Metaverse: Threat or Opportunity for Our Social World? In understanding Metaverse on sociological context

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Abstract— **Metaverse technology is a new technology that will focus on working, studying and entertainment in the future. In sociology, the existence of this technology will change the culture of society. The connection to social reality will be lost in the metaverse. This article aims to discuss in detail how the reality of technology metaverse in social life. This article will be discussed using the sociological descriptive analysis method in depth using various theories in the field of sociology. In this paper, will focus more on the discussion of how metaverse technology can affect human social life, what impact this technology has on humans, what challenges this technology faces, and the analysis of this technology from the sociological context. Although still in the design stage, the impact of this new technology seems to be obvious. In sociology, the existence of this metaverse technology will try to change the culture of society such as the culture of interacting, working to seeking entertainment. Although still in the design phase, the impact of this new technology seems to be real.**

Keywords— *Metaverse, Future of metaverse, pros and cons of metaverse, metaverse on sociological, metaverse and social life*

I. INTRODUCTION

At the end of 2021, the world public was shocked by the news that the social media parent company Facebook changed its company name to Meta. This certainly makes the public surprised, where the name Facebook is already familiar to some people in the world. In this case, Facebook CEO Mark Zuckerberg changed his company name to Meta not without reason. Zuckerberg sees that by changing the name of Facebook to Meta, he targets his company to become a Metaverse company in the next five years. Even unmitigated, to prove his seriousness, Zuckerberg invested his assets for this metaverse to reach billions of dollars (Laeeq, 2022).

The term metaverse is actually not a new thing that appears in our lives. The idea of the metaverse itself first existed since the 90s. According to Joshua (in Damar, 2021) said that the word metaverse first appeared in 1992 in a fictional novel entitled Snow Crash by Neal Stephenson. In this novel, Stephenson defines the metaverse as a large virtual environment. Stephenson further said that the metaverse is a virtual world where users, represented by avatars, can interact through Extended Reality (XR) technology.

Amazing experiences that usually exist in fictional films have now become reality because of XR technology. Imagine what it's like to live in a futuristic world where virtual experiences are a part of the everyday lives of its users. Extended Reality (XR) itself refers to the amazing use of technology that expands reality and combines the real and virtual worlds. In other words, XR means an umbrella term that combines Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) (Vasarainen *et al.*, 2021).

By using XR technology and other supporting devices, users are directed to a virtual world that seems to create a layer of life between users as real humans and the metaverse like humans in cyberspace. It's the same with the fictional film that was just released in early May 2022, namely Doctor Strange in the Mutliverse of Madness, where it is told that there are many worlds out there where humans also live in each of these worlds. The concept of the metaverse is almost the same as the concept of this film, but the difference is that in the metaverse, the user will determine the shape of his body through an avatar to live in cyberspace.

Metaverse gives their user a virtual world in the form of 3D where all activities can be done with the help of Augment Reality (AR) and VR technology. With these two tools and other supporting tools, the metaverse world is as real as the real world, even more so than the real world, because with this technology, their user are free to be whatever they want. Augmented Reality on the other hand describes a technology that is capable of interacting between virtual experiences and the real world. It enhances the real world environment with images, animations or text. Usually this can be realized by using devices that have AR applications such as tablets, smartphones or smart glasses. While Virtual Reality allows users to interact with a three-dimensional environment using electronic devices such as VR headsets, controllers and gloves. Meanwhile Mixed Reality is a combination of VR and AR. The goal is to fill the empty space between virtual and augmented environments. MR combines the digital world and the real world into a separate environment, so that VR and AR can interact with each other in real time.

The phenomenon of using this technology has become increasingly popular in recent years because people have shifted their activities online, especially during the Covid-19 pandemic that swept the world.

Seeing this opportunity, Zuckerberg as the big boss of the giant Facebook company will officially launch this metaverse. Zuckerberg said that the metaverse is the forerunner of the future of the internet. This was also

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conveyed by Robinson (2022, p.9) who said that some proponents believe the metaverse could be the future of the internet, with its series of virtual worlds establishing the most important new technology platform since the arrival of the worldwide.

But in every new wave of a phenomenon, there must be pros and cons. Likewise with metaverse technology. Although its application has not been officially implemented, the impact of this technology has also invited polemics among the world community. There are those who say that the metaverse tends to have a negative impact on human life, not a few who deny this and argue that the metaverse is the future technology of the world that will greatly help humans in every way. As expressed by technology experts such as Simon Powell. He said that a single metaverse could be more than a decade away, but as it evolves it has the potential to disrupt almost everything in human life that has not yet been disrupted (Sozzi, 2021).

In addition, there are many more things that are still a problem with this technology. Therefore, by looking at this background, the writer sees that there is a unique problem that needs to be discussed regarding this technology and is interested in discussing it in this term paper under the title "*Metaverse: Threat or Opportunity for Our Social World?- In understanding Metaverse on sociological context*.

II. DISCUSSION

A.   *Metaverse and Social Life*

Surfing the internet is a lot of fun. There is a lot that can be obtained from the existence of this internet technology, from searching for information, learning, to looking for entertainment for self-pleasure. But technology such as the internet can only be enjoyed through a screen, its users cannot participate and engage directly, in real time with this technology.

Through this background, technologies such as the Metaverse were born. Where users do not only want to participate and be involved only through touch screens, but rather want to be involved in real and real time. This was also coupled with the situation during the Covid-19 pandemic that hit the world, where all offline activities were restricted which caused a change in the behavior of the world community to switch more to the digital world. This has a major influence on the development of the world of technology as well as the metaverse which is what some people really desire.

According to the Binance Academy (in Hovan George et al, 2021) defines metaverse is a hypothetical upcoming iteration of the internet, providing support to decentralized, long-lasting online 3-D virtualized environments, links between the financial, virtual, and physical worlds have become more and more connected. Adetunji (2021) via the website *The Conversation: Academic rigour, journalistic flair* adds that it is a network of always-on virtual environments where many people are able to interact with each other and the digital objects while operating virtual representations or avatars of themselves. This virtualized space will be available through virtual reality headsets, augmented-reality glasses, smartphones, PCs, as well as

game consoles (Hovan George et al, 2021). From this explanation, can be understand that the metaverse is a set of virtual spaces, where users can create and explore worlds with other internet users without having to be in the same physical space, with the help of VR, AR, and video technologies that produce virtual worlds where humans can be like living in it like real life.

It's like the roblox game, where this game is played by playing an avatar made by yourself to live and interact with other avatars in the virtual world, but the difference with metaverse is that metaverse uses VR devices that make users really feel like they are in a virtual world that, not just looking at the screen. Or it could be analogy with the metaverse as a new planet for humans. Imagine the discovery of a new planet not far from Earth, the beauty that exists on that planet can only be limited by human imagination, and all humans, whoever they are, can live on that planet. With this new land, of course, it will invite big economic actors such as big companies to compete to be able to control the widest possible land on the new planet. Not only that, there they will also build a civilization like in the real world on planet earth and build a dream city where anyone can be whatever they want, even things they can't do in the real world can be done in this new world planet.

In addition, besides that, understanding the metaverse can also be said as a virtualized copy and paste of the real world. Anything that is done in the real world can also be done in the metaverse. Users can have a career, buy land assets, buildings, cars with legal certificates according to the rules in the metaverse. All assets owned in the metaverse can be sold for economic benefits like existing Non-Fungible Token (NFTs).

In connection with the above understanding, the question naturally arises, how does this metaverse actually work and is developed so that it is predicted to be the future of the internet. Meta itself is a company that now does not operate independently like its previous name, namely Facebook.Inc. Meta itself consists of several holding companies that support and work together to develop cyberspace which is predicted to unite more than one billion users in the world by 2031. Reporting from the official website xrtoday.com (2021) there are a total of 160 more subsidiaries that support development and development of this virtual world. Furthermore, xrtoday.com also mentions that there are 7 giant holding companies thaat are investing heavily to help build this virtual world, such as Epic Games, Facebook, Niantic, Nvidia, Microsoft, Decentraland and Apple.

Epic Games is the company behind the popular immersive game Fortnite, which is very popular among gamers. Apart from Epic Games, there is also Niantic which has the same background as Epic Games. Later this company will focus on developing new gaming experiences in the Metaverse. Reporting from xrtoday.com, the Epic Games company poured money to build this metaverse worth 1 billion dollars. Meanwhile, Niantic itself invested 300 million dollars to support this virtual world. Next, there is Microsoft as a giant company that is no stranger to hearing about. Microsoft's direction in this metaverse tends to be towards providing jobs in cyberspace later. Then there is Nvidia, Decentraland and

Apple are companies that are developing 3D audio and visuals that will help metaverse users to be able to experience extraordinary experiences that they have never felt before. And the last core company which is Facebook (meta) is the holding company which is definitely a major actor in this metaverse. With the combination of the parent and subsidiary companies above, it will be able to build and help how this metaverse will work and provide new experiences to its users.

B.   The Pros and Cons of Metaverse

Metaverse works like entering a virtual world complete with all the facilities. In it, there are elements of life just like the real world. Then the most important thing is that the metaverse can never be separated from the internet as its main access. The internet is like a spirit in the human body that must be possessed if the user wants to enter the world of the metaverse. In addition, the way Metaverse works is supported by capable devices, namely headphones/headsets and AR or VR glasses. With these processes and tools, the user can become like Doctor Strange who can open new worlds and explore them, and are free to move around like the power that America Chavez had in *Doctor Strange in the Mutliverse of Madness* movie.

However, in its application, Metaverse faces many challenges as a new medium that will decorate the internet world in the future. According to Hovan George et al. (2021) say that the availability of devices to access the metaverse is a major problem. He further said that not everyone can access the gadgets vital to experience the Metaverse, like high-end systems as well as VR lenses. This problem is a very basic problem that must be considered by companies to attract customers. Moreover, problems such as internet connection are equally important. Not all areas are covered with high speed internet. This causes class inequality where only people who have middle to high class can enjoy this metaverse world. As for the lower class, can not do much.

Then Hovan George et al also said that the issue of privacy and security is also a serious challenge that must be considered by the builders of this virtual world. He further said that concerning security, the metaverse intimately links real-life together with virtual and augmented worlds. Although this dimension of reality will be placed in headsets and silicon chips, it can lead to real-life devices and systems being likely to be affected by the metaverse. For instance, hackers might take full advantage of the extensive integration of technologies for their own purposes, including stealing personal data, tracking, data mining, as well as gaining illegal access to restricted areas. These kinds of things will certainly be very easy for hackers to do and this is a problem that must be the main issue that the builders of this metaverse must pay attention to.

Furthermore, another challenge to be considered is data privacy and security in the Metaverse. New technologies require more advanced security measures. This calls for new approaches for data privacy and protection that are currently not available. Privacy will be another main concern for users being an augmented reality device would be similar to a monitoring device. Such a wearable would also have camera capabilities, know the precise location of the user, and store details about the user. Additionally, the metaverse would recognize others like each user must be a uniquely recognizable connection akin to an IP address. In other words, people could be tracked and located against their will using a headset. Camera equipment connected to hardware and metaverse services may be used for data mining. Data privacy and security continues to be challenging in the metaverse. With new technologies comes the need for greater developed security measures. This will require building new ways of data privacy and protection in which there was nothing. For example, in-person verification may require more data from users, thus increasing data privacy risks (Hovan George et al, 2021).

In addition, according to Ara et al. (2022) in his publication entitled Exploring the metaverse: What laws will apply? Indicates that there is a problem and a big question mark related to the laws and regulations that apply in the later metaverse. What laws apply in the metaverse? Who is watching over this new world? Further, Ara et al. said that most of the application of existing laws in the metaverse, as well as the potential creation of new laws, remains unknown. He added that, in some cases, the existing legal scheme may apply clearly. In other cases, existing laws become incompatible, and courts may be tasked with dealing with new issues of implementing new technologies. In other cases, existing laws may prove insufficient to address problematic behavior, which could trigger the passage of new laws and regulations. The scope of all the laws and regulations that can or may be involved in the metaverse is practically limitless and may result in innumerable legal problems. In addition, he also touched on other more complex issues such as intellectual property issues, virtual asset regulation, taxes, gambling and lottery laws, and issues regarding behavioral regulation in the metaverse which are still a big question mark. Given that this new world will target 3 major activities such as trade, entertainment and education, of course there must be clear regulations and laws so as not to cause unwanted things. In addition, there are other important things that must be considered, namely the regulation of the use of supporting tools to enter this virtual world, such as VR and AR devices. Who can use this tool, whether small children can also use this tool or regulations to enter the metaverse world, is there an age limit, or all ages can enter the metaverse. It is things like this that challenge the metaverse as a new world that must be considered for the builders of this world.

In addition, another serious thing that must be considered is the impact of this technology on society. According to Hovan George et al. (2021), the emergence of metaverse technology will have a great opportunity to change the fabric of society both in terms of lifestyle, socializing, to work. Furthermore, he said that in the present, people mostly interact in an app-based layer, where they interact with each other and content by apps that are downloaded to smartphones. The following layer which will be placed at the top of the world today is the metaverse. Many of these might seem familiar, or similar to others in raw technological form. From this fact is the beginning of how the metaverse changes our social system. Hovan George added that under the metaverse technology, individuals will be connected to the digital world more so for consuming entertainment or playing

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a video game. Digital currency is going to be more reliable, akin to hard currency in everyday life. Furthermore, people will be linked to other borderless, whether in the aspects of society, culture, or economy. This will inadvertently change the social reality that occurs in society. As if the real life of reality will gradually decrease because humans prefer to be in the metaverse world.

However, the good news is that social identity, which is often a conflict in the reality of social life, will be reduced with this technology. Problems regarding social identity, especially in a society that has a multicultural form, will be very easy to find. For example, the issue of racial and religious conflicts in Madura and Lampung (Indonesia), inter-ethnic conflicts in Kalimantan (Indonesia), communal conflicts about religion and caste in India, racial or skin color conflicts in America, and others are some of the conflicts that occur often happens in our social reality. However, in this metaverse technology, it provides fresh air to reduce the number of social identity conflicts that occur in society. As described by Hovan George et al. (2021) who say that the metaverse is theoretically, an open world where one's age, race, sex, or religion does not matter. In large part because one is able to hide their identity behind an avatar.

In addition, Bilton (in Hovan George et al., 2021) also describes other changes that will occur in social life related to the entry of this metaverse technology, namely where individuals can trade, cooperate, create assets, invest in virtual real property, personalize their world, exchange identities, and are able to achieve much, and they just need internet access, a smartphone, as well as a Virtual Reality headset. Hovan George et al. added that numerous real-world events such as music concerts, corporate meetings, types of auctions, campaigns, fundraisers, as well as even marriages have begun to take place in the virtual world as well. The metaverse is going to change this, as important activities will happen in a virtual world, in which a relation to reality is fragile.

This is a very serious impact on human life because this technology has the potential to cause the fragility of real life, especially in direct socialization between human beings. In addition, this metaverse technology also has the potential to cause an unhealthy lifestyle which will be prone to obesity or eye disease. According to Raqiel (2022) in her article published in *Kompasiana.com*, said that the most real threat from metaverse technology is the tendency to make people lazy to move and spend more time in the metaverse world.

In addition, other health threats such as obesity also need to be watched out for. With infrequent movement coupled with eating foods that are high in calories, it will be easy for humans to experience obesity. Besides obesity, another serious thing is the threat of visual impairment. Using a tool like VR to go into the metaverse world, especially for a long period of time will affect eye health. Like staring at a computer screen continuously will certainly have an effect on our eyes. This is a serious impact that must be considered and should be wary of about this technology. Although the impact is real, the existence of this technology certainly cannot be dammed. Like it or not, this technology will continue to develop and affect society.

C.   Metaverse in Future

The existence of this technology is reminiscent of fictional films that have been watched in the past which show how future technology will affect human social life and now it is not just fiction. This is often experienced by anyone, starting from small things like not being able to be far from a smartphone, even now some people say that they cannot live without an internet connection. This proves that humans are starting to experience dependence on technology and form a new culture in human life. Moreover, later if this metaverse technology develops, in the future all possibilities can be carried out in the metaverse and have the potential to create a new culture for humans.

This situation in sciences that study society such as sociology is called the theory of technological determinism. According to Hauer (2017) the theory of technological determinism explains how changes in the way of communication will shape ways of thinking, behaving, and moving towards the next technological century in human life. Basically, the Theory of Technology Determinism explains that communication technology can change human culture.

The most obvious impact that can be seen today is how the cultural patterns of human interaction have changed, tending to the digital world. This can be seen in today's young generation, for example when they gather together. In the past, technology such as social media was not very developed, human interaction and communication were very close and intimate. They get together and interact directly with each other. But now, this phenomenon can be seen from our younger generation.

Moreover, when a technology like the metaverse is really widely applied, technological determinism will really occur. Social changes such as communicating in real life can be very small. They are more comfortable gathering and interacting in the metaverse virtual world. From here can be see how technological determination works, where the presence of the metaverse will certainly have a big impact on human culture and be able to form a new culture for humans.

In addition, in the future, the existence of this technology is also expected to become a new digital-based economic power. The existence of currency, economy and trade will also be digital based. In general, sociologically there are indications of the practice of Marxism in the metaverse technology. In a Marxist view, it is certainly no stranger to hearing the term capitalist. Everything related to the economy and domination must have something to do with this one term. In a capitalist economic view, it is inseparable from the power of technological domination. This can be seen from how the rise of capitalism emerged when the industrial revolution began. Capitalism at that time did use technology as a capital tool, where they used manufacturing machines to create effectiveness and efficiency in producing goods, so that large profits could be obtained. In this case, one can see how the capitalist system works on the domination of technology. The greater the mastery (domination) of technology (production tools), the greater the profit.

The same thing happened when the metaverse technology was created in future. The process of realizing the metaverse

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carried out by Facebook and its allies is actually the implementation of the practice of digital capitalism. Digital capitalism is simply a continuation of capitalism which focuses on its production process on selling digital commodities while maintaining the basic dynamics of capitalism (Rivera, 2020). The practice of digital capitalism is mostly carried out because it does not require the arrangement of many human resources in the organization. Digital capitalism only requires the development of knowledge and creativity in assembling innovations (Rivera, 2020). However, digital commodities developed by Facebook, such as advertisements, encourage the practice of digital capitalism to manipulate consumers.

So it is clear that why Facebook is so passionate about building a metaverse that it is willing to change its name to meta. This is not without purpose, of course, other than because the idea of the metaverse is really cool, but partly because it will turn into a new, unlimited field to make as much money as possible in future.

When billions of humans have filled the metaverse world, those people, whether they like it or not, will become targets to be led into consumptive beings. They will be willing to spend money to carry out their economic activities there. Indeed, the metaverse can be an opportunity for people who are less fortunate in the real world. However, it is undeniable that one of the interests behind the metaverse world is the interest of capitalism whose goal is to make a lot of profit.

This idea may lead to exploitation by capitalist companies at the very top level. Who is the most profitable? Of course, those who develop the metaverse world such as Facebook and other companies are also developing the same thing. This is what I meant earlier as dominating the means of production (technology) that will benefit. While the users only get a small part of the benefits. Even if they get large economic benefits, of course the dominators participate in getting even bigger profits.

III. CONCLUSION

Metaverse technology is a new technology that is still in process being designed by several major world companies such as Meta, Apple, Microsoft and so on. In the future, Metaverse will focus its technology on several sectors such as working, studying, trading, and enjoying entertainment. Although still in the design stage, the impact of this new technology seems to be obvious. Humans will start to depend on technology, even technology like this metaverse will create a new culture for human social life. Starting from work culture to daily lifestyle will change just like the fictional films that have watched on television in the past. Humans will do online activities from their respective homes, work, shop, go to school to enjoy entertainment. On the positive side, humans will be greatly helped by this technology, but on the other hand it is not impossible that social reality will slowly disappear. Humans are happier and cooler to be in the metaverse world. In sociology, the existence of this metaverse of technology will try to change the culture of society, such as the culture of interacting, working to seek entertainment. The connection to social reality will be lost. Likewise, the profit opportunities from the metaverse, the more wisely use this technology, the more benefits the user

can get because it makes their lives easier, but for those who use it badly, then of course there will be many losses. What is certain is that with the development of this technology, social reality is not impossible to disappear in the future.

This has also been carried out by a study by Idarta et al (2022) entitled 'Metaverse: Challenges and Opportunities in Education'. In this national study, the results show that the acceleration of metaverse technology in the world of education has been seen with the application of digital learning media based on augmented reality and virtual reality. Metaverse is believed to be able to overcome the limitations that exist in the world of education, such as limited class capacity due to the pandemic, limited distance and time to enter class, and others. With the concept of a virtual world, online learning can be done more interactively without losing the student learning experience. The method of learning anywhere and anytime is an interesting concept that is favored by many generations of Z today. Furthermore, they also said that the Metaverse is predicted to enter many areas of human life in the next 10-15 years. In addition, in the field of international studies, the impact of this technology is also discussed. The study from Dwivedi *et al* (2022) entitled 'Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy' outlines the socio-economic and other impacts of this technology. They say that the socio-economic impact of the metaverse will shape the way do business, interact with brands and other people, and develop shared experiences that are likely to be transformational as the dividing line between physical and digital tends to be somewhat blurred from current perceptions. In addition, social impacts such as the human ability to be able to distinguish between the virtual world and the real world are also feared by some experts. When this technology enters, it is likely that our consciousness will also be biased and will be confused because the virtual world seems to be made real as well as the real world.

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