning networking activities in advance as part of the event programme by scheduling times for them and preparing interesting topics for discussions to ease the discussion. (Bonifati et al, 2020.)

3.6 Virtual Winter School on Computational Chemistry

Virtual Winter School on Computational Chemistry emphasises a strong audience participation as a method of imitating the full experience of an onsite conference and enforcing community feeling. Delegates can ask questions through the chat functionality of the conference platform and receive live answers. Delegates can also see who else is attending the presentation and chat directly. Furthermore, guided discussion sessions are organised throughout the conference. During such session, delegates can ask questions on any topics. In addition, participants are encouraged to give 5-minute presentations (submitted prior the congress) and "virtual tea breaks" are organised as a way of enforcing informal interaction (Roos 2020).

3.7 Results from the *ESTRO 2020 – Online congress* participant evaluation survey

ESTRO 2020 – Online Congress was the annual scientific congress organised by the European Society for Radiotherapy and Oncology and held for the first time in a fully digital setting. The congress was held online between 28 November and 1 December 2020 and had 3047 registered delegates. (ESTRO, 2020.) The congress was using *6Connex* virtual environment and the congress programme consisted of both pre-recorded and live presentations. An online evaluation survey was administrated to the attendees via *SurveyMonkey* between 9 and 22 December 2020.

ESTRO 2020 – Online Congress is considered as an example of a "successful online event" based on the participant replies to the evaluation survey – out of 247 participants who replied to the question *How likely are you to recommend an ESTRO virtual event to a friend or colleague on a scale from 1 (lowest) to 10 (highest*)?), 79,3% of respondents replied 7-10. In addition, based on the replies to the question below, 95,96 % of the

replying participants were at least "somewhat satisfied" with the event, 31,85% being "very satisfied".

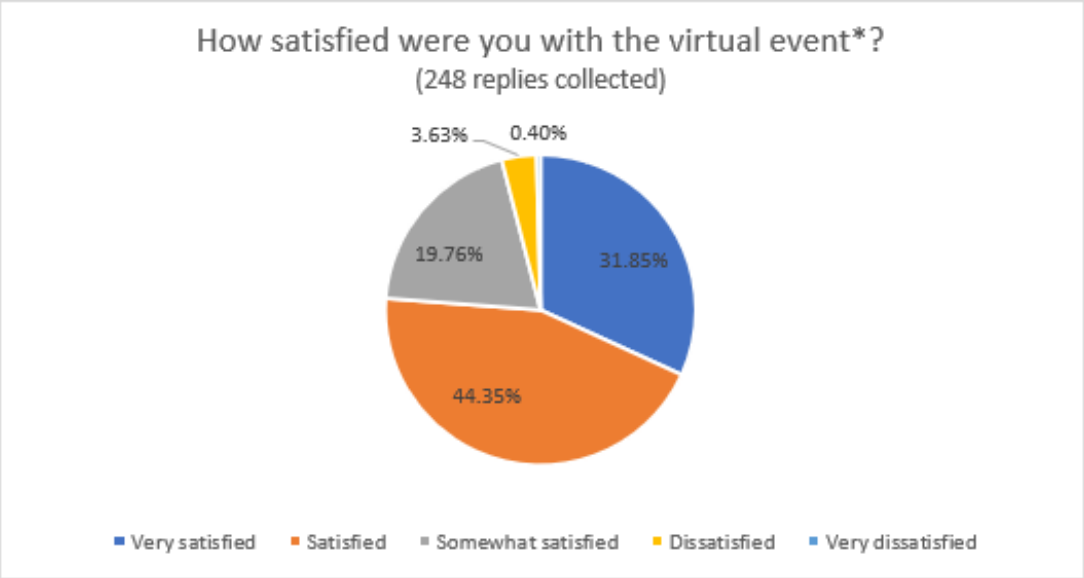


Figure 5: Participant satisfaction to ESTRO 2020 – Online congress was high.[1]

For this research, participant responses received to the two open ended questions below are analysed:

1. *What are some aspects we can improve upon in the event of a future virtual congress? (126 replies collected).*
2. *Please indicate comments, suggestions for improvements or other relevant feedback. (73 replies collected).*

As expected, the interactivity and networking possibilities (social aspects) are craved in the online congress experience. The replies reflect the need to increase interactivity and organised Q&A sessions. To tackle this, participants hope for more live sessions where the speakers and participants are present at the same time or live Q&A sessions, hosted via online video conference website (the online meeting tool *Zoom* was mentioned). Participants also mentioned that they felt they were attending the event alone while watching

[1] In concept definitions it was stated this research will use 'online events' of the subject of this study, However, the wording "virtual event" was used in this evaluations survey question and is copied to this research in its original format.

videos and, in the replies, expressed the wish to have a "moderator/commentator" – a person who guides them through the event and links topics together.

One advantage of an online event is the increased accessibility to the educational material. In a live/physical event the congress presentations making the material available post-congress usually takes some time, whereas in an online event, the presentations can become immediately accessible. Participants replies reflect that they appreciate the congress material being available instantly and that it is staying accessible for several weeks after the congress. In the traditional onsite ESTRO congress, several sessions overlap with each other which forces the participant to choose which presentations to attend. In an online congress, the overlap of sessions does not cause such a conflict as presentations remain viewable. This accessibility feature (flexible participation) is one aspect where the online event format has an advantage over the physical onsite event.

Naturally, the online tools and technical issues pay a pivotal role in the participants' eyes and in the survey replies these also stand out. Based on the replies, the online congress platform should be pleasant and easy to use, and it is important to provide participant with clear instructions on how to use it. The instructions should also be easily accessible to the participants. This is crucial as without the knowledge on how to use the platform, the participants might not be able to benefit fully from the online event experience. *ESTRO 2020 Online Congress* combined both pre-recorded presentations and live presentations. The participants commented that the technical issues with the live presentations caused annoyance and disturbance to their congress experience, while with the pre-recorded presentations, they did not experience similar technical issues. Managing, and especially anticipating, possible technical issues is vital as in an online event technical issues naturally have a major impact on participant experience.

All in all, participant replies reflect more satisfaction toward the first ESTRO online congress than disappointment. The participants would also appreciate that the online participation would remain in the future as a part of the congresses, even if the main congress was a physical event. A summary of the participant suggestions for improvements is compiled below.

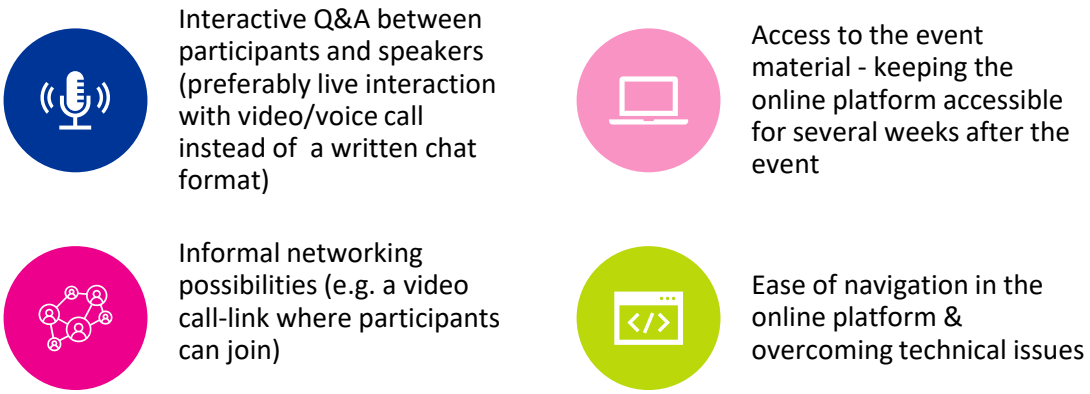


Figure 6: Summary of ESTRO 2020 – Online Congress participants' suggestions for improvements

4 DISCUSSION

4.1 Key findings

The importance of networking and connecting with the speakers and other participants is reflected strongly in the online event cases of this research. The first reaction of both organisers and participants is often to evaluate the online experience by comparing it to the familiar onsite event experience – questions such as "what is missing here?" and "what can't we do in the online congress that we can do in an onsite congress?" automatically rises. However, at the same time, the unique opportunities and added values provided by the online experience are also identified in all event cases (such as flexible participation and cost savings). Based on the literature review and survey material used for this research, a successful online event included the elements identified below:

- Encourages and emphasises formal interaction (as a part of the educational experience)
- Facilitates alternatives for informal interaction and networking.
- Guides the participant through the event - manages to create a "community feeling" and avoids the participant feeling "left alone". Organises programme during the breaks in the official programme to avoid "quiet moments", when the congress experience might disperse.
- Keeps the congress/educational material available for participants post-event and preferably enables interaction to take place post-event also (enabling "flexible participation").
- Takes into consideration the possibility of occurring technical issues and methods to overcome them quickly. Possibly uses professional audio-visual services to improve the quality of presentations.
- Provides clear and accessible instructions on how to use and navigate the online congress platform and introduces all the available features in the platform to delegates.

4.2 Networking and social experience

In an online congress setting, the responsibility of the participants' social experience is more in the hands of the organisers than in an onsite congress. In an onsite congress, participants' social experience depends more in the social interactions of the participants themselves – wandering in the event venue with colleagues, exchanging small-talk during a coffee break or in the toilet queue provide opportunities for social interaction. In an online congress setting, the participant is most often physically alone, thus, it is more relevant for the organisers to take every possible opportunity to create space for discussion and facilitate occasions for informal interaction. As stated earlier in this research, according to the *Community of Inquiry*, social presence can be achieved by emphasising open communication and expression of emotions and humour. To accommodate these human expressions, it is of course essential that the online congress platform chosen for the event supports interactive features, such as open text-based chat boxes, user profiles, emoticons, and video calls.

A key weakness for online meetings is the human dimensions and psychological aspects: Scientific events are often endorsed as a great source of scientific exchange, learning and networking opportunities. A major challenge for online events is to create occasions for informal interaction and networking, as well as room for formal/professional discussions outside of the official congress programme (Roos 2020). Human contact and emotions are practically impossible to reproduce in an online environment in the same manner they can be reproduced in a face-to-face situation. Formal and informal interactions among faculty, delegates, scientific societies, and industries suffer, which could reduce opportunities for networking (Porpiglia 2020). Being aware of this potential issue and placing adequate resources to overcome it, is essential to enable a successful social interaction during the event. This could be done for instance via dedicated networking sessions, where the sole goal is for participants to share their current research goals and interests with each other.

Luc Rubinger et al., suggest in their study of best practices for virtual meetings and conferences that every event session should have a designated host/moderator to provide consistency to the session (Rubinger et al. 2020). The moderators could also be beneficial

with tackling the issue of participants feeling of attending the event alone - moderators could provide the participants the impression of attending the event collectively with someone who either guides them through the event or simply is a colleague who shares the experience with them simultaneously. As stated in the study by Vesely at al. (2007), the faculty leadership and activity play a vital role in online community building, thus, emphasising the presenters and chairpersons to lead the interaction is important.

Even if direct discussion cannot be arranged at a similar capacity as in onsite events, conveying attendees the sense that they are in fact "surrounded" by other participants is pivotal -whether this is by encouraging participants to keep their video on (whenever possible) and/or adding photos and other information to their delegate profiles, having an open "general chat" available through the congress (which can be more active during the breaks in official programme) or by using new, still not developed, features specifically designed to transmit human presence in an online event. As not all delegates participate in discussions as actively as others, these kinds of small details can be especially beneficial for those attendees who prefer to listen and observe rather than actively involve themselves in discussions.

Related to networking, a concern is also how to involve first time attendees to conversations. For delegates who are already acquaintances (perhaps from previous event), the barrier to engage in a discussion online is often lower than for the newcomers/young professionals entering the scene. This can diminish opportunities for new collaborations and relations while the existing ones continue to flourish. (Aznar et al., 2020) Special attention could be given to the first-time attendees -perhaps organising sessions only for them or provide them with special communication/instructions prior to the event aiming to facilitate and encourage them to take part in the online networking opportunities.

4.3 Concrete and logistical experience

For the participant to be actively involved in the event (instead of becoming a passive listener), it is essential that the online event platform has features supporting interactivity. As presented by Diethart et al. (2007), in their guidelines for online event participants (presented in *previous studies*), the online platform should have an attendee list available

(Diethart et all, 2020). This could greatly contribute to the feeling of "not being alone", especially if the attendee list shows the active online-status of participants. Most participant these days are familiar with online presence statuses (online, busy, offline, away etc.) as well as with chat functions from social media platforms. If the online event platforms brought in features of the common social media platforms, it could increase the feeling of familiarity and ease of use among participants. For interactivity, also activity buttons to demonstrate applauses could bring an interesting addition.

A major advantage of online events compared with onsite events is that the presentations can be paused or rewound, which can be a beneficial feature for those who missed details or wish to look at a specific slide for a longer time (Castelvecchi 2020). As stated by *Dr* Francesco Porpiglia et al. (2020), all content of an onsite meeting should be transmitted/streamed online, either live or delayed, to promote flexible participation. Many events already stream individual sessions, but this could be extended to cover the whole event programme. (Porpiglia et al 2020)

However, a relevant question is also can the event delegates attend an online event physically the same "manner" as they attend onsite events without it being too exhausting or the focus being disturbed? In an onsite event venue, delegates attend in a physical space and must stand up from time to time between breaks or to navigate to the next session or break room. When attending an online event, such "compulsory" physical breaks do not happen automatically. It might be beneficial for the event organisers to take this aspect into account and encourage delegates to stand up from their computer screens to increase the online event attendance "endurance", and with this small gesture to improve the delegates focus and the event attendance experience.

The Wall Street Journal contributor Dr Alexandra Samuel suggests that part of the online event sessions could be "audio only" sessions. This would enable that delegates could listen to the talks while doing a physical activity (Samuel 2020). Online events indeed can become more flexible than onsite events with the methods the event content is produced. Instead of aiming to replicate the onsite event presentation context (of a speaker in a podium lecturing with the help of PowerPoint -slides), online events could implement other presentation forms (such as podcast) as part of the event programme.

Naturally, it is pivotal to define in advance the goals of the events (what kind of impact the event aims to achieve). If networking and informal interaction in the traditional sense are ranked high as a hoped outcome, onsite events hold an advantage over online events if interaction is defined and hoped to be as closely as possible based on face-to-face interaction where words can be exchanged in the shared physical moment. However, fruitful interaction could be achieved online in an event platform that remains accessible and transforms into discussion forums or groups after the official event is over. All in all, implementing various new features in the online event platform which increase interactivity (online quizzes, games etc.) could bring a beneficial addition in the social programme. Several professional congresses offer organised, informal social programme, which is often highly valued by the congress attendants.

4.4 Recommendations for online event organisers

In this section, this research provides practical recommendations for online event organisers to keep in mind.

As mentioned earlier, the key aspect is to try to think without the "shadow" of an onsite event restricting creative thinking and aiming to imitate the physical event experience. The online event platform should be designed to resemble an online event experience aiming to be as user-friendly as possible without trying to add graphics from an onsite event venue. If the online platform is using graphics of a physical congress venue (lobbies, hallways, building windows), it can create feeling of the event aiming to imitate a physical event venue. This can result into further comparing the online event with an onsite event and prevent the unique elements of online event from prevailing. Instead of a common-looking platform, aiming to create a unique look and feel with the graphics (that will not go unnoticed when the participant logs in for the first time), could be immensely valuable for the online event experience (Prahl, 2021).

When it comes to congress presentations, having a good balance between live and pre-recorded presentations is key. The added value of pre-recorded presentations is that technical issues can easily be eliminated, the presenters have had time to prepare their

presentations which often results in coherent presentations with less nervousness from the presenter. Pre-recorded presentations are a unique element of an online event resulting often resulting in good quality presentations. On the other hand, live presentations have the aspect of human-to-human encounter being present which is why they should not be fully eliminated. When organising live sessions, putting resources to prevent, and overcome technical issues is crucial.

To tackle the issue of an online event attendee feeling alone, when possible, an option is to organise local hubs of participant attending the event together, as in the case of *Photonics Online Meetup 2020.* This could work especially in scientific congresses, where people from the same scientific institution attend the event. In cases where this is not feasible, having a commentator (for instance, a member of the organising committee, a political figure head of the organising association or an expert in the subject), providing a short comment or a summary live after each presentation. Furthermore, organising specific time for formal discussions in separate sessions created for conversation only, are important. Furthermore, encouraging participants to create informative profiles of themselves (with both professional and informal details), could facilitate the start of discussions between participants. This could concretise further the feeling that others are following the same event live and no one is alone despite physically being away from other participants.

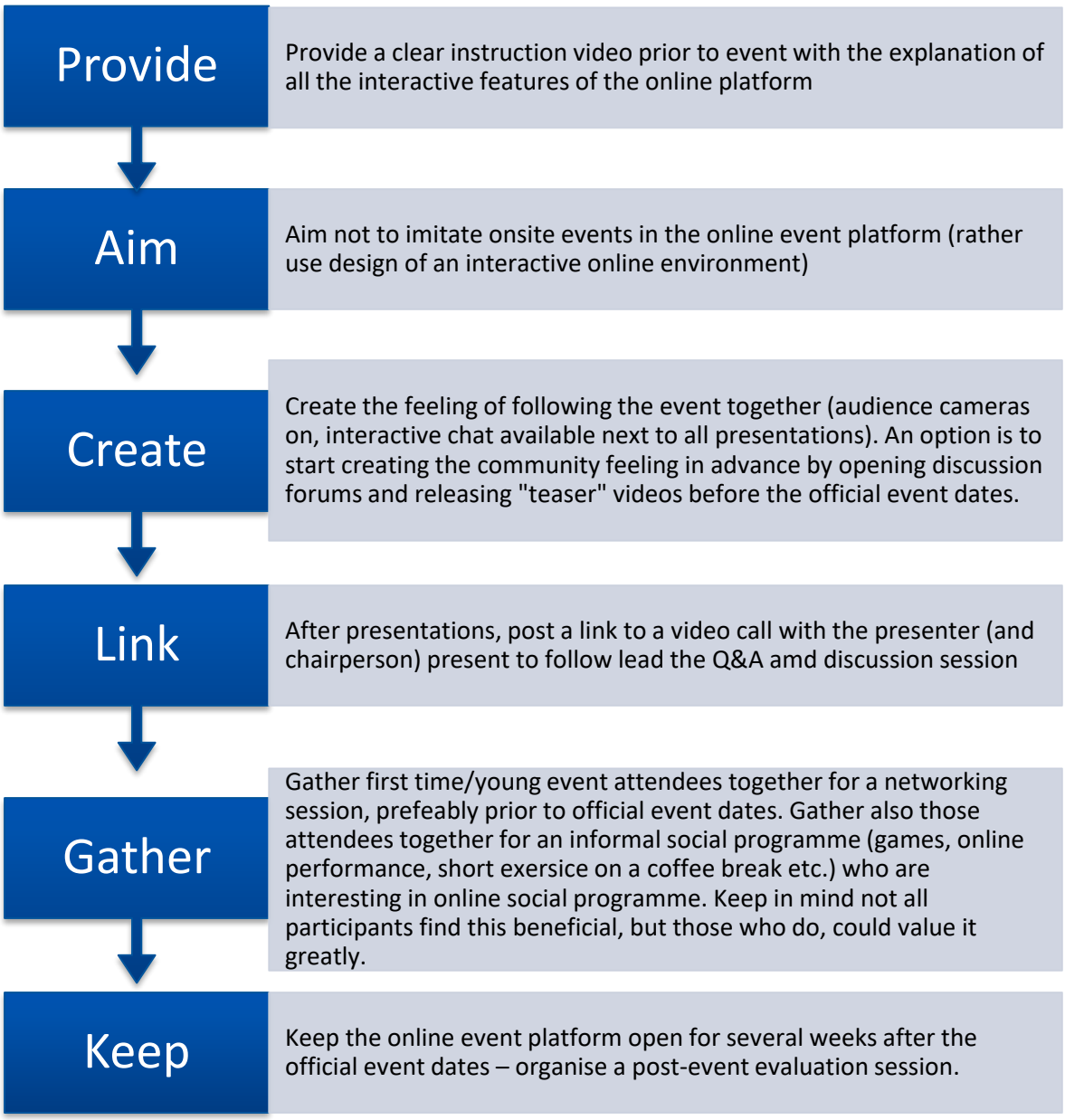
Creating an interactive (and informal) social programme in an online event can be perceived as challenging or even uncomfortable/awkward. Naturally, not all participants are keen to interact online, and this should be respected. However, those who are longing after social interaction and informal social programmes, may be pleased if online events incorporate a social programme for this purpose as part of the event. Fortunately, today many digital apps and online services are easily accessible and even free of charge. Creating online quizzes with websites dedicated for them, playing online multiplayer games while in a video call in small groups, a physical exercise moment to balance all the sitting attending online requires or following a streamed performance, could be alternatives. Also, creating an active social media feed and presence (with the help of a hashtag or creation of a messaging group), participants can exchange thoughts, photos, and videos of their participation experience in an informal setting. This kind of informal “feed of

thoughts" could also help with feeling part of a group and community. It should be acknowledged (and accepted) that an informal online social programme is not a satisfying option for all participants but could be an enjoyable experience for those who are motivated in participating and craving for some "relaxed" social contact.

In events where also informal social programme is organised, benefitting from online games, quizzes and workout sessions could be a solution. For online socialising to go smoothly, planning activities in advance is important. As mentioned earlier in this research, the responsibility to enable social interactions are in the responsibility of the online event organiser. One possibility could also be to open channels for interaction before the actual event starts, providing participants with the option to introduce themselves to others via discussion forums. This could help with interaction during the event. Opening material prior to the event could expand the event lifeline and strengthen the impact of the event – for instance, by releasing "teaser content" of what the speakers are about to present, could build up excitement.

As mentioned earlier, enabling flexible participation is a great added value in an online event. In an online environment, it is easier to create different accesses to different materials and features (in the event platform) based on the event package fee (registration fee). For instance, with a higher registration fee participant would have access to extra material compared to the basic fee. Promoting flexible participation with various event packages could increase the number of attendees and the reach of the event. Keeping the event platform open after the congress dates is crucial with facilitating flexible participation. Furthermore, allowing and encouraging interactions to happen post-event, could result in more relevant and fruitful exchanges and interactions. Organising at least one post-event evaluation session could also bring prosperous feedback for the organisers for future events.

Summary of the recommendations are presented below:


Provide
Provide a clear instruction video prior to event with the explanation of all the interactive features of the online platform
Aim
Aim not to imitate onsite events in the online event platform (rather use design of an interactive online environment)
Create
Create the feeling of following the event together (audience cameras on, interactive chat available next to all presentations). An option is to start creating the community feeling in advance by opening discussion forums and releasing "teaser" videos before the official event dates.
Link
After presentations, post a link to a video call with the presenter (and chairperson) present to follow lead the Q&A amd discussion session
Gather
Gather first time/young event attendees together for a networking session, prefeably prior to official event dates. Gather also those attendees together for an informal social programme (games, online performance, short exersice on a coffee break etc.) who are interesting in online social programme. Keep in mind not all participants find this beneficial, but those who do, could value it greatly.
Keep
Keep the online event platform open for several weeks after the official event dates – organise a post-event evaluation session.

5 CONCLUSION

Hybrid events combining both onsite and online elements can be expected to have a bright future ahead. As event participants also attend the events from various contexts with limited financial and time resources, events can gather a wider audience by satisfying both those who desire to attend online and onsite. Furthermore, as event attendees have different preferred methods of learning (online versus onsite learning), hybrid events can provide an inclusive option for all learners. However, this research acknowledges the significance of individual participant preferences and is not claiming that objectively one event type is better than others.

Online events should be considered as an "event category" of its own instead of an "online replicate" of an onsite event. They should not be directly compared with each other as "same event type", instead, both can be assessed individually. Onsite and online events offer psychologically different attendance experiences – the lack of travel, physical experience of an event venue and face-to-face interaction impacts fundamentally on the participation experience. Therefore, as these two types of events include profoundly different hands-on experiences and insights for the participants. Online event should not aim to imitate the onsite experience. Instead, they should establish "the online event experience" as its own type of event with new elements and characteristics.

A limitation to this research is the restricted human thinking – when evaluating an online event and what can be done in an online environment, the thoughts are often tied to comparing online events to an onsite events and factors that make onsite events a success. As seen also in the conclusions section, part of the best practices discussed are replicated from the physical experience (such as activity buttons to demonstrate applause). When designing the online event experience, it could be extremely beneficial to think "outside of the box" as much as possible to create innovative features and elements to an online event, which can only be achieved in the online event context. The danger with online event organisers is to compare the online event experience too much with the onsite event experience causing the creativity to suffer. In this sense, and as this research concludes that online events should not be compared with onsite events, this study disqualifies the

relevance of the sub-research question, *how to emphasise the benefits of an online event adequately so that that the online event becomes comparable with an onsite event?*

The material (event cases) used in this research mainly relies on sources which aim to reproduce onsite event setting or compares and evaluates the success online events to onsite events. This has resulted in somewhat limiting the discourse of this research. In the future, when the online event platforms have developed further with new interactive features and online events have established themselves as a viable event category (instead of being the "option B"), conducting more studies on the online event experience would be beneficial. As a suggestion for future studies, it would also be interesting to analyse the online event experience further in the CoI-framework.

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