International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 09 September 2024
DOI: 10.47191/ijcsrr/V7-i9-62, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

Exploratory Study of Metaverse in Business in Indonesia Using Scenario Planning Approach (Metaverse Case Study in Digital Business & Technology Division PT Telkom Indonesia)

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ABSTRACT: The Metaverse, as the next step after the internet (Web1) and Social Media (Web2), gained attention after Facebook rebranded to Meta in 2021, signaling a focus on its development. While still in its early stages, with limited business applications beyond marketing, this research explores potential metaverse scenarios in Indonesia through PT Telkom's Digital Business & Technology Division. Using the TAIDA method and a qualitative approach with primary interviews and secondary data, the study highlights Indonesia's strong potential for metaverse growth, driven by internet adoption, VR/AR technology, cryptocurrency, and government support. Key uncertainties include low adoption, early-stage development, and unclear regulations. Four business scenarios are analyzed, focusing on promotion inefficiency, digital gaming interest, cybersecurity concerns, and potential platform discontinuation. Business scenarios encompass a booming metaverse, metaverse as a game, metaverse as a virtual world threat, and social media dominance. Scenario 1 analysis reveals PT Telkom's focus on developing metaverse with risks related to promotional inefficiency. Scenario 2 involves developing metaverse's digital game with the risk of low public interest. Scenario 3 emphasizes cybersecurity with risks related to societal disinterest. Scenario 4 envisions discontinuing metaverse with risks tied to customer misunderstanding. The primary objectives target awareness, cybersecurity, and customer understanding while ensuring platform reliability and regulatory guidance.

KEYWORDS: Metaverse, Scenario Planning, TAIDA

INTRODUCTION

The term "metaverse" gained prominence in 2021 when Mark Zuckerberg rebranded Facebook as "Meta," signaling a shift toward developing virtual platforms like Horizon World (BBC News Indonesia, 2021). The metaverse, an interconnected network of 3D virtual worlds powered by VR and AR, allows users to interact via avatars (Hollensen et al., 2022). Despite initial excitement, Meta's metaverse faced low adoption and technical challenges, leading to a significant stock decline and investor skepticism. In Indonesia, metaverse initiatives like RANSverse, Nusameta, and Metanesia have emerged, However, according to katadata.co.id development hinges on digital infrastructure and 5G expansion. Scenario planning for PT Telkom's Digital Business & Technology Division is crucial for exploring future metaverse opportunities amidst these uncertainties.

Telkom, through its DBT division, is developing the metaverse platform "metaNesia" as part of its innovation strategy focused on government programs, digital business development, and priority technology platforms. DBT also explores emerging technologies like the metaverse for future business needs. This research focuses on the development of the metaverse in Indonesia, using metaNesia as a case study. Given the metaverse's developmental stage, with high uncertainty but significant potential, the study employs scenario planning. Since invest in new technology for telco operator hinder big risks and uncertainties, need to prepare its strategy (Nugraha & Tricahyono, 2022). The goals are to identify the factors driving metaverse development and business transformation and design future business scenarios for Indonesia using PT Telkom's metaverse platform.

METHODOLOGY

This study is classified as descriptive research, aiming to determine and describe the value of each variable independently without comparing them to others (Jaya, 2020). Following the interpretivism paradigm, it views reality as socially constructed, focusing on participants' understanding of events (Solechan & Putra, 2022). The research uses an inductive approach, starting from field data, analyzing it, and then connecting findings with relevant theories to draw conclusions (Sugiyono, 2013). The analysis focuses

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on PT Telkom's DBT Division, using in-depth interviews with key subjects. The study is conducted in a natural setting and uses a crosssectional timeframe, collecting and analyzing data within a specific period, with minimal researcher intervention (Indrawati, 2015). In this study, operational variables were obtained through in-depth interviews using tools such as recording devices, question lists, and documentation. Scenario analysis followed the TAIDA approach, focusing on (1) driving forces analysis (via STEEP), (2) trend analysis, and (3) organizational strength analysis. This research will collect qualitative data using primary and secondary data sources and then test the credibility of the data, one of which is the triangulation technique, which is a data collection technique that combines various data collection techniques and various data sources (Sugiyono, 2010). Adopting data analysis techniques that adopt Miles & Huberman (2014), which states that analysis consists of three concurrent activity streams, namely data condensation, data presentation and conclusion/verification.

RESULT

From the summary of priority trends, an analysis was conducted using a causal-loop diagram to illustrate the strongest interconnections among the identified trends and the dependencies between them. Based on the causal-loop diagram, two key driving forces accelerating the development of the metaverse for business in Indonesia are identified in the areas of technology and socioeconomics. Technology is undergoing significant evolution, with the metaverse being a central focus of cross-sectoral transformation. Technology enabler (VR, AR, AI, blockchain) affect metaverse development. AR/VR would be main device for metaverse. Blockchain potentially can be used as financial system or for efficient supply chain (Alamsyah, Widiyanesti, Wulansari et al., 2023). Collaboration between the government, tech companies, and society plays a crucial role in adopting technology to develop the metaverse, which provides tangible benefits to Indonesian society. On the socio-economic side, shifts in societal needs and values, particularly among the younger generation, are major drivers of growth in the digital economy. Indonesia's demographic bonus, with a large youth population, creates significant potential for the digital market. These two driving forces—metaverse technological development and market acceptance of the metaverse—are key uncertainties in the scenario planning for the metaverse in Indonesia over the next 10 years. From these uncertainties, four potential scenarios can be identified.

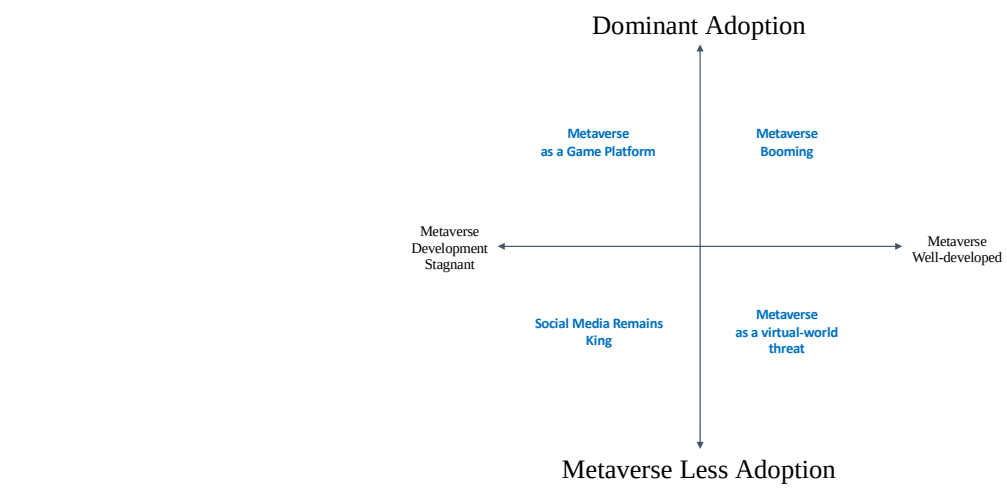

Figure 1. Summary of four future metaverse scenarios for businesses in Indonesia

The scenarios outlined in the narrative illustrate the potential developments of the metaverse in Indonesia, based on identified uncertainties:

Scenario 1: Metaverse Booming, the metaverse is experiencing a significant boom with high adoption rates and meeting societal expectations by offering substantial value. It has expanded beyond gaming into sectors like productivity, manufacturing, and education, driven by strong collaboration across industries and healthy digital investment. Supportive regulations regarding privacy, security, and finance have enabled aggressive innovation and investment, creating a new reality that integrates the virtual and physical worlds, resulting in a broader digital economy through digital and cryptocurrency transactions.

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Scenario 2: Metaverse as a Game Platform, metaverse is perceived mainly as a gaming platform, with development stagnating in the 3D game sector despite technological advances in AR, VR, and blockchain. Lack of collaboration between major tech players and increased focus on technologies outside of the metaverse, such as AI and big data, has hindered its growth. Investment remains limited, and regulatory frameworks are inconsistent, keeping Metanesia from achieving its full potential, though it still holds potential in immersive gaming experiences.

Scenario 3: Metaverse as a Virtual World Threat, despite technological advancements, metaverse is viewed as a virtual threat due to its failure to meet societal expectations and provide tangible value. Opportunistic investments and inadequate regulatory frameworks exacerbate cybersecurity threats, privacy concerns, and negative social impacts, leading to a lack of public trust. The metaverse has spread across various industries, but lack of interoperability and speculative investments create uncertainty about its long-term benefits.

Scenario 4: Social Media Remains King (dominant), while technological advancements continue, the metaverse has failed to surpass the dominance of social media, which remains the leading platform for digital interaction. Metaverse's inability to meet societal needs and deliver significant value, coupled with detrimental digital investments and inadequate regulations, has cemented social media's status as the primary digital platform. To compete, Metaverse must address societal needs, improve its value proposition, and resolve regulatory and investment challenges.

These scenarios offer valuable insights into the potential future of the metaverse in Indonesia, highlighting the importance of technological advancement, market acceptance, and regulatory support in shaping its trajectory.

CONCLUSION

The development of the metaverse is currently in its early stages but holds significant potential for driving business transformation over the next 10 years. Based on the research, six key driving factors are identified that will influence the growth of the metaverse in Indonesia: technological advancements (AI, VR, AR, blockchain), socio-economic readiness (technology adoption, cybercrime risks, digital transactions), investment support (technology collaboration), environmental impact (eco-friendly technologies), regulatory preparedness (privacy, security), and organizational readiness (digital transformation). Critical uncertainties include the ongoing development of the metaverse, the high cost of technology adoption, and the need for supportive regulations. The research outlines four potential future business scenarios for the metaverse in Indonesia: 1) "Metaverse Booming," where widespread adoption occurs across multiple sectors, 2) "Metaverse as a Game Platform," with a limited focus on entertainment, 3) "Metaverse as a Virtual World Threat," due to weak regulations and security, and 4) "Social Media Remains King (dominant)," where the metaverse fails to surpass social media. The recommended strategies include strengthening digital capabilities, fostering technology collaboration, enhancing cybersecurity, and adjusting business models and investments, focusing on the most likely development scenarios for the metaverse. These strategies aim to maximize the metaverse's potential to create new economic value while mitigating potential risks.

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Cite this Article: Tantan Santika, Siska Noviaristanti (2024).Exploratory Study of Metaverse in Business in Indonesia Using Scenario Planning Approach (Metaverse Case Study in Digital Business & Technology Division PT Telkom Indonesia). International Journal of Current Science Research and Review, 7(9), 7429-7432, DOI: https://doi.org/10.47191/ijcsrr/V7-i9-62