

## THE DIFFUSION OF SHOPPING INNOVATION IN METAVERSE: OPPORTUNITIES AND CHALLENGES IN INDONESIA

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**Abstract:** In the future, the development of the artificial world (Metaverse) is expected to affect how consumers spend and will affect geopolitical, socioeconomic, and education. The Research wants to describe how these three things become challenges and opportunities for companies and governments in developing business in the second life metaverse by looking at the diffusion of innovation theory

**Keywords:** Diffusion Innovation, Shopping, Metaverse, Geopolitical, Socioeconomic, Education, Second Life, Government, Company

**Abstrak:** Di masa depan, perkembangan dunia buatan (Metaverse) diperkirakan akan mempengaruhi cara konsumen berbelanja dan akan mempengaruhi geopolitik, sosial ekonomi, dan pendidikan. Penelitian ingin mendeskripsikan bagaimana ketiga hal tersebut menjadi tantangan dan peluang bagi perusahaan dan pemerintah dalam mengembangkan bisnis di second life metaverse dengan melihat teori difusi inovasi.

**Kata Kunci:** Inovasi Difusi, Belanja, Metaverse, Geopolitik, Sosial Ekonomi, Pendidikan, Kehidupan Kedua, Pemerintah, Perusahaan

## INTRODUCTION

The world has changed so fast since the COVID-19 pandemic hit. Almost all countries in the world have been badly affected by Covid-19. Even the latest data states that more than 551 million cases of covid-19 and more than 6 million people have died from the virus (WHO, 2022). Changes in the world due to Covid-19 also have an impact on accelerating the use of technology and growing according to human needs.

Activities are caused by technological developments that can create things considered impossible can also be realized because of the emergence of digital innovations. The impact of these innovations is, of course, a change in terms of economic, social and psychological aspects of humans themselves (Bowden & Bowden, 2022). One of the creations of the latest technology, as it is currently being discussed worldwide, is Metaverse. The virtual world or Metaverse is a replica of real life created for people to socialize and do activities like everyday life. Furthermore, the Metaverse in the digital world is an extension of new technology that becomes a second life for human life (Park & Kim, 2022). The emergence of this metaverse innovation after the boom of Facebook changed its name to meta and then seriously built the Metaverse (Tan et al., 2022) and other digital companies such as Microsoft. Apple has a big project developing this second life (Fernandez & Hui, 2022).

With this severe effort, countries worldwide are also competing to create their respective country versions of the Metaverse. South Korea, Saudi Arabia, the UK, the USA, Singapore and even Indonesia will participate in responding and will develop the Metaverse project in collaboration with digital companies. Indonesia and the project will be launched at the 2022 G20 Indonesia Presidency (Rizkinaswara, 2022). This seriousness will be a challenge and opportunity for Indonesia to create a metaverse. Moreover, the Metaverse Indonesia platform will later present big cities in Indonesia with governance that carries the theme of local wisdom (Wicaksono, 2022). This will create new business opportunities for companies to sell their products and services on the Metaverse Indonesia platform. It will lead to changes in consumer behavior as a whole, from how they shop, engage in business and try new things related to interacting visually.

Therefore, in the future, the development of the artificial world (Metaverse) is expected to affect how consumers spend and will affect geopolitical, socioeconomic, and education. The author wants to describe how these three things become challenges and opportunities for

companies and governments in developing business in the second life metaverse by looking at the diffusion of innovation theory.

The 1992 book "Snow Crash" by Neil Stevenson contains the first use of the phrase "metaverse." In this book, characters may communicate with one another by using avatars as a metaphor for the actual world, a three-dimensional (3D) virtual realm. The founding of the online virtual environment Second Life by Philip Rosedale, Linden Lab, and his crew in 2003 has a lasting impression on the development of the Metaverse. Metaverse is booming in 2021, starting with Microsoft releasing a platform designed for virtual collaboration across multiple devices. That same year, Facebook changed the parent company's name to Meta and CEO Mark Zuckerberg planned that the focus of development would be on the Metaverse technology. Metaverse comes from a compound word transcendence meta and universe and refers to a three-dimensional virtual world in which avatars are involved in political, economic, social, and cultural activities. + VR), cryptocurrencies and decentralized finance (DeFi), laying the groundwork for an immersive digital world where people can interact and share experiences, create, buy, and sell digital assets with people around or outside their reach. Metaverse is also termed a new paradigm that is to shape the next ubiquitous computing paradigm that has the potential to change education (online), business, remote work, and entertainment (Rosenberg, 2022)

## **METHOD**

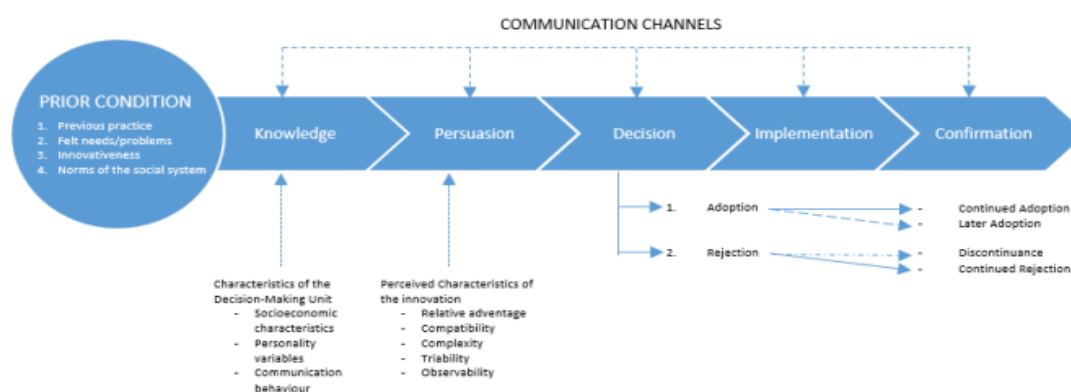
In line with these developments, the Metaverse develops according to the diffusion of innovation theory. The concept of diffusion of innovation is a process in which a method of spreading absorption of new ideas or things to change a society that occurs continuously from one place to another, from one period to the next, from particular field to field. Other parts of the social system (Rogers et al., 1940) With the diffusion of these innovations, product characteristics will be formed and translated into perceptions of relative advantage, compatibility, complexity, trialability and ease of observation (observability).

## **RESULTS**

In the research on "Modern Prototypes of the Metaverse," the formation and development of the Metaverse are related to technological developments and the Covid-19 pandemic. During this pandemic occurring from 2019 until now, the shift of people to shopping and browsing the virtual world has increased significantly (Mystakidis, 2022) Well-known brands such as

Warner Bros., Gucci, Nike, Coca-Cola, Pepsi, and Porsche have shifted their business to the digital world using metaverse provider platforms. For example, Gucci has designed a product that avatar users can buy in an online game called Roblox. Nike has launched an NFT called the sneakerhead. According to Erkul, a brand must solve every human problem and develop it into a need, and the purchase will occur (Fernandez & Hui, 2022).

Furthermore (Shin, 2022) in his research, found that Metaverse can become a Public Relations (PR) tool for today's brands and can build innovative and attractive brand perceptions by applying NFT and capabilities in social media. But the problem is that not everyone understands how to enter the second life. The diffusion of innovation that occurs makes humans or consumers unprepared to do shopping on the metaverse platform (Christie, 2020). In the theory of diffusion of creation described by Roger 2003 Figure 1, the adoption process of the distribution of human innovations will carry out various stages of accepting and rejecting.



**Picture 1** (Rogers et al., 1940): Diffusion of Innovation at the individual level

The decision about the innovation offered by Roger is a stage that governments and companies must go through to attract consumers to use the Metaverse or platform. At the knowledge stage, a person does not yet have information about the innovation being carried out, and this is because an individual will tend to avoid information that contradicts or does not offend the interests of the individual. When innovating the metaverse eye, individuals who do not know will grow to avoid and look for other ways that follow what is considered easy. In the persuasion stage, individuals are interested in the innovation and actively seek information about the invention. The second stage occurs in the level of thinking of potential users. The innovation in question is related to the characteristics of the invention itself, for example,

advantages, innovation, level of compatibility, and complexity and can be tried and seen. In the decision-making stage, individuals take the innovation concept, weigh the advantages and disadvantages of using it, and decide whether to adopt or reject it. In the implementation phase, individuals for different innovations depend on the situation. During this stage, the individual determines the invention's usefulness and can seek more information about it. In the final confirmation stage, individuals will seek to justify their decisions. Someone can change later the decision that had previously refused to accept the innovation after conducting an evaluation. The theory offered by Roger regarding the diffusion of innovations further describes how the opportunities and challenges of individuals (consumers) in making a spending shift from a geopolitical, socioeconomic and education perspective.

### **Geopolitical**

Metaverse has a considerable risk in the future, not only the possibility of privacy violations that are common in social activities, especially interactions that are carried out in real-time, the high level of freedom in the Metaverse makes users more dangerous than using online games. In addition, the metaverse administrator cannot predict if a new more violent virtual crime occurs because the characteristics or avatars do not show the user's reality but a view that differs from the appearance and worldview (Kye et al., 2021)The policy is a significant issue for the government to pay attention to in ensuring the Metaverse can run well. In Indonesia, those who build their own Metaverse will face the Metaverse made by Facebook (meta), Microsoft and other platforms. Each owner will, of course, have different rules. Will these rules make it easier for companies to sell there and make it easier for consumers to shop, or the opposite happens, and what are the facilities provided by each metaverse platform (Bibri & Allam, 2022).

Furthermore, policies are necessary, but if interested parties abuse them, it will be difficult for metaverses to grow in a nation. Here is where government should effectively play its crucial role. The Metaverse is dedicated to democratizing access to essential products, services, and experiences while allowing users to access them from the convenience of their own homes (JP Morgan, 2022). Abishur Prakash, a geopolitical futurist, expressed the opinion that when technology triggers polarization among governments and large organizations and forces global institutions to reconsider the basis of cooperation, the Metaverse is likely to become embroiled in geopolitical conflicts in the future (Lucas et al., 2013). The expected trend is that the government will soon act to create a legal framework that covers everything in the

Metaverse, to regulate economic activity and criminal acts as well as those related to politics (Fernandez & Hui, 2022). And it is possible if the government in the future uses and establishes embassies and government offices in the Metaverse to reduce congestion when administering offline administration while reducing miscommunication of online administrative processes that are not carried out directly. It is likened to all government affairs will also try in the life version virtual (Cortés Rodríguez et al., 2022). As for the digital currency, it is predicted that it may move very slowly because if cryptocurrencies are used in real life, the money of a country will fall or be of low value, and digital currency will increase rapidly (Liu et al., 2022). However, the Indonesian government can take advantage of this opportunity to reduce its dependence on cash itself. With digital money's decentralization, transparency and accountability are very good (Lv et al., 2022). This will eliminate transaction crimes in certain banks or organizations. The government policy in Indonesia regarding Metaverse and NFT still has no regulations and taxes for cryptocurrencies. In this study, it can be concluded that in the future, there will be differentiation or grouping in the socioeconomics of the community. This will occur because of the formation of clubs between metaverse users and clubs from each owner of NFT (Liu et al., 2022).

Therefore, in the future, the Indonesian government must ensure particular policies and have a team within the government to regulate trade and the development of the Metaverse. This will be an opportunity for the Indonesian government to realize the demographic bonus in 2045. The number of young people will affect the movement and way of shopping (Angelini et al., 2022). Generations X, Y and Z have the character of liking challenges and new things, plus the use of the internet in Indonesia is increasing. It is dominated by generations X, Y and Z. Of course, and this will make the metaverse opportunity in Indonesia develop faster compared to other countries, which tend to have many baby boomers.

### **Socioeconomic**

Social contact was one of the human life patterns that changed due to the COVID-19 pandemic. Many regulations were put in place to restrict exchange and movement. This calls for modifying how people interact with one another while utilizing the Metaverse (Lau Christensen, n.d.). Users can still interact even amid a pandemic because of the advantages the Metaverse provides, like a notion created for the virtual interaction of two human beings. Hardware, networking, computers, virtual platforms, interchange tools and standards,

payments, metaverse services, content and assets, user behaviors, and Metaverse are the eight key building blocks of the Metaverse (Ball, 2021). Implementing the metaverse application for socioeconomic measurement through technology is considerably more challenging, and it is not visible in the data. Prediction is difficult without a thorough understanding of the whole range of the technological Metaverse being utilized and the amount of acceptance and innovation that it entails (Fan et al., 2021). Extending and closing a link between entities is essential due to the diversity of worldviews in the Metaverse. Simply connecting things is not sufficient. A necessary problem in content enrichment is assuming knowledge from the data given (Fan et al., 2021).

Metaverse activities are not just interacting like social media; users can transact and own assets in the virtual world. Assets owned by users are certified, so it can be said that transactions using cryptocurrencies are more profitable. Users buy packages using cryptocurrency tokens (MANA) with fluctuating value and transactions carried out through the Ethereum blockchain process (Bowden & Bowden, 2022). This convenience will attract individuals to make transactions that make it easier for them and not too complicated. This can be seen and found using the Metaverse. For example, you no longer have to go to a notary when you want to buy and sell land. Just make a transaction using the blockchain system, which will be an acknowledgment of land ownership, or simply by using your fingerprint, you can already do shopping transactions for products that are in the Metaverse and are realized in real terms (Ryskeldiev et al., 2018). This will shape individuals or consumers to become tech-savvy and make them dependent because there is a meeting between wants and needs, which have been separated in Maslow's theory, but Metaverse into one and will become a force in moving transactions in this second life (Guitton, 2022).

With this incident, the future challenges in Indonesia will form a pattern where there is a high gap between people who shop through the Metaverse and those who do not. Their knowledge tends to develop compared to individuals who are still traditional transactions, which will hinder the development of individuals in remote areas and cities (Khan et al., 2022). This will make them in the innovation diffusion theory remain at the knowledge stage. The future challenge is that the internet is not evenly distributed in Indonesia, so it will make the distance between urban and rural people higher.

## **Educational**

The world of education has developed since the outbreak of a pandemic. The teaching-learning process that switches from offline to online is the initial stage of people adapting more closely to the digital world (Kye et al., 2021). The online education process is like a normal school. Although the teaching and learning process is less efficient, the interaction between teachers and students still performs well. The transition period in the world of education brings both positive and negative impacts, especially for ordinary people; the lack of socialization for new users often causes miscommunication problems when carrying out virtual activities (Lee & Hwang, 2022). A virtual world that is constantly generated by networked computers where users meet and interact with each other in a shared space (Girvan, 2018). Limitations imposed by the lockdown policy and the isolation period, Metaverse can result in a high level of socialization in learning (Jin et al., 2022)

With the development of the Metaverse, it will decentralize work remotely (Wiederhold, 2022). Individuals who do not understand the technological Metaverse well will tend to avoid the old and comfortable patterns. This will not happen to individuals who already understand technology well. They tend to be challenged to use new technology (Hirsch, 2022). Therefore, there needs to be socialization if the Indonesian government is serious about implementing this second life by creating a particular department and ensuring a good transition. Even though there will be many rejections in the future, if accompanied by a good understanding and immersion in geopolitical and socioeconomic conditions, this educational stage will be overcome. It will make Indonesia a new axis of metaverse consumers.

## **CONCLUSION**

The presence of the Metaverse has surprised the digital world, with various facilities and conveniences for socializing, interacting and transacting digital assets. Metaverse impacts regulators who will face many challenges in keeping up with innovations in the new digital space. The real world of politics and economics will play a key role in shaping the direction of the Metaverse. If you focus on the Metaverse, it is expected to bring many positive impacts. When you already have legal and security regulations to avoid digital crime, those who make good use of it will be very profitable compared to tangible assets. Likewise, suppose the government takes advantage of this opportunity. In that case, it will support significant country developments that do not exceed usage limits. The negative impact that is very influential is that metaverse users will act as individualists, form clubs based on asset ownership, and enjoy



certain things while doing activities in the virtual world and can invite crime due to competition in showing "what's up with the user" not "what the user is." For the use of Metaverse at the age of children to teenagers, assistance from parents or teachers and people around them is needed. Indonesia will be the central axis of the target for metaverse platform developers. Besides a demographic bonus, Indonesian people have a higher level of desire than need because there are still many people from the lower middle class.

Therefore, it is necessary to have a special team or special department that will regulate, implement and ensure the development of the Metaverse, especially since this buying and selling transaction runs according to the government's wishes and generates profits for Indonesia. This study limits the conceptual development of the Metaverse from diffusion theory based on previous research and observations on the development of the Metaverse through credible media and discussions with technology experts. About Indonesian conditions. Therefore, future research is expected to see further how the influence and impact of the Metaverse on consumers and companies in making business shifts in the Metaverse.

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