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**California Management Review**  
**Special Issue on**

**The Metaverse, Virtual Game and Social Worlds:  
About Augmented and Virtual Reality and their Impact on Business and Management**

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When we included virtual social worlds as part of social media in 2010 (Kaplan and Haenlein 2010), our logic was often challenged. At the time, an environment like Second Life seemed so different from Facebook or Twitter that it was hard to see how these applications could all belong to the same group. To us, however, the link was more than evident. A decade later, in 2021, our reasoning was confirmed when social media titan Mark Zuckerberg, CEO of the world's largest social network, announced its move into the Metaverse, i.e., virtual worlds (Brown 2021). Defined as a three-dimensional, immersive, and unified virtual world, the Metaverse is considered as the future Internet. The term itself, a portmanteau of "Meta" and "Universe," goes back to the science-fiction novel Snow Crash, published by Neal Stephenson in 1992. Snow Crash tells the story of the pizza delivery driver Hiro, who physically lives in Los Angeles but virtually spends most of his day in the Metaverse.

**The Metaverse - More than Old Wine in New Bottles**

When thinking of the Metaverse, which today is still more a concept than an actual application, you might still have Second Life in mind (Kaplan and Haenlein 2009b). Does this mean that the Metaverse is only old wine in new bottles? To a certain degree, it is. Virtual worlds have been around for at least twenty years, if not longer. Look at Sensorama – a machine developed in the 1950s with a built-in seat that played three-dimensional movies, generated vibrations, and even diffused scents to render the experience as realistic as possible. In many ways, Sensorama is one of the earliest known virtual reality devices and the great-grandfather of today's Oculus Quest or Sony Playstation VR.

Although Second Life still exists today, the excitement and media attention around it soon declined, mainly due to the technological issues that made it incompatible with mass-market adoption. Whereas at the time, navigation used to be difficult and, at times, very slow, today's virtual worlds are much improved. The technologies behind the Metaverse have seen significant advances and changes over the years (Kim 2021). Today users can be entirely immersed by wearing headsets, gloves, or entire bodysuits instead of merely glancing at their computer screens.

## **From Physical Actions To Virtual Ones and Back Again**

Various technologies, e.g., spatial computing and artificial intelligence (Haenlein and Kaplan 2019; Kaplan and Haenlein 2020), are applied to translate physical actions into the virtual sphere. Facial expressions must be transposed into virtual ones: When you smile, your avatar should also smile. When you raise your eyebrows, your avatar should do the same. Also, hand movements must converge into virtual hand activity to create an engaging user experience. Still, even seemingly simple questions remain unanswered. For example, the representation of legs in most virtual worlds is an open issue. To circumvent this, avatars in most virtual worlds appear as floating torsos. This avoids the virtual reality sickness triggered by avatars not moving synchronously to their human alter egos (the virtual equivalent of getting car sick). At some point, legs may be virtualized with the help of AI, deducing leg activity from analyzing the movement of your head and eyes – data available via the headset.

In the same way, virtual stimuli must be transposed back into real-life human senses. Virtual reality headsets enable us to see virtual worlds in three dimensions. Audio technology further helps to create a 3D experience, hearing further away avatars less loud than close-by ones. Increasingly, haptic sensors are added, permitting body suit wearers to feel resistance when hitting a virtual wall or even start sweating when navigating a virtual desert. While the current focus lies on seeing, hearing, and feeling, the senses smelling, and tasting are not forgotten. Digital scent or olfactory technology lets you smell green grass when standing on a virtual meadow, and concerning taste, just recently, a lickable screen imitating food flavors was developed (Teh 2021).

## **Virtual Worlds, Their Opportunities and Threats**

The above may give a sense of the highly immersive experience such a multi-sensory Metaverse can offer. While still a long way off, existing virtual social worlds and virtual game worlds offer many opportunities (Kaplan and Haenlein 2009b). They can be used

- to hold virtual team meetings and recruiting talks;
- to support new product development (Harz, Hohenberg, and Homburg 2022);
- to advertise or sell digital products (Gucci's virtual Queen Bee Dionysus bag just sold for ~ \$4,000 on the virtual second-hand market) or hybrid ones, i.e., virtual representations of actual, real-life products and services purchased in the Metaverse but delivered to the buyers' actual real-world homes;
- to provide courses in innovative educational settings (Kaplan 2021, 2022),
- to organize virtual gaming and entertainment events such as the concert given by, e.g., Ariana Grande in the virtual world Fortnite (Webster 2021).

To tap into the full potential of the Metaverse, organizations will need to show substantial imagination and avoid simply transposing current reality into the virtual environment. For example, when selling its virtual sneakers on the virtual world Roblox, Nike integrated superpowers such as increased speed or the ability to jump an extra-long distance. How to get those superpowers? As a sports brand, Nike decided that you needed to do some exercise in the real world. To get the virtual superpowers, users needed to download a smartphone app, and according to the distance they walked in real life, their avatar's superpowers increased in the

virtual sphere. In line with the brand's image, Nike incentivized physical exercise to prevent fans from sitting only in front of their computer (Golden 2021).

But with the opportunities that the Metaverse offers also come challenges and threats. How, for example, do you ensure that the avatar you are interviewing is the person whose CV you have in front of you? Virtual identity theft and biometrical identification supported via blockchain technology, as well as data privacy and security, will be important topics to reflect upon. Accountability of avatar behavior will need to be regulated. Let's take the example of sexual assault. In many legal systems around the world, for assault to have occurred, some actual bodily harm must have been suffered. Haptic technologies enable users of the Metaverse to feel the sensation of being touched or groped. Do such digital actions equal physical assault?

### **Utopia or Dystopia?**

Finally, one also needs to ask if there should be limitations to the usage of the Metaverse. Should humans be protected from overconsumption and potential addiction to the Metaverse? It is proven that virtual game worlds can lead to addiction with sometimes terrible consequences for users. Some countries already have regulations that compel virtual game worlds to require minors to take regular breaks from playing. Our research showed that some Second Life users spent up to 16 hours daily in this relatively low immersion virtual world, leaving it only to sleep in real life (Kaplan and Haenlein 2009a). Once a user passes the 12-hour threshold, it becomes hard to tell which part is real life and which one is virtual. One can only imagine what a fully immersive Metaverse engaging all of our senses could do to some of its users. Society might need to be protected to not end up like Neal Stephenson's (1992) protagonist Hiro who considered the Metaverse not only as an extension to his real life but as an actual replacement.

This Special Issue aims to analyze the impact of the Metaverse and virtual worlds on a broad range of business and management subjects ranging from Business/General Aspects, Finance, Human Resources, Innovation, and Entrepreneurship, to topics in Marketing and Technology related to Business. Submission can cover various sectors such as the automotive industry, entertainment and fashion, gaming, health care, higher education, and retailing. Proposals can be based on all types of research, disciplinary or interdisciplinary, conceptual or empirical (qualitative or quantitative). Some exemplary topics that this Special Issue intends to answer include but are not limited to:

#### **General/ Business Aspects**

- Business models in the Metaverse
- Metaverse and user adoption
- Sustainability and the Metaverse
- Addiction, misuse, and overuse of the Metaverse
- The dark side of the Metaverse on individuals, organizations, and society at large
- Digital divide accentuated by the Metaverse
- Ethics in the Metaverse
- Regulation and the role of the government in the Metaverse

#### **HR Aspects**

- Human-computer interaction in the Metaverse
- Recruiting in the Metaverse

- Virtual meetings and conferencing
- Virtual team management and collaboration in the Metaverse
- Zoom Fatigue and the Metaverse

### **Marketing Aspects**

- Adequate products and product design in and for the Metaverse
- Digital communications and marketing in the Metaverse
- Purchasing and user behavior in the Metaverse
- Reputation building and branding in the Metaverse
- Trust and distrust in the Metaverse
- Value co-creation in the Metaverse

### **Technology Issues of Managerial Relevance**

- Authentication mechanisms
- Data security and privacy in the Metaverse
- Metaverse and the blockchain
- Translation of identity and embodiment into the Metaverse
- Virtual, mixed, and augmented reality

**Authors should submit a full manuscript no later than April 30, 2023, to the attention of Andreas Kaplan (kaplan@escp.eu) and Michael Haenlein (haenlein@escp.eu).** Manuscripts should have between 5,000 and 8,000 words (excluding tables, figures, and end notes), be double-spaced, and employ a font size of 12.

CMR primarily publishes original, research-based articles which address issues of current concern and interest. Papers should be practitioner-oriented, offering prescriptive advice for managers that will help them in their role.

Based on these submissions, the Guest Editors will select a subset that is most likely to result in first-rate, high-impact submissions. Authors of those selected submissions will be invited to submit their papers online through the CMR system to start the peer review process. First editorial decisions take up to six months.

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