

Research on Interactive Visual Design from the Perspective of Metaverse

Fei Xiang, Jingkun Liu*

School of Art and Design, Hubei University of Technology, Wuhan, China

*Corresponding author

Abstract: *The metaverse is an emerging concept. Throughout the development of information technology and media, people have begun to consciously transform and reshape the world. This is a new way of information interaction and the evolution of the Internet from 2D to 3D. The metaverse is a brand new topic, and human-computer interaction will also usher in a new revolution. The new interaction of the human-machine world will bring new challenges to interaction design. The tools and platforms under the concept of the metaverse are increasingly complete, and the interactive visual design from the perspective of the metaverse is also worth studying.*

Keywords: *Metaverse, features, interaction design, visual design*

1. The development of the metaverse

From 2020 to the present, the development of society has brought about many changes in people's lives. Travis Scott held an online concert in "Fortnite", with 12 million people online at the peak, UC held an online graduation ceremony in "Minecraft" and so on. These changes make everyone think, discuss, and pay attention to the future metaverse. On the one hand, the increase in attention to the Metaverse is based on people's demand for improving production and living efficiency, and on the other hand, the achievability of technologies including 5G and AI is getting higher and higher.

The concept of the metaverse has been widely discussed. It uses extended reality technology to make virtual worlds closely integrated with economic, social, and identity systems, allowing each user to make and edit their own works. It's like an artificial parallel world in which people can enjoy the "creator" fun. Throughout the development of information technology and media, human beings continue to change the way they perceive the world, and consciously transform and reshape the world. The tools and platforms under the metaverse concept are becoming more and more complete, and the interactive visual design under the metaverse perspective is also worth studying.

2. VR, MR and metaverse interaction technology

Virtual Reality (VR) is called virtual reality. VR will be simulated by a computer to create a three-dimensional virtual world. Through the user's actions, the senses are simulated, giving the user an immersive feeling. Mixed Reality (MR) is a combination of virtual reality (VR) and augmented reality (AR). Combining the real and virtual worlds creates a new visual experience where physical and digital objects coexist and interact instantly.

Interaction technology, also known as interaction design, is the design around interactive digital products, environments, systems and services. Interaction design focuses on form (similar to other design fields) and its focus is on behavior. Interactive technology offers a whole new experience to the virtual world. The Metaverse is a shared virtual space that enables individuals to interact with other users in a digital environment, thereby creating a virtual world in which people can be placed in a virtual space that is parallel to the real world.

3. The nature of the metaverse

The metaverse is a parallel and persistent virtual world built on the basis of the real world, with a complete social system in this world. We can do anything in the metaverse that we can do in real life. We can socialize and consume in this virtual world, including playing games, going to concerts, watching

movies, shopping, and even creating. Although the metaverse is a virtual world parallel to the real world, it is also a projection of the real world, providing people with the closest experience to the real world through images, sounds, etc.

The term metaverse comes from Neil Stephenson's 1992 book *Avalanche*, which describes the metaverse as a virtual world parallel to reality. To many, this looks like VR, but unlike VR, it's a whole different world. Users who enter the metaverse experience not only games or movies provided by VR, but also all events that can be experienced in the real world, such as work and study. When the metaverse is completely constructed, the user can detach the activity from the real world and enter the metaverse life as an avatar.

Through the investigation of the real world, we can summarize the social life of "people", "productivity", "production relations", "social means of production", "economic transaction system", "legal relations", and "environment and technology" elements. The metaverse completely transforms and constructs these elements, and finally becomes an existence that is independent of reality and conforms to the laws of the universe. The Metaverse is a simulated world made up of different companies and institutions that spans national boundaries. The metaverse is interconnected, independent, illusory and real, and this attraction has attracted more people's attention and exploration.

4. The characteristics of the metaverse

While there is no standard definition of the metaverse, there are certain characteristics that are generally recognized. Roblox proposed eight key features of the metaverse: Identity, Friends, Immersive, Low Friction, Variety, Anywhere, Economy, Civility. Although there are different controversies about these characteristics, most of them are accepted by everyone. On this basis, we can further summarize and analyze the following main characteristics in depth:

First, it is extremely convenient to use. In the future, 80% of human activities such as life, work, study, and social interaction will be carried out in the metaverse. In the end, the metaverse world will be fully integrated with the real world. It must be extremely convenient for people to use and participate, just like we use mobile phones, or even like we talk, as natural as breathing. Among the eight features mentioned by Roblox, low latency and anywhere is the same meaning.

Second, the immersive experience. Immersive experience is the feeling of being on the scene, and it is almost impossible to distinguish the boundary between the virtual world and the real world. Just like the scene in the movie "Ready Player One" (2018), when you put on the VR device, it is like passing through a time-space tunnel to another time-space and starting a different life.

Third, social networks. Without society, it cannot be called a metaverse, and social networks are the norm for the metaverse. Human beings are a social creature, and human sociality has been developed together with human beings since ancient times. Only by communication can there be sparks of thought and human civilization can be brought to a higher level. Tencent has invested in many metaverse products and continues to increase its investment in the "metaverse", while Soul App's 49.9% stake may become an important part of its social field. ByteDance has also recently launched a product called "Pixsoul" overseas (Southeast Asia), focusing on metaverse social networking.

Fourth, the economic system. The supporting factors of the metaverse economic system are: digital creation, digital assets, digital markets, and digital currencies. Decentralized creation, also known as UGC creation (user-generated content), is the cornerstone of the metaverse economy, creating digital assets that can be circulated in the metaverse. The digital market is a complete market system that players need to comply with. As a carrier of transactions, digital currency is the center of the entire metaverse economic system.

Fifth, civilization. The ultimate level of the metaverse is to form its own civilization system. "Civilization" is the sum total of humanistic spirit and inventions and inventions recognized and accepted by the vast majority of people in the history of mankind's cognition and adaptation to the objective world. The metaverse is not unique. In the process of living together, the residents of each metaverse set common rules, establish different organizational structures, and gradually evolve into a civilized society. Different metaverses form different civilizations, and various metaverse civilizations together constitute a wonderful future world.

5. The connotation of metaverse interactive visual design

The metaverse can create a whole world based on augmented reality technology (including VR and AR), which allows us to achieve a more realistic VR experience. Access spaces in virtual reality tend to be static and do not change during setup. In the metaverse, users can modify their content at will. All artists, musicians, filmmakers can utilize a variety of development tools to create endless possibilities.

If the interaction design at this stage is to build a bridge for communication between virtual and reality, then the interaction design in the metaverse is to build the virtual world into another "real world". Although the current science and technology can only bring the user's hearing and vision into the metaverse, if with the development of technology, more senses can enter this virtual world, the boundary between virtual and reality will become more and more blurred. When this boundary no longer exists, the virtual is reality.

The metaverse is a brand new topic, and human-computer interaction will also usher in a new revolution. In the Metaverse, the user's eyes, movements, expressions, and expressions will all receive feedback from the Metaverse, and will also give feedback to the Metaverse. The new interaction in the human-machine world will bring new challenges to interaction design, and design products in line with the current era, aiming to make the design better serve individuals and people, and create products that conform to the future development trend for the society.

6. The influence of the introduction of metaverse concept on interactive visual design

The next best interaction design is intuition-driven, easy-to-use, and aesthetically pleasing. The underlying logic of these interaction designs will be completely transformed into one word "immersion" with the advent of the Metaverse. Richard Bartle, founder of MUD (Multi-User Space), wrote in "Designing Virtual Worlds", "When people can get things in the virtual world that they can't get elsewhere, they will stop using the virtual world as a game tool, but the world they live in."

In the metaverse, interaction design is no longer about how to make users reach their goals faster, but how to make users more immersive when they reach their goals. Users will want to enjoy the journey to see a friend, not a simple video call, or the leisurely feeling of shopping with a lover, not the convenience of online shopping. Such changes in underlying logic will bring new challenges to interaction design. Designers need to learn more to underpin their work, from economics to sociology to anthropology and more. Only with the support of huge knowledge can designers design a new society for users. As the metaverse develops, the weight of interaction design in society will increase further. At the same time, this also means that interaction design will usher in new challenges.

7. Conclusions

Although the current interaction design pattern will remain for a long time until the arrival of the complete metaverse, due to the importance of interaction design in the metaverse, academic research and discussion on future interaction design is also time to start not early. And with the increase of interaction design content, there may be two different development directions. One is that this discipline may be subdivided internally, and full-time interaction designers may be subdivided from various fields of society. It is the interaction designer who will become a director-like role, guiding experts in various fields to build the metaverse with the goal of the user having the best experience in the metaverse.

References

- [1] Longji Tang. *A new digital shock wave: The coming of the metasomes: The Future of intelligent manufacturing and supply chain* [R]. Shanghai: Rogo Research, 2021.
- [2] Ruxi Wang, Anling Xiang. *2020-2021 Metaverse Development Research Report* [R]. Beijing: New Media Research Center of Tsinghua University, 2021.
- [3] Guoming Yu. *The Evolutionary Logic of Future Media: The Iteration, Reorganization and Dimensional Improvement of "Human Connection": From "Scenario Age" to "Metaverse" to the Future of "Heart World"* [J]. *Journalism*, 2021 (10): 54-60.