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A qualitative study on the perspective of industry experts

Introduction

Metaverse was one of the keywords spotlighted in 2021 (Clark, 2021; Herrman & Browning, 2021). The term metaverse is a combination of the words "meta" (which means *transcending* in Greek) and "universe." While there are ongoing debates on how to define metaverse, it is often used to refer to virtual reality or virtual environment.

Indeed, metaverse technology is in its early stage. However, the arrival of the metaverse era is already affecting the Meetings, Incentive Travel, Conventions, and Exhibitions (or Events, hereafter *MICE*) industry. According to Event Industry Council, the event industry generated 2.53 trillion dollars of total output, 1.5 trillion dollars in total GDP, and 25.9 million jobs (Events Industry Council, 2018). However, COVID-19-related social distancing regulations and concerns about viral infection limit the possibility of organizing events at physical venues. Most events had to be canceled or postponed, which caused a devastating loss to the industry (Brewer & Young, 2020; Fekadu, 2020). Virtual events are considered an alternative for exhibitors other than canceling the event. For example, popular singer Travis Scott had a live concert in the virtual space of the video game Fortnite (Hackl, 2020). While it may not be in the metaverse, many exhibitors already have experience holding virtual events over the Internet using live streaming technology or an online meeting platform (UFI, 2020). Hence, we may expect virtual or hybrid events to become more common in the upcoming years.

Although technology has allowed the MICE industry to hold a meeting in a new way, it may also present new challenges to the industry that relies heavily on physical space-based face-to-face meetings. The change is especially critical for the providers of meeting venues, such as convention centers or hotels. In this time of challenges, transition, and opportunities, the current study captures how metaverse technology will affect and change the MICE industry. The authors took a qualitative approach and performed a two-stage thematic analysis. Nineteen experts in the business were questioned using a semi-structured interview.

Literature Review

Technology adaptation in MICE industry and metaverse

According to Event Industry Council (EIC), event technology can be defined as "any technical and technology need to support meeting or events, such as audio-visual, computers, software, power, networking, and connectivity" (*Event Technology*, n.d.). Event industry experts anticipate that technology adaptation will be one of the most crucial trends in the industry (German Convention Bureau, 2014), 2014). The recent COVID-19 pandemic further accelerated the adoption of event technology. Although the majority of meetings were postponed (44%) or canceled (14%), the virtual meeting took the second largest portion (30%) (ICCA, 2021). However, it is debatable whether this is a short-term transition while the COVID-19 pandemic is still ongoing, or whether there are chances that some segments of the meetings will continue to be replaced by virtual events (UFI, 2020).

The term metaverse was first used in the book *Snow Crash*, a Science Fiction by Neal Stephenson. The concept of metaverse has been used since the early 2000s. However, technological

development and academic research on metaverse are still in the early stages. There is no agreed definition of the metaverse. For example, (Smart et al., 2007) defined it as the convergence of virtually enhanced physical reality and physically persistent virtual space (p.4). They categorized four types of metaverse based on their degree of convergence with the physical world (argumentation-simulation axis) and the focus (intimated-external axis); namely, Augmented reality, Lifelogging, Virtual Worlds, and Mirror Worlds (Smart et al., 2007, p.5). Meta (formerly Facebook) defines it as a virtual space where people can socialize (Meta, n.d.).

Unified Theory of Acceptance of Use of Technology

Venkatesh et al. (2003) developed the Unified Theory of Acceptance of Use of Technology (UTAUT) by comparing eight theories that are related to human acceptance of technology, which include the theory of reasoned action (TRA), the technology acceptance model (TAM), the motivational model, and the theory of planned behavior (TPB). In the initial model, they formulated four main constructs as direct drivers of user acceptance and behavior: *performance expectancy*, *effort expectancy*, *social influence*, and *facilitating conditions*. Although this model was criticized for its limited applicability in the organizational situation (Bagozzi, 2007; Benbasat & Barki, 2007; Venkatesh et al., 2007). Building on UTAUT, Venkatesh et al. (2012) developed the UTAUT 2 model, which extended the original model by incorporating three new constructs more closely related to consumers' technology adoption: *hedonic motivation*, *price value*, and *habits*. This study used the UTAUT 2 model for inductive thematic analysis to examine technology adoption in the MICE industry.

Methodology

The interview participants were chosen using the purposive sampling method to investigate the opinion of experts from different sectors of the MICE industry. Purposive sampling was deemed the most appropriate sampling method for the current study since a researcher "can learn a great deal about issues of central importance to the purpose of the inquiry...[by studying] information-rich cases yield insights and in-depth understanding" (Patton, 2002, p.230). The interviewees were sampled from practitioners and researchers with expertise in the fields of MICE, tourism, and ICT. The sample was spread across regions and different sectors of the industry to ensure well-balanced interview data. The final sample contained 19 experts from 8 different types of organizations: convention centers (N=9), hotels (N=3), professional convention organizers (PCOs, N=2), press (N=1), association (N=2), research institution (N=1), and education institution (N=1). Due to safety concerns and social distancing regulations during the COVID-19 pandemic, the interviews were conducted by email.

To ensure the consistency and validity of the interview, the questions were presented in the same order for all participants. A follow-up telephone interview was conducted in case of unclear statements or further questions arising from the response. The interview questionnaire consisted of eight questions. The first section of the interview inquired about prior experience with virtual events and prospects of them. The second section questioned prior experiences with the metaverse and its usefulness, impact, and prospects in the MICE industry. The pilot interviews were conducted with three MICE industry practitioners to verify the clarity of the questions and the effectiveness in capturing rich responses. Some of the questions were revised and supplemented after the pilot interview.

The collected interview data was analyzed using a two-stage thematic analysis method. In the first stage of analysis, researchers read the interview to code meaningful terms and repeated the process until no further themes emerged. The generated codes were classified and mapped based on the themes. Subsequently, the second stage analysis involved a deductive approach using provisional coding based on the UTAUT 2 model.

Results

Five topics emerged as a result of the deductive semantic analysis: complementary goods, the scope of application, technology, cost and profitability, and short- and long-term prospecting. The topics centered around metaverse as a complementary technology. Three participants who had a better understanding and higher interest in metaverse thought highly of the applicability of metaverse technology in the MICE industry than other interviewees.

Necessity versus complementary

All 19 interviewees agreed that virtual events (including metaverse) could serve some function of physical events; however, they cannot replace the offline event entirely. Eighteen participants predicted that the hybrid event, which has the merit of physical and virtual events, will become more common in the future. Interviewees L and Q expected that physical events would become active again.

However, since people became familiar with virtual events during the COVID-19 pandemic and technology will also evolve rapidly, it was predicted that there would be differences in the applicability of metaverse technology depending on the type and nature of the event. Most interviewees expected that virtual events would become more common for meetings to deliver and share knowledge and information, while they cannot replace exhibitions where sellers and buyers exchange goods and services. However, some mentioned that hybrid events would be more effective for B2C exhibitions.

In the end, if the event is held in both metaverse and real-world, metaverse technology will be used as a complementary service to enrich the experience of the offline event (A, B, C, S).

The general applicability of metaverse technology

The interviewees' opinions on the types of events that can be held in the metaverse and the likelihood of realization were similar. They agreed that some events could be replaced with metaverse events when people cannot gather around due to social distancing and safety regulations, and metaverse can provide experiences that are not possible in real life. However, the effectiveness of implementing metaverse events will vary depending on the type of events and the age group of participants.

Although the participants deemed that the metaverse platform can be used for conferences, seminars or other types of meetings that can aim to provide knowledge and information (B, E, M, R), they were skeptical about the applicability of technology in exhibition. Interviewee B mentioned that "because exhibitions are where buyers can see and touch the products of sellers, it is unlikely that metaverse will replace offline events." Specifically, the participant posed that exhibitions related to the food and beverage industry cannot be replaced by virtual events (B), although they can be useful for the gaming, entertainment and distribution industries (E). Additionally, the currently available metaverse platforms are mostly aimed at teenagers,

Generation M, and Generation Z. Therefore, the adaptation of metaverse technology will be limited to events where most of the participants are in older age groups (M, N).

Technology

Most of the interviewees who have experienced virtual events pointed out the difference in digital capabilities between the participants and the possibility of technical problems during the event as a risk factor. Participants who have hosted international online meetings disclosed that there were issues when facilitating the meeting because the Internet environment differed by the meeting participants, which caused uneasiness about possible technical problems and meeting participants were less focused on the event. It is a risk that should not be overlooked, as it is beyond the control of the organizers.

Considering that metaverse technology is in the early stage, especially it is in the experimental stage in the MICE industry, the active use of metaverse seems uncertain. Interviewee N stated that "though metaverse technology seems promising, there were noticeable shudderings and the movement of avatars was unnatural which made it feel like just a game character."

Technologies required for the development of metaverse technology to be more usable in the MICE industry are also suggested; technologies such as digital human, blockchain-based NFT, payment systems that can be used in both real and virtual world, security systems, AI, VR, and AR. Interviewees positively prospected that when such technologies are further developed and combined with metaverse, they will become more capable in the MICE industry. However, some also pointed out that technologies to prevent possible offenses in the online world should also be supplemented. Interviewees E and Q emphasized the importance of preventing digital fraud and complementing security technology to protect personal information. However, the development of the above-mentioned technologies is beyond the MICE industry's capability. Instead, sustained interest and basic knowledge would be needed from practitioners (A, F).

Cost and profitability

There are factors that both increase and decrease the cost of hosting the event using metaverse technology. The perspectives of the organizer and the participant on the cost also varied. In some aspects, cost increases since organizers have to rent the equipment for the virtual event and create content for the event (B), and the costs will increase even further when a low-cost metaverse platform is not available, or the organizer has to make the platform from scratch. Conversely, some costs decrease, such as the cost of hiring the venue and catering for the event (B, C, D). However, hosting a hybrid event could double the expense (O).

For the participants, the time and money to join the event decrease. They do not need to physically move to a different place, which drastically reduces time to participate in the event and expenses for transportation and accommodation. However, this will present new challenges to both the MICE industry and the hosting city, since the event may not be profitable. Physical venues such as convention centers and hotels will have to compete with the metaverse (B, F, G), and virtual events would be less economically beneficial for the host city (G).

Short-term versus long-term

Most participants agreed that holding virtual events was inevitable during the COVID-19 pandemic to maintain the continuity of the event and it was a way to meet the minimum requirement of communication during the meeting. Therefore, many of them shared the view that the metaverse will only affect the MICE industry in the short term with limited impacts (A, C, G, L, P, Q). That is related to the characteristics of the MICE industry, where people directly interact with each other (A), exchange emotions, and form a network (P). Some predicted that demand for physical events would rebound after the pandemic (P, Q). In the long term, participants predicted that hybrid events will become more common and that the digital event will complement the offline event.

In contrast, some participants expected that the impact of metaverse on the MICE industry would be significant. Interviewee E posed the question that metaverse is not a temporary phenomenon but the result of technological advancement, and it can be both an opportunity and a challenge. Participant R predicted that having a social relationship in the virtual world will become more familiar to people when the pandemic becomes prolonged. Except for three interviewees, participants had no prior experience using the metaverse platform for the event. Moreover, those who had experienced it pointed out that it is not yet sufficient for MICE participants.

Deductive analysis result

In the second stage of analysis, the authors applied provisional coding using the UTAUT 2 model. From the model, seven exogenous constructs affecting behavioral intention (performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit) were used as coding categories (Venkatesh et al., 2012). Table 1 presents the results of the deductive analysis of the interview data.

Table 1. Deductive analysis result based on UTAUT 2 model

Constructs	Findings
<i>Performance expectancy</i>	Tangibility
	Sense of presence
	Immersion
	Interaction (participant-participant and participant-host)
	Networking
	Information sharing
	Business-to-business (B2B) performance
	Promotion
	Negative effects on hotels and convention venues
	Increase in the number of participants
<i>Effort expectancy</i>	Complementary or substitutionary
	Time-saving benefits
	Transcending spatial boundaries
<i>Social influence</i>	Risk and challenges beyond organizers' control
	COVID-19 pandemic
	Short-term trend
	Generational difference
	Anonymity

	Possibility of crime
<i>Facilitating conditions</i>	Technological advances
	Hardware requirements of participants
	Long-term social change
	Constant monitoring of industry trends
	Education and training on new technologies (organizers and participants)
	Compatibility with conventional events
<i>Hedonic motivation</i>	Online platforms with fun elements
<i>Price value</i>	Decrease in participation cost (accommodation and transportation)
	Increase/decrease in hosting cost (venue, equipment, HR, speaker)
<i>Habit</i>	None

Conclusions and Discussion

This study examined practitioners' opinions on how metaverse technology will affect the MICE industry. Although theoretical groundings on the definition, scope, and applicability of the metaverse have not yet been established, the study attempted to capture emerging trends in the field. Especially, as the interviewees also pointed out, hosting and participating in the virtual event is becoming more common due to the prolonged COVID-19 pandemic. Seemingly, metaverse could provide an experience closer to the physical event, or even that of only possible in the virtual world.

In general, participants conveyed that the metaverse cannot replace the physical event. Furthermore, the technology is still in its early form, making it hard to apply on a broader scale. However, the findings suggest that there are advantages in holding virtual events for both organizers and participants. When using virtual space for the event, organizers can save the cost of renting and creating physical space, and participants also save time for travel, transportation, and accommodation expenses. However, it also presents challenges. One of the biggest disadvantages is that the quality of the virtual events' experience is less dependent on the organizer but more so relies on the technological environment of participants. Therefore, it worsens the heterogeneity of the experience, making it difficult for organizers to control and provide a quality experience. Additionally, the interviewees mentioned that virtual events are less effective in creating social relationships. While social interactions are one of the key aspects of MICE, the complexity of multisensorial human interaction and technological limitations make metaverse and virtual events unsuitable for B2B events. In general, it was suggested that while metaverse technology cannot replace physical events, it will present unique opportunities and challenges for the MICE industry. Details of the analysis that are not disclosed in the current abstract will be presented at the conference.

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