

# Value creation in the metaverse age: a thematic analysis of press releases

Value creation  
in the  
metaverse age

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Giulio Ferrigno  
*Department of Economics and Business Management Sciences,  
Catholic University of the Sacred Heart, Milan, Italy and  
Department L'EMBEDS, Sant'Anna School of Advanced Studies, Pisa, Italy*

Nadia Di Paola and Kunle Francis Oguntegbe  
*Department of Economics, Management, Institutions,  
University of Naples Federico II, Napoli, Italy, and*

Sascha Kraus  
*Faculty of Economics and Management, Free University of Bozen-Bolzano,  
Bolzano, Italy and  
Department of Business Management, University of Johannesburg,  
Johannesburg, South Africa*

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## Abstract

**Purpose** – Since Zuckerberg's announcement to change Facebook's name to Meta Platforms Inc. on October 28, 2021, the concept of the metaverse has gained unprecedented popularity in the business world. Tech giants, SMEs and start-ups across various sectors are making substantial investments in metaverse-related technologies. Despite this, scholarly research in entrepreneurship and strategic management regarding the metaverse remains limited. This paper, grounded in value creation theory, aims to analyze how value is generated in the metaverse era.

**Design/methodology/approach** – This paper conducts a thematic analysis of 895 press releases published by LexisNexis between October 28, 2021, and October 28, 2022. The analysis identifies the primary emerging themes related to value creation in the metaverse age.

**Findings** – The thematic analysis reveals four significant emerging themes concerning value creation in the metaverse age: (1) factors enabling value creation, (2) digital resources contributing to value creation, (3) motives driving value creation and (4) practices of value creation.

**Originality/value** – This paper represents the inaugural attempt to analyze the metaverse through a value creation lens. Given the substantial investments and growing academic interest in the metaverse, understanding value creation in this context is a pressing concern. Additionally, this study provides valuable insights and suggests critical questions for future research on the metaverse.

**Keywords** Value creation, Metaverse, Thematic analysis

**Paper type** Research paper

## Introduction

In September 2023, Google yielded a substantial 167 million search results upon querying the term “metaverse.” This surge in references transpired twenty-three months subsequent to Mark Zuckerberg's presentation of “Meta” during the Connect Conference of 2021, held on



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October 28th. It is noteworthy that the concept of the metaverse has become firmly entrenched within the public discourse (Kraus *et al.*, 2022; Dwivedi *et al.*, 2023). This burgeoning interest in the metaverse is further amplified by significant corporate investments spanning diverse sectors, including but not limited to automotive (e.g. BMW Group and Hyundai), fashion (e.g. Gucci, Louis Vuitton, and Prada), entertainment (e.g. Warner Bros. and Pokémon Go) and education (e.g. Neoma Business School and Polimi). To elucidate, an aggregate of over \$120 billion was injected into the metaverse ecosystem in the year 2022 (McKinsey and Company, 2022).

Consequently, the metaverse has engendered keen scholarly attention, particularly within fields such as marketing (Barrera and Shah, 2023), retailing (Bourlakis *et al.*, 2009) and tourism (Buhalis *et al.*, 2023), primarily due to the utilization of virtual reality (VR) headsets within the fashion industry. However, in the domain of business and management, research pertaining to the metaverse remains in its nascent stages. Some scholars have construed the metaverse as an immersive virtual environment that interfaces with the tangible world through a medley of cutting-edge technologies, applications and a three-dimensional (3D) representation (Dwivedi *et al.*, 2022; Queiroz *et al.*, 2023). Conversely, others have probed the extent of innovation within Meta's business model evolution (Kraus *et al.*, 2022). Furthermore, certain academics have underscored the significance of both internal and external factors in value creation within the realm of augmented reality (AR) smart glasses (Ro *et al.*, 2018).

Notwithstanding the pioneering contributions of these studies, there remains a paucity of comprehensive insights into the mechanisms through which the metaverse engenders value. In this context, Papagiannidis *et al.* (2008) contend that "the metaverse is poised to furnish lucrative opportunities for an expanding cohort of individuals and organizations, hailing from both developed and developing nations" (p. 616). Furthermore, a recent report by McKinsey estimates the metaverse's value to ascend to \$5 trillion by the year 2030 (Elmasry *et al.*, 2022). Nevertheless, one of the principal quandaries confronting the metaverse is the art of value extraction from its expansive landscape (Queiroz *et al.*, 2023). Therefore, this article makes a partial contribution to this relatively uncharted research terrain by delving into the following inquiry: How is value generated in the era of the metaverse?

To address this research question, we have procured 895 press releases disseminated between October 28, 2021, and October 28, 2022. These press releases are conveniently accessible via LexisNexis, a preeminent web-based archive renowned for its comprehensive repository of news, legal and business sources within the realm of social sciences (Deacon, 2007). Subsequent to an initial screening of this voluminous data set, we have undertaken a thematic analysis to discern the principal emergent themes germane to value creation in the metaverse era. Specifically, we expound upon the salient concepts that have evolved through extracts from the press releases scrutinized during the course of our investigation. These concepts encompass (1) the catalysts for value creation, (2) the digital assets instrumental in value creation, (3) the impetuses underpinning value creation and (4) the practices entailed in value creation.

### **The metaverse age**

Following Facebook's rebranding as Meta on October 28, 2021, there has been a pronounced surge in attention and intrigue surrounding the metaverse concept. A multitude of social networks, media outlets, television channels, newspapers and periodicals have acknowledged the potential significance of the metaverse in the domains of commerce and administration.

The metaverse represents a parallel universe where numerous companies are making substantial investments in artificial intelligence (AI) technologies that underpin its four fundamental building blocks: content and experiences, platforms (e.g. game engines), infrastructure and hardware (comprising devices and networks) and enablers (including

payment mechanisms and security). It is plausible to presume that a significant portion of these investments is not limited to Meta (formerly Facebook) alone but also encompasses other prominent technology firms such as Microsoft and Qualcomm (CB Insights, 2022). Microsoft, for instance, is vigorously acquiring both start-ups and established entities to establish an internal gaming studio tasked with exclusive content development for Xbox. The company is also dedicating resources to tools for game creation and maintenance, spanning developer platforms to content moderation software. Beyond the realm of gaming, Microsoft is venturing into the digital twins' domain. In parallel, Qualcomm is leveraging its hardware expertise to target metaverse infrastructure, particularly technologies aimed at enhancing Internet speed and device reliability. The company is making significant investments in 5G infrastructure, poised to enhance the accessibility and quality of immersive experiences like AR and VR.

Extending beyond the information and communication technology (ICT) sector, numerous firms across diverse industries are actively contributing to metaverse applications and, consequently, value creation mechanisms. Established entities like Walt Disney are actively exploring metaverse-related opportunities, such as the development of immersive virtual theme park experiences. Similarly, automobile manufacturer BMW is venturing into the metaverse realm by conceptualizing interactive showrooms and virtual test drive experiences for prospective customers. Even the hospitality sector, exemplified by Marriott Bonvoy, is contemplating metaverse applications, envisioning the potential for virtual travel experiences and immersive hotel previews. Consequently, the metaverse presents a tangible business opportunity that will play a pivotal role in the future economic landscape. In 2021, venture capital and private-equity investments in the metaverse surged to \$13 billion. By mid-2022, investments in the metaverse space had more than doubled compared to the entirety of 2021, reaching a staggering \$120 billion. Projections indicate that by 2030, the metaverse's value could ascend to a colossal \$5 trillion (Elmasry *et al.*, 2022).

The metaverse may be construed as an immersive and interactive environment where individuals engage and interact virtually (Dwivedi *et al.*, 2022). Evolving literature has refined the initial definitions of the metaverse, emphasizing the possibilities for users to engage and participate in a three-dimensional environment, facilitated by augmented, virtual and extended reality technologies (Damar, 2021).

Various authors concur that the embryonic form of the metaverse existed within games and platforms like Second Life (Gent, 2022). While it might seem plausible to regard the metaverse as an improved version of Second Life (Kaplan and Haenlein, 2009b), recent studies argue to the contrary. Dwivedi *et al.* (2022), for example, have underscored distinctions between the metaverse and its precursors, citing heightened immersion, mobile device utilization and the availability of advanced security technologies, including blockchain. Furthermore, have contended that “the technologies behind the metaverse have witnessed significant advances and changes over the years (Kim, 2021). Today, users can achieve complete immersion by employing headsets, gloves, or entire bodysuits instead of merely peering at computer screens” (p. 1). In alignment with the aforementioned studies, we assert that the metaverse represents more than a mere rehashing of existing concepts (Ferrigno and Baroncelli, 2022), signifying the advent of a new era – the metaverse age. The pivotal query revolves around whether, given the novelty of the metaverse and the substantial corporate investments therein, these investments engender value or not. This inquiry holds particular interest as the metaverse remains predominantly a conceptual framework rather than a tangible application. Moreover, despite the burgeoning excitement and media attention directed toward the metaverse over the past year, Meta Platform Inc. recently announced plans to reduce its workforce by over 10%, underscoring its steadfast commitment to the metaverse amid a volatile advertising market and record-high inflation rates. Consequently, this article addresses the following research question: *How is value created in the metaverse age?*

*Value creation in the metaverse age*

As observed, the metaverse has become a focal point of extensive discussion and interest. It holds the potential to generate substantial new wealth, primarily through the involvement of major tech industry players, innovative start-ups and corporate initiatives (Elmasry *et al.*, 2022). Notably, it is also reshaping the landscape of competition for established businesses in an unprecedented manner (Dwivedi *et al.*, 2023). However, the literature on entrepreneurship and strategic management has yet to systematically address the central issues associated with this emerging phenomenon, and a comprehensive understanding of how value is generated within the metaverse remains lacking (Papagiannidis *et al.*, 2008; Queiroz *et al.*, 2023).

To grapple with this research question, it is crucial to establish a clear understanding of the concept of value creation. Pioneering and well-cited works on this topic have offered varying but complementary conceptualizations of value creation (Amit and Zott, 2001; Bowman and Ambrosini, 2000; Lepak *et al.*, 2007). Porter (1985), for instance, contended that novel value emerges when firms innovate by adopting fresh approaches, new technologies or unconventional raw materials. Bowman and Ambrosini (2000) introduced and distinguished two forms of value at the firm level: perceived use value and exchange value. Perceived use value is shaped by customer perceptions, and its monetary worth corresponds to the price customers are willing to pay based on their perceived utility of the product. In contrast, exchange value represents the sum paid by the buyer to the producer for the perceived use value and is realized only upon product sale (Åström *et al.*, 2022; Reuschl *et al.*, 2022). Lepak *et al.* (2007) further expanded upon this conceptual framework, exploring how the process of value creation may diverge depending on whether the value is generated by an individual, an organization or society at large. Lastly, Amit and Zott (2001) identified four sources (i.e. efficiency, complementarities, lock-in and novelty) of value creation in the realm of e-business.

In the context of the metaverse, Papagiannidis *et al.* (2008) posited that it “is likely to create lucrative opportunities for an increasing number of individuals and organizations from both the developed and the developing worlds.” (p. 616). However, none of the aforementioned foundational works has been extensively applied to comprehend value creation within this context. Notably, in the domain of AR smart glasses, Ro *et al.* (2018) argued for the importance of distinguishing between internal and external factors in value creation. Internal value creation factors primarily enhance the effectiveness of a firm’s employees, while external value creation factors are chiefly associated with the revenues a firm can accrue by offering AR smart glasses applications for consumer use or interactions with customers. Moreover, Kraus *et al.* (2022) approached value creation from the perspective of business model alterations. Despite these valuable insights, there remains a lack of consensus on the precise nature of value creation or the means by which it can be achieved. Understanding the mechanics of value creation within the metaverse carries substantial managerial significance (Elmasry *et al.*, 2022). Consequently, in this study, we have drawn upon prior works on value creation as guiding frameworks to interpret the emergent themes related to value creation in the metaverse (Amit and Zott, 2001; Bowman and Ambrosini, 2000; Lepak *et al.*, 2007; Porter, 1985).

**Research methodology***Data collection*

To investigate our research question, we undertook an extensive data collection process using the LexisNexis database. This choice was motivated by several compelling factors: First, LexisNexis is widely recognized as the foremost news archive in the realm of social sciences (Deacon, 2007). Its esteemed reputation positions it as an invaluable resource for aggregating a diverse and extensive data set from a multitude of publicly accessible documents (Adams *et al.*, 2009). Remarkably, this database encompasses an extensive repository comprising over 35,000 sources, encompassing news, legal and business domains

(Williams and Lee, 2009). Second, LexisNexis has earned acclaim for its utility in prior scholarly investigations focused on comprehending pertinent press releases and extracting vital insights related to emerging phenomena (e.g., Ferrigno and Cucino, 2021). This historical precedence attests to its suitability for our research. Third, numerous scholars have favorably utilized this database to conduct exploratory research on the subject of value creation (Sears and Hoetker, 2014). This resonance with the exploratory nature of our research further validates our choice of LexisNexis as a data source.

We searched the LexisNexis database in the “news” category, using the keywords “metaverse” and “value creat\*” as search criteria from October 28, 2021 (the day on which Facebook announced its name change to “Meta”) to October 28, 2022 (exactly one year after the company’s rebranding). In total, the search yielded a satisfactory panel of 1,681 press releases within a one-year timeframe. We further refined the sample by removing duplicates (140 items) as well as documents not written in the English language (28 items). Such preliminary restrictions yielded 1,513 unique English documents. Going forward, we focused on the “Computing and Information Technology” industry, and this restriction produced an output of 905 documents. Lastly, we further defined the object as business news to ensure that only news relating to business was captured, and this final filter resulted in 895 news items, which constitute our final sample. A flow diagram of the data collection process used for the thematic analysis is reported in Figure 1.

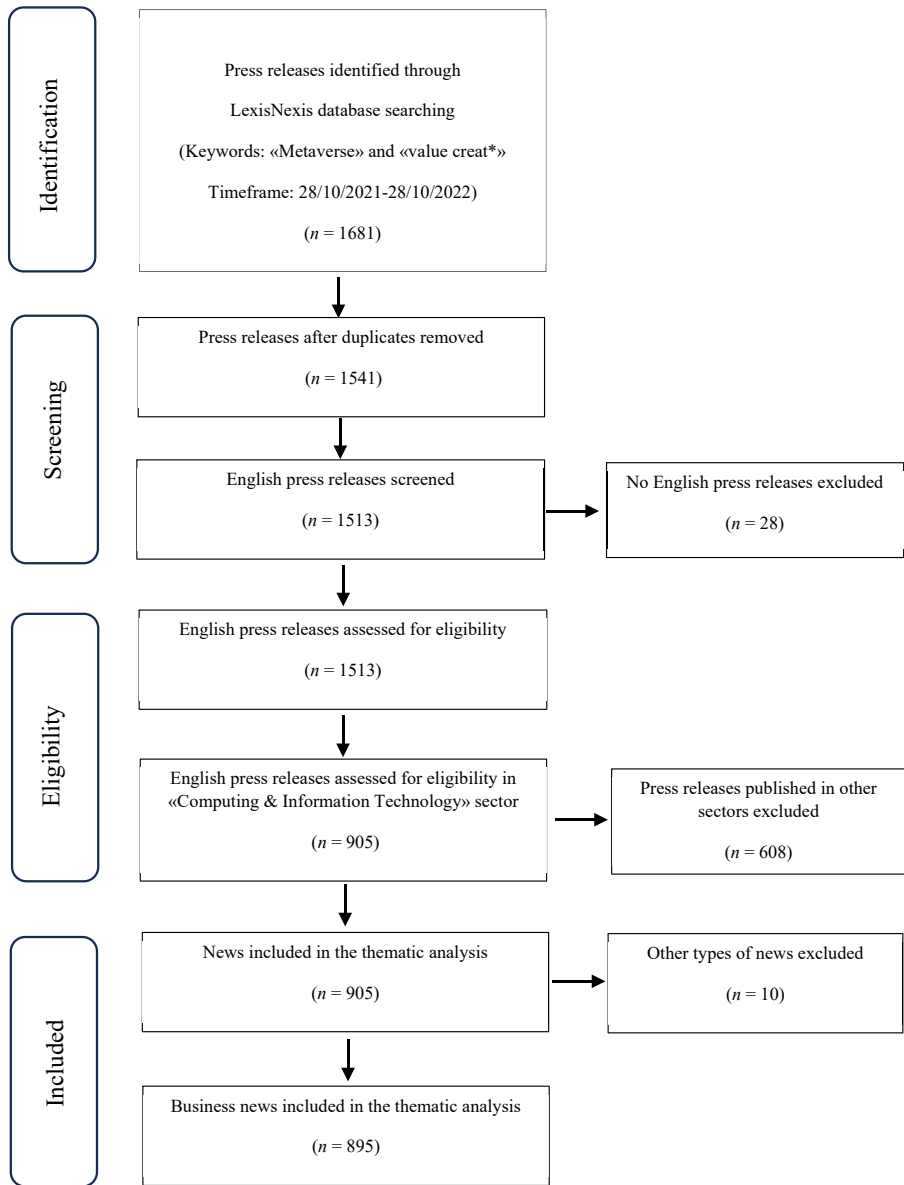
#### *Data analysis*

We employed an inductive approach (Gioia *et al.*, 2013) to conduct thematic analysis for understanding value creation in the metaverse. We chose this method for two primary reasons. First, thematic analysis facilitates the discovery of innovative research ideas, especially when prior knowledge is limited (Nowell *et al.*, 2017). Furthermore, thematic analysis has been successfully used in previous literature to examine value creation dynamics, such as analyzing customer value creation in digitalized financial services (Lahteenmaki *et al.*, 2022) and value co-creation in business ecosystems (Hassan *et al.*, 2022). Given these considerations, we opted for this method to explore value creation in the metaverse and address our research question using available qualitative data to identify key patterns (Chen *et al.*, 2021).

In line with this choice, three of the authors comprehensively reviewed the 895 press releases to gain an understanding of the content. Subsequently, we devised a protocol to cleanse the data set, removing numerical data not directly related to the metaverse and extraneous content unrelated to the metaverse context. This process did not reduce the number of business news articles we analyzed but was necessary to maintain the integrity of our findings. Following data cleansing, one author utilized NVivo 12 software for a thematic analysis, applying an inductive methodology (Oguntegebe *et al.*, 2022).

Analyzing the business news publishers’ locations revealed that a majority (53.33%) were based in the United States of America, with Canada, Australia, the United Kingdom and South Africa each accounting for 6.67%. Others were dispersed across Nigeria, Indonesia, the United Arab Emirates, India, Korea and Singapore (see also Appendix 1).

The thematic analysis followed the steps outlined in the literature (Braun and Clarke, 2006; Byrne, 2022; Hajek, 2023). Before generating first-order codes, we meticulously reviewed the contents of all 895 news releases multiple times to familiarize ourselves with the data and gain insights into the value creation process in the metaverse. We ensured that the emerging themes faithfully represented the data set’s original contents, without any manipulation by the researchers. Consistent with the inductive approach to qualitative data analysis, we established strong connections between data and theory (Gioia *et al.*, 2013). The coding categories were created after systematically evaluating the data, and these categories were



**Figure 1.**  
Flow diagram of data  
collection process used  
for the thematic  
analysis

**Source(s):** Author’s own elaboration

subsequently condensed in line with our research question and theoretical framework (Webster and Watson, 2002). We then progressed to the second phase, where we refined the codes while continually referring to our data set to facilitate the development of second-order themes. This involved ongoing data collection and evaluation, as well as consultation of relevant literature. By iterating between our data set and theoretical framework, we refined the first-order codes until we achieved data saturation (Oguntegebe et al., 2023).

In the second-order analysis, our primary objective was to ensure that the emerging themes contained concepts that could help elucidate value creation in the metaverse age. We looked for evolving concepts that aligned with our theoretical framework (Clarke and Braun, 2014). Codes were further refined by relocating those suitable for other domains, and similar themes were merged, with new labels assigned in accordance with our research question (Clarke *et al.*, 2015).

With a coherent set of themes and codes in place, we grouped related themes to condense the emerging themes into aggregate dimensions. Drawing from these themes and guided by value creation theory, which emphasizes participants, resources, motives and practices of value creation (Wang *et al.*, 2022; Windsor, 2017), we identified enablers, digital resources, motives and practices of value creation in the metaverse era. These four pillars formed the core of our data analysis and emerged as the aggregate dimensions.

To enhance the reliability of our findings, the results obtained by one author were cross-checked by a second author, ensuring consensus on the themes. In cases of discrepancies, a third author was involved in the data analysis process to achieve agreement on the coding system (Chen *et al.*, 2021). Additionally, all authors thoroughly reviewed the results obtained from the data analysis to build a comprehensive understanding of value creation in the metaverse age (Nowell *et al.*, 2017).

### Results: emerging themes

Upon thorough review of the contents within the 895 press releases containing business news on the metaverse, we initiated the generation of first-order codes. This comprehensive process yielded a total of 33 first-order codes. Subsequently, we progressed to the next phase, refining these codes to facilitate the creation of second-order themes, ultimately resulting in the emergence of 17 distinct themes.

In the final stage of our analysis, we further aggregated similar themes and assigned new names to these aggregated dimensions, yielding 4 overarching dimensions. Specifically, these dimensions encompass (1) the enablers of value creation, (2) the digital resources for value creation, (3) the motives for value creation and (4) the practices of value creation. Adhering to an inductive approach, we ensured that these themes faithfully represented the original contents of the data set, drawing upon foundational works on value creation solely as a guideline for interpreting the emerging themes of value creation in the metaverse (Amit and Zott, 2001; Bowman and Ambrosini, 2000; Lepak *et al.*, 2007; Porter, 1985).

For a summary of the data structure, please refer to Table 1. Furthermore, Table 2 provides illustrative codes from which the second-order themes were derived, drawing from existing literature (Clark *et al.*, 2010). Additional details, including illustrative quotes and sources, are provided in Appendix 2.

#### *Enablers of value creation*

The findings of our empirical analysis revealed that there are three primary enablers of value creation in the metaverse: (1) affordable design cost, (2) decentralized database and (3) cryptocurrency as a medium of exchange.

1) *Affordable design cost* – The results show that users can afford a cheap design and development cost of NFT in the metaverse, which enables the production of value in the metaverse ecosystem. The following excerpt from the data provides more support for the aforementioned assertion.

The cost of developing and designing NFTs and metaverses is economically viable (Market News Publishing, February 8, 2022).

First-order concepts	Second-order themes	Aggregate dimensions
NFT and metaverse development and design are economically feasible	Affordable design cost	Enablers of value creation
Blockchain enables Metaverse to store user and application data in a decentralized database management solution	Decentralized database	
Connect without interruptions to other systems and applications		
Cryptocurrency will be the currency for transactions in the metaverse. It has multiple use cases in an evolving, decentralized, peer-to-peer and community-based digital eco-systems	Cryptocurrency as medium of exchange	
The research found that small business finance leaders are increasing their adoption of cryptocurrencies and the metaverse as digital payment technology advances		
Transporting 3D product visualizations, human holograms and 360 portals to its audiences	Extended reality	Digital resources for value creation
Changing e-commerce, digital advertising, hybrid virtual events		
Work, play, socialize, interact and also shop with brands and merchants, using VR and AR headsets	VR	
AR-related education and training opportunities	AR	
Value creation in the digital metaverse with wearable assets, physically redeemable artwork-, and unique ownership benefits		
Specializing in NFT architecture	Blockchain integration	
Creates and runs AR platforms		
NFT serve as the basis for value creation	NFTs	
NFT accelerates the transition into virtual worlds		
The rebranding may lead to pecuniary benefit for the company in terms of value creation and may pique investors' interest		
Naturally, the NFT merchants are seeking additional credibility and a value-creation logic specific to the online art market		
The core tenet of the metaverse is that real-time, interactive, accessible virtual, 3D settings will revolutionize how people connect with each other and with businesses	Social and business engagements	Motives for value creation
Industrial metaverse		
Decentralized metaverse		
Automated logistics		
Opening up options for creators to profit from their work	New entrepreneurial opportunities	
Metaverse driving digital transformation	Digital transformation	
Technology that protects people's rights and dignity		
Blockchain technologies shaping the future in every area that touches everyone's lives		
ROI is causing the demand for the company's 3D technology to expand quickly	Return on investment	

**Table 1.**  
Data structure

*(continued)*



First-order concepts	Second-order themes	Aggregate dimensions
Innovating and implementing strategic initiatives to increase the adoption of blockchain technology	Strategic initiatives	Value creation practices
Synchronicity, interoperability, persistence-, and being populated by content and experiences from both individuals and corporations	Social media presence	
Merging the physical and digital worlds to accelerate value creation	Interoperability	
Three key aspects feature the metaverse: presence, interoperability-, and standardization	Standardization	
In the face of ongoing change and uncertainty, MCB may model and perfect manufacturing processes indefinitely before implementing them on the shop floor. This will increase efficiency and reduce environmental impact	Product simulation	

Source(s): Author's own elaboration

Table 1.

If the costs associated with designing a metaverse can be kept at a reasonable level, then digital content developers will be in a position to provide user-friendly material that is relevant to users, and users will be able to access this content for low cost.

2) *Decentralized database* – A decentralized database management system, on which information about users and applications may be safely maintained, is a further crucial antecedent of value creation. These statements can be found in the following data extracts.

Blockchain allows metaverse users' and applications' data to be stored on its decentralized database management solution (ACCESSWIRE, March 30, 2022).

XYZ sets the base for web3 future to enable value creation by seamlessly connecting with other systems, applications (ACCESSWIRE, March 30, 2022).

Because every participant has the same version of the data on their system, data security is enabled by decentralization in the sense that it eliminates the autonomy of data control. As a result, it is nearly impossible for data to be stolen or lost when decentralized systems are in place.

3) *Cryptocurrency as a means of exchange* – The use of cryptocurrency as a means of exchange in the metaverse ecosystem contributes to the generation of additional value. The development of a digital payment system in the metaverse is of crucial relevance since it does away with the requirement for the use of financial intermediaries such as banks, allowing users to engage in trade without the need to involve any third parties in their dealings. This is further demonstrated by the data sample that follows:

The research found that finance officers within SMBs are increasingly embracing cryptocurrencies and the metaverse as digital payments technology forces an evolution (News Bites – Western Europe: United Kingdom, April 19, 2022).

*Digital resources for value creation*

The second dimension emerging from the analysis involves the digital resources for value creation, of which there are five main drivers: (1) extended reality, (2) VR, (3) AR, (4) blockchain integration and (5) non-fungible tokens (NFTs).

Second order themes	Illustrative quotes from first-order data
a. Affordable design cost	<p><i>"The cost of developing and designing NFTs and metaverses is economically viable"</i> (Market News Publishing, February 8, 2022)</p> <p><i>"SEVA.LOVE's goal is to make art and philanthropy accessible, create recurring revenue for sustainable actions"</i> (PR Newswire, October 28, 2021)</p>
b. Decentralized database	<p><i>"Blockchain allows metaverse users' and applications' data to be stored on its decentralized database management solution"</i> (ACCESSWIRE, March 30, 2022)</p> <p><i>"XYZ sets the base for web3 future to enable value creation by seamlessly connecting with other systems, applications"</i> (ACCESSWIRE, March 30, 2022)</p>
c. Cryptocurrency as medium of exchange	<p><i>"The research found that finance officers within SMBs are increasingly embracing cryptocurrencies and the metaverse as digital payments technology forces an evolution"</i> (News Bites–Western Europe: United Kingdom, April 19, 2022)</p> <p><i>"Every virtual economy needs money, so there is an enormous opportunity for blockchain and crypto assets to move to the mainstream. Cryptocurrencies work like virtual cash in virtual worlds. Transactions are almost instantaneous and the blockchain technology behind them is designed to build trust and ensure security"</i> (Business Day (South Africa) December 7, 2021)</p>
d. Extended reality	<p><i>"The idea is that 'extended reality' – the combination of augmented, virtual, and mixed reality – will become a key medium for social and business engagement"</i> (Impact News Service, October 30, 2021)</p> <p><i>"Looking Glass Labs is a digital platform specializing in NFTs architecture, immersive extended reality metaverse design, and virtual asset royalty streams"</i> (Proactive Investors (NA) March 17, 2022)</p>
e. VR	<p><i>"I think it is smart thinking by the company as the rebranding is of the parent company and not of individual brands. It positions the company as one which is looking at harnessing the opportunities that metaverse presents by creating a holistic and immersive experience for consumers deploying AI, VR, AR and new Internet technologies that are seeking to blur the divide between physical and virtual worlds"</i> (Ad Gully November 1, 2021)</p>
f. AR	<p><i>"NAR Solutions is a metaverse company that develops and operates "AR" platforms, transporting three-dimensional ("3D") product visualizations, human holograms and 360 portals to its audiences, altering e-commerce, digital advertising, hybrid virtual events and learning and training experiences in AR"</i> (Market News Publishing March 29, 2022)</p> <p><i>"And as we look beyond to AR and rethinking the mall virtually, on how you're approaching the metaverse as well"</i> (Fair Disclosure Wire, February 22, 2022)</p> <p><i>"Nextech AR Solutions is a Metaverse company that develops and operates "AR" platforms, transporting three-dimensional ("3D") product visualizations, human holograms and 360° portals to its audiences"</i> (Business Wire March 29, 2022)</p>
g. Blockchain integration	<p><i>"By leveraging extended reality, blockchain, and AIe technologies, we aim to create a metaverse that focuses on the principles of create, experience, and share which enhances the human experience"</i> (News Shopper January 19, 2022)</p> <p><i>"The Radio Caca USM Metaverse will jointly design and develop various concepts and cooperation with ITU and METU Blockchain Community on the following aspects"</i> (MENAFIN press release, February 11, 2022)</p>
h. NFTs	<p><i>"... To a certain extent, this may rely on NFTs as the foundation for value creation"</i> (Impact News Service October 30, 2021)</p> <p><i>"Another aspect of blockchain and cryptocurrency will be key in the metaverse: NFTs as the foundation for value creation"</i> (Business Day (South Africa), December 7, 2021)</p> <p><i>"As an expansion of that platform, the firm will also make a NFT alongside each investment"</i> (PR wire April 1, 2022)</p>

**Table 2.**  
Representative  
supporting data for  
each theme

(continued)

Second order themes	Illustrative quotes from first-order data
i. Social and business engagements	<i>“Central to the concept of the metaverse is the idea that virtual, 3D environments that are accessible and interactive in real time will become the transformative medium for social and business engagement”</i> (Impact News Service October 30, 2021)
j. New entrepreneurial opportunities	<i>“As we build for the metaverse, we’re focused on unlocking opportunities for creators to make money from their work”</i> (The Nation (Nigeria), November 21, 2021)
k. Digital transformation	<i>“StarHub’s investment has put us on a better footing and brought new opportunities for value creation”</i> (Edge Singapore April 4, 2022) <i>“Siemens and NVIDIA share a common vision that the industrial metaverse will drive digital transformation”</i> (Cityam.com, October 21, 2022) <i>“The digital transformation of government offers a historic opportunity to build a whole ecosystem of investment, innovation and services and business systems that frames the public sector as a key economic player”</i> (AFR online March 22, 2022) <i>“This thinking transforms government from being a cost centre, managing the steam trains, to a far more dynamic model as a platform for growth and real value creation”</i> (AFR online March 22, 2022)
l. Return on investment	<i>“The company believes that this value creation and ROI is leading to the rapidly growing demand for the Company’s 3D technology”</i> (Market News Publishing, March 29, 2022)
m. Strategic initiatives	<i>“The company continues to innovate and implement strategic initiatives to increase the adoption of blockchain technology and advance its Social Network+ and metaverse initiatives”</i> (West Corporation, Apr 26, 2022) <i>“We continued our strategic initiatives to drive penetration of our future-proof AVANCE platform with a 46% increase in installed base in 2021”</i> (Fair Disclosure Wire, March 3, 2022)
n. Social media presence	<i>“Persistence (no obvious “on” s or “off” to access), synchronicity (existing in real-time) and interoperability, as well being populated by content and experiences by both individuals and businesses”</i> (Impact News Service October 30, 2021) <i>“While the NFT world is incredible, it is still evolving, and we saw a gap in the market to build a community and create a transparent exchange that allows people to make a real social impact via the metaverse”</i> (PR Newswire, October 28, 2021)
o. Interoperability	<i>“Three key aspects are said to exist within the metaverse: presence, interoperability, and standardization”</i> (News Bites–Western Europe: United Kingdom April 28, 2022) <i>“As more established gaming companies begin to explore the metaverse, Borget insisted that the core of the metaverse remained decentralization, interoperability and creator-generated content”</i> (Forkast.News February 18, 2022)
p. Product simulation	<i>“MCB can simulate and refine manufacturing processes infinitely in the Microsoft Cloud before bringing them to the shop floor to enhance efficiency and minimize its environmental impact amid constant change and uncertainty”</i> (Just-auto global news, October 12, 2022) <i>“Roblox capitalized on the draw of metaverse and its own strength of user base by hosting exclusive product launches from luxury fashion brands”</i> (Globe Newswire, February 22, 2022)

Source(s): Author’s own elaboration

Table 2.

1) *Extended Reality*–Extended reality, a merger of AR and VR, is one of the key resources for the creation of value in the metaverse. This is further demonstrated by the data sample that follows:

The idea is that “extended reality” – the combination of augmented, virtual, and mixed reality – will become a key medium for social and business engagement (Impact News Service, October 30, 2021).

2) *VR* – VR is an additional digital resource for the generation of value in the metaverse. VR is essentially a simulation of a 3D picture on the computer, which aims to generate an interaction that appears to be exactly as genuine as it would be in the real world. The following extract was collected from the data:

I think it is smart thinking by the company as the rebranding is of the parent company and not of individual brands. It positions the company as one which is looking at harnessing the opportunities that metaverse presents by creating a holistic and immersive experience for consumers deploying AI, VR, AR and new Internet technologies that are seeking to blur the divide between physical and virtual worlds (Ad Gully November 1, 2021).

VR is used in conjunction with other digital technologies, such as AI, to help bridge the gap between real-world and virtual events.

3) *AR* – The term refers to a technology that uses 3D images to present a perspective that is a combination of the actual world and the virtual world. Following is a report of a data sample regarding the theme:

NAR Solutions is a metaverse company that develops and operates “AR” platforms, transporting three-dimensional (“3D”) product visualizations, human holograms and 360 portals to its audiences, altering e-commerce, digital advertising, hybrid virtual events and learning and training experiences in AR (Market News Publishing March 29, 2022).

4) *Blockchain integration* – The term “blockchain” refers to a decentralized digital technology that functions via a consensus mechanism facilitated by smart contracts. In the metaverse, blockchain technology collaborates with other paradigm-shifting technologies, such as AI and cloud computing, to provide a digital environment that provides users with both social and financial benefits. An example of this digital resource of value creation is contained in the following data extract:

By leveraging extended reality, blockchain, and AI technologies, we aim to create a metaverse that focuses on the principles of create, experience, and share which enhances the human experience (News Shopper January 19, 2022).

5) *NFTs* – NFTs are one of the fundamental building blocks for the creation of value, as obtained from the data sample:

... To a certain extent, this may rely on NFTs as the foundation for value creation (Impact News Service October 30, 2021).

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Users are able to trade without the risk of fraud, and the issue of asset indivisibility is eliminated thanks to the use of NFTs. They are one-of-a-kind cryptographic assets that exist on the blockchain. These assets are used to represent real-world items such as artworks, music, real estate, and games.

### *Motives for value creation*

Following the completion of the data analysis, another notable aspect that emerges is the motivations for the creation of value in the metaverse. The findings suggest that there are four different justifications for the creation of value in the metaverse: (1) social and business engagement, (2) new entrepreneurial opportunities, (3) digital transformation intention and (4) return on investment.

1) *Social and business engagement* – According to the findings of our analysis, the metaverse serves not only as a platform for interpersonal communication but also as a place for business-related endeavors. The following can be found in the data extraction:

Central to the concept of the metaverse is the idea that virtual, 3D environments that are accessible and interactive in real time will become the transformative medium for social and business engagement (Impact News Service October 30, 2021).

2) *New entrepreneurial opportunities* – The creation of value in the metaverse is meant to open new business opportunities for both the people who provide content and the people who utilize it. The fact that individuals have the propensity to adopt a technology that improves their socioeconomic value is essential in this mechanism. The following extract is included in the data sample:

As we build for the metaverse, we're focused on unlocking opportunities for creators to make money from their work (The Nation (Nigeria), November 21, 2021).

### 3) *Digital transformation intention*

The intention to digitally transform businesses is another rationale for value creation in the metaverse. This is exemplified by the data extract:

Siemens and NVIDIA share a common vision that the industrial metaverse will drive digital transformation ([Cityam.com](https://www.cityam.com), October 21, 2022).

4) *Return on investment (ROI)* – ROI is another reason for value creation. A solid rationale for creating value in the metaverse is the desire to earn a good payback that can justify investment costs. Such a rationale for value creation in the metaverse can be found in the following data extract:

ROI is leading to the rapidly growing demand for the Company's 3D technology (Market News Publishing, May 3, 2022).

### *Value creation practices*

Our analysis ends with a discussion of five practices that support the creation of value in the metaverse: (1) strategic initiatives, (2) social media presence, (3) interoperability, (4) standardization and (5) product simulation.

1) *Strategic initiatives* – As the data sample suggests, one practice that contributes to the creation of value in the metaverse is the development and execution of novel ideas that are the result of strategic thinking:

The company continues to innovate and implement strategic initiatives to increase the adoption of blockchain technology and advance its Social Network+ and metaverse initiatives (West Corporation, Apr 26, 2022).

2) *Social media presence* – The contents of the metaverse are continually updated by contributions from users, both private and commercial, and this practice helps in the creation of value from the metaverse. For instance, the representative sample of the data demonstrates that:

Persistence (no obvious “on ”s or “off ” to access), synchronicity (existing in real-time) and interoperability, as well being populated by content and experiences by both individuals and businesses (Impact News Service October 30, 2021).

3) *Interoperability* – Another practice that contributes to the creation of value in the metaverse is the utilization and interchange of information between different systems. An illustration of this may be found in the following data extract:

Three key aspects are said to exist within the metaverse: presence, interoperability, and standardization (News Bites–Western Europe: United Kingdom April 28, 2022).

4) *Standardization* – Standardization is another practice that contributes to the creation of value in the metaverse. Before users and content providers are allowed to use the platform, they are required to comply with a set of conditions that are considered standard requirements. This assures ethical compliance as well as the security of operations, with the goal of preventing fraudulent activities and digital verbal abuse among users and creators.

5) *Product simulation* (in the cyber world before moving on to the real world) – Another method for the generation of value is the development of products on the metaverse in the form of their digital versions before bringing them into physical existence. The following is an example that illustrates further how the data are used on the point:

MCB can simulate and refine manufacturing processes infinitely in the Microsoft Cloud before bringing them to the shop floor to enhance efficiency and minimize its environmental impact amid constant change and uncertainty (Just-auto global news, October 12, 2022).

### **Discussion of the emerging themes**

The metaverse represents a parallel universe in which numerous firms are heavily investing in content, platforms, infrastructure and enablers. These investments, along with the increasing prevalence of metaverse-focused value propositions, have prompted scholars to delve into this three-dimensional environment to decipher its characteristics (Narin, 2021).

Pioneering studies in the field have already indicated that the metaverse can unlock new commercial opportunities for companies and potentially revolutionize established business

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models (Dwivedi *et al.*, 2022; Kraus *et al.*, 2022). The primary challenge for businesses lies in gaining a deeper understanding of how the metaverse may reshape business practices and effectively harness the opportunities for value creation that this technology presents. To date, the literature has not established a solid comprehension of how value is generated in the metaverse.

Our research provides fresh insights into the mechanics of value creation in the metaverse, identifying four pivotal aspects through which their impacts become evident: (1) value creation enablers, (2) digital resources for value creation, (3) motives for value creation and (4) value creation practices. Below, we delve into each of these emerging themes within the existing literature.

Firstly, our findings underscore the significance of value creation enablers, referring to factors that enhance the activation of the value creation mechanism. These factors relate to the utility of suitable technological tools (like decentralized databases and cryptocurrencies) and their economic accessibility (affordable design costs). These findings align with prior research discussing the metaverse's ecology and ecosystems, highlighting the roles of blockchain and AI in unlocking the metaverse's potential (Gadekallu *et al.*, 2022; Lee *et al.*, 2021; Yang *et al.*, 2022). The economic accessibility of technologies can prove to be a crucial, albeit non-obvious, factor, as demonstrated in educational applications where the cost of advanced and high-quality digital content interaction equipment, such as head-mounted technologies, is a critical consideration (Asiksoy, 2023).

Secondly, our analysis indicates that the metaverse thrives on specific digital resources (Giuglioli and Pellegrini, 2023), which allow it to exist and generate its benefits. These digital resources for value creation include augmented, extended and virtual reality; blockchain integration; and NFTs. These elements enable businesses to activate virtuous mechanisms that often do not necessitate traditional intermediation (Dincelli and Yayla, 2022). These factors serve as prerequisites for firms to identify and seize unique commercial opportunities within the metaverse and gain competitive advantages. Our findings resonate with prior research highlighting the importance of smooth metaverse operations and the role of tools such as virtual, augmented and extended reality (Chen *et al.*, 2022) and NFTs (Hartwich *et al.*, 2023).

Thirdly, our research reveals that the primary motives for value creation encompass social and business engagement, new entrepreneurial opportunities, digital transformation and return on investment. Engagement-related characteristics initially align with virtual world interactions defining the metaverse. Previous research has established a connection between these factors and value creation, advocating a multidimensional perspective of value (Holbrook, 1986) and establishing experiential and instrumental value in the metaverse (Barta *et al.*, 2023). Our findings indicate that metaverse technologies, such as VR, enhance social interactions and are linked to value generation dynamics. Barta *et al.* (2023) elaborate on this by proposing that individual enjoyment and the ability to interact with like-minded individuals in the metaverse contribute value to users. Other research emphasizes the need for a deeper exploration of engagement dynamics associated with the metaverse, including behavioral, cognitive and emotional involvement (Asiksoy, 2023). Furthermore, our analysis underscores the significance of economic and new entrepreneurial opportunities in the metaverse's value creation dynamics, consistent with prior research (Gupta *et al.*, 2023). Recent studies have also shown the importance of scarcity as a purchase motivator in the metaverse (Shen *et al.*, 2021), as observed in fashion marketing with limited supplies of NFT clothing, which heightens user desire for acquisition (Sung *et al.*, 2023). Additionally, research focuses on the contrasts and peculiarities of the metaverse, such as the distinct development processes for new goods and services compared to the physical world (Gupta *et al.*, 2023).

Fourthly, our study identifies several value creation practices in the metaverse age. In this regard, some researchers concentrate on macro variables that drive these features, such as a

company's stakeholders or innovation, while others examine micro components to understand how these dynamics are initiated and sustained (Mancuso *et al.*, 2023). These studies demonstrate that stakeholder awareness (both internal and external) regarding the metaverse's potential benefits, and their actual technological proficiency, are essential prerequisites for effectively activating the value creation process, as our study also confirms. Interoperability and standardization characteristics, whose significance emerges from our research, are crucial for initiating new mechanisms of value generation and co-creation in the metaverse, such as blockchain and NFTs (Belk, 2023; Kretschmer *et al.*, 2022; Schobel and Leimeister, 2023).

### Concluding remarks

In this paper, our objective was to make a valuable contribution to this relatively unexplored area of research. To address the research question concerning how value is generated in the metaverse, we conducted a thorough thematic analysis after initially screening the collected data. Our analysis revealed four prominent themes that revolve around the creation of value in the metaverse age. These themes are as follows: (1) value creation enablers, (2) digital resources for value creation, (3) motives for value creation and (4) value creation practices.

### *Theoretical implications*

With our paper, we seek to contribute to the flourishing but still scarce metaverse literature by enhancing our understanding of how value is created in the metaverse age. While some scholars have explored the level of innovation in Meta's business model transformation (Kraus *et al.*, 2022), and others have examined the significance of both internal and external factors in AR smart glasses for value creation (Ro *et al.*, 2018), a comprehensive understanding of how value is generated in the metaverse remains elusive. Papagiannidis *et al.* (2008) emphasized that "the metaverse is likely to create lucrative opportunities for an increasing number of individuals and organizations from both the developed and the developing worlds" (Papagiannidis *et al.*, 2008: p. 616), underscoring the importance of investigating this fundamental question. Consequently, our article contributes to the existing research on the metaverse by partially addressing this issue. Specifically, the thematic analysis has revealed four key emerging themes related to value creation in the metaverse age: (1) enablers of value creation, (2) digital resources for value creation, (3) motives for value creation and (4) value creation practices. Building on these findings, our research has three primary theoretical implications.

First, we advance the discourse on the mechanisms of value creation associated with digital technologies, particularly the metaverse. In alignment with prior studies (Kraus *et al.*, 2022), our results indicate that the metaverse can play a pivotal role in shaping organizational change and formulating business strategies, as well as uncovering novel business opportunities that yield innovative value propositions.

Second, our findings underscore the importance of empowering businesses with the capability to effectively employ digital technology for enhancing operational processes, innovating products and services and improving communication with suppliers and consumers (Queiroz *et al.*, 2023). In accordance with research on digital transformation strategies (Dabrowska *et al.*, 2022), firms must integrate and align digital technology with their broader strategic decisions, necessitating a reevaluation of their existing business models (Ferrigno *et al.*, 2023; Matt *et al.*, 2015). While previous research on the metaverse has predominantly focused on its technological aspects, it remains essential to gain a deeper understanding of its potential strategic and operational implications for businesses (Nambisan, 2017).

Third, the challenge of value creation in the metaverse highlights the significance of considering its ethical and social ramifications (Anshari *et al.*, 2022; Papagiannidis *et al.*, 2008). To facilitate the development of a collective awareness regarding the ethical and social



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consequences of the metaverse, with particular attention to vulnerable user and stakeholder groups, it is imperative for the academic discourse to address these issues comprehensively.

### *Managerial implications*

The journey of firms into the metaverse is still at an early stage of development. Recent studies have interpreted the strategic moves of some large firms in this domain as signals to capital markets, driven by incremental innovations in their business models (Kraus *et al.*, 2022). However, the metaverse is not exclusively the domain of large corporations; it also includes small and medium-sized businesses eager to capitalize on the emerging commercial opportunities associated with the diverse technology layers that constitute the metaverse (Mourtzis *et al.*, 2022).

Based on our findings, we can provide valuable insights for the consideration of managers in firms. Firstly, our study underscores the pivotal role of specific enabling technologies, such as VR, AR and blockchain, in both the development of the metaverse and the creation of value within it. Managers are encouraged to invest resources in gaining a deep understanding of these technologies, as they serve as foundational pillars for the successful development of metaverse applications and services.

Secondly, while the metaverse currently consists of centralized platforms where users can engage in various activities, the future holds the potential for significant transformation with the incorporation of blockchain technology and the emergence of Web3. Web3, often regarded as the future of the internet, operates on blockchain technology and decentralized applications (Dapps), allowing users to have sole ownership of their data and decide whether to monetize it. Web3 aims to operate independently of major tech companies, making it accessible to the public and functioning without intermediaries. This shift has the potential to profoundly impact and reshape the mechanisms of value creation and appropriation (Ferrigno *et al.*, 2023), opening up new opportunities for both businesses and consumers.

The dynamics of interoperability, proof of ownership and governance will play crucial roles in this transformation, making the integration and expansion of Web3 and blockchain-based metaverse technologies key indicators of future prospects. Managers should remain vigilant and informed about these developments to strategically position their organizations within the evolving metaverse landscape, ensuring they can seize the opportunities that arise.

### *Limitations and further research*

Our study offers valuable avenues for further research, albeit with some notable limitations. Firstly, a deeper investigation into the metaverse's impact on value creation mechanisms within specific industries, types of companies and countries is warranted. Future research can delve into the dynamics and opportunities presented by the metaverse in various sectors (Buhalis *et al.*, 2022).

Secondly, while our thematic analysis provided intriguing insights, press releases, being primarily aimed at non-specialist readers, may lack the depth of detailed business research. Moreover, our focus on ICT sectors may not fully capture contributions from companies in diverse industries like Walt Disney, BMW and Marriott Bonvoy. Conducting interviews or questionnaires with managers specializing in metaverse technologies could provide a richer understanding of value creation in the metaverse age.

Thirdly, the rapid proliferation of metaverse implementation experiences across different technological layers will lead to larger data sets on applications and their effects on company performance. These data sets will facilitate the adoption of quantitative research approaches.

Fourthly, the role of acquisitions in the metaverse's development is noteworthy, as tech giants are acquiring gaming start-ups to enhance their virtual environments. Investigating the strategies behind these acquisitions and the unique characteristics of "meta-alliances" is essential.

Fifthly, as the metaverse comprises seven fundamental layers, understanding the configurational effects between these layers that contribute to a company's success could be explored using a fuzzy-set Qualitative Comparative Analysis (QCA) approach (e.g. Kraus *et al.*, 2018; Kumar *et al.*, 2022).

Lastly, a prospective research avenue could focus on the evolving social and psychological dynamics within the metaverse, particularly how virtual identities impact individuals' self-perception and interpersonal relationships in physical society. Investigating potential human barriers to metaverse adoption is crucial for addressing societal challenges and harnessing its value creation potential.

## References

- Adams, R., Almeida, H. and Ferreira, D. (2009), "Understanding the relationship between founder-CEOs and firm performance", *Journal of Empirical Finance*, Vol. 16 No. 1, pp. 136-150.
- Amit, R. and Zott, C. (2001), "Value creation in e-business", *Strategic Management Journal*, Vol. 22 No. 6, pp. 493-520.
- Anshari, M., Syafrudin, M., Fitriyani, N.L. and Razzaq, A. (2022), "Ethical responsibility and sustainability (ERS) development in a metaverse business model", *Sustainability*, Vol. 14 No. 23, 15805.
- Asiksoy, G. (2023), "Empirical studies on the metaverse-based education: a systematic review", *International Journal of Engineering Pedagogy*, Vol. 13 No. 3, pp. 1-20.
- Åström, J., Reim, W. and Parida, V. (2022), "Value creation and value capture for AI business model innovation: a three-phase process framework", *Review of Managerial Science*, Vol. 16, pp. 2111-2133, doi: <https://doi.org/10.1007/s11846-022-00521-z>
- Barrera, K.G. and Shah, D. (2023), "Marketing in the Metaverse: conceptual understanding, framework, and research agenda", *Journal of Business Research*, Vol. 155, 113420.
- Barta, S., Gurrea, R. and Flavián, C. (2023), "Telepresence in live-stream shopping: an experimental study comparing Instagram and the metaverse", *Electronic Markets*, Vol. 33 No. 1, p. 29.
- Belk, R. (2023), "The digital Frontier as a liminal space", *Journal of Consumer Psychology*, pp. 1-7.
- Bourlakis, M., Papagiannidis, S. and Li, F. (2009), "Retail spatial evolution: paving the way from traditional to metaverse retailing", *Electronic Commerce Research*, Vol. 9 No. 1, pp. 135-148.
- Bowman, C. and Ambrosini, V. (2000), "Value creation versus value capture: towards a coherent definition of value in strategy", *British Journal of Management*, Vol. 11 No. 1, pp. 1-15.
- Braun, V. and Clarke, V. (2006), "Using thematic analysis in psychology", *Qualitative Research in Psychology*, Vol. 3 No. 2, pp. 77-101.
- Buhalis, D., Lin, M.S. and Leung, D. (2022), "Metaverse as a driver for customer experience and value co-creation: implications for hospitality and tourism management and marketing", *International Journal of Contemporary Hospitality Management*, Vol. 35 No. 2, pp. 701-716.
- Buhalis, D., Leung, D. and Lin, M. (2023), "Metaverse as a disruptive technology revolutionising tourism management and marketing", *Tourism Management*, Vol. 97, 104724.
- Byrne, D. (2022), "A worked example of Braun and Clarke's approach to reflexive thematic analysis", *Quality and Quantity*, Vol. 56 No. 3, pp. 1391-1412.
- CB insights (2022), "The big tech in metaverse report. How meta, Qualcomm, and Microsoft are building the metaverse", available at: <https://www.cbinsights.com/research/report/big-tech-metaverse/>
- Chen, S., Liu, X., Yan, J., Hu, G. and Shi, Y. (2021), "Processes, benefits, and challenges for adoption of blockchain technologies in food supply chains: a thematic analysis", *Information Systems and E-Business Management*, Vol. 19 No. 3, pp. 909-935.
- Chen, B., Song, C., Lin, B., Xu, X., Tang, R., Lin, Y., Yao, Y., Timoney, J. and Bi, T. (2022), "A cross-platform metaverse data management system", 2022 IEEE International Conference on

---

Metrology for Extended Reality, Artificial Intelligence and Neural Engineering (MetroXRINE), IEEE, pp. 145-150.

- Clark, S.M., Gioia, D.A., Ketchen, D.J., Jr and Thomas, J.B. (2010), "Transitional identity as a facilitator of organizational identity change during a merger", *Administrative Science Quarterly*, Vol. 55 No. 3, pp. 397-438.
- Clarke, V. and Braun, V. and Thematic analysis (2014), *Encyclopedia of Critical Psychology [Internet]*, Vol. 52, Springer, New York, NY.
- Clarke, V., Braun, V. and Hayfield, N. (2015), "Thematic analysis", *Qualitative Psychology: A Practical Guide to Research Methods*, Vol. 3, pp. 222-248.
- Dąbrowska, J., Almpapoulou, A., Brem, A., Chesbrough, H., Cucino, V., Di Minin, A., Giones, F., Hakala, H., Marullo, C., Mention, A.L., Mortara, L., Nørskov, S., Nylund, P.A., Oddo, C.M., Radziwon, A. and Ritala, P. (2022), "Digital transformation, for better or worse: a critical multi-level research agenda", *R&D Management*, Vol. 52 No. 5, pp. 930-954, doi: [10.1111/radm.12531](https://doi.org/10.1111/radm.12531).
- Damar, M. (2021), "Metaverse shape of your life for future: a bibliometric snapshot", *Journal of Metaverse*, Vol. 1 No. 1, pp. 1-8.
- Deacon, D. (2007), "Yesterday's papers and today's technology: digital newspaper archives and 'push button' content analysis", *European Journal of Communication*, Vol. 22 No. 1, pp. 5-25.
- Dincelli, E. and Yayla, A. (2022), "Immersive virtual reality in the age of the Metaverse: a hybrid-narrative review based on the technology affordance perspective", *The Journal of Strategic Information Systems*, Vol. 31 No. 2, 101717.
- Dwivedi, Y.K., Hughes, L., Baabdullah, A.M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M.M. and Wamba, S.F. (2022), "Metaverse beyond the hype: multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy", *International Journal of Information Management*, Vol. 66, 102542.
- Dwivedi, Y.K., Hughes, L., Wang, Y., Alalwan, A.A., Ahn, S.J., Balakrishnan, J., Russell, S.B., Buhalis, D., Dutot, V., Felix, R., Filieri, R., Flavián, C., Gustafsson, A., Hinsch, C., Hollensen, S., Jain, V., Kim, J., Krishen, A.S., Lartey, J.O., Pandey, N., Ribeiro-Navarrete, S., Raman, R., Rauschnabel, P.A., Sharma, A., Sigala, M., Veloutsou, C. and Wirtz, J. (2023), "Metaverse marketing: how the metaverse will shape the future of consumer research and practice", *Psychology and Marketing*, Vol. 40 No. 4, pp. 750-776.
- Elmasry, T., Hazan, E., Hamza, K., Kelly, G., Srivastava, S., Yee, L. and Zimmel, R.W. (2022), "Value creation in the metaverse: the real business of the virtual world", available at: <https://mck.co/3rK1D88> (accessed 14 September 2022).
- Ferrigno, G. and Baroncelli, A. (2022), "Old wine in new bottles? The challenges and opportunities of the metaverse", Working paper.
- Ferrigno, G. and Cucino, V. (2021), "Innovating and transforming during COVID-19: insights from Italian firms", *R&D Management*, Vol. 51 No. 4, pp. 325-338.
- Ferrigno, G., Del Sarto, N., Picaluga, A. and Baroncelli, A. (2023), "Industry 4.0 base technologies and business models: a bibliometric analysis", *European Journal of Innovation Management*, Vol. 26 No. 7, pp. 502-526.
- Ferrigno, G., Martin, X. and Battista Dagnino, G. (2023), "Explaining the interplay of value creation and value appropriation in strategic alliances: A developmental perspective", *International Journal of Management Reviews*.
- Gadekallu, T.R., Huynh-The, T., Wang, W., Yenduri, G., Ranaweera, P., Pham, Q.V. and Liyanage, M. (2022), "Blockchain for the metaverse: a review", *arXiv preprint*, arXiv:2203.09738.
- Gent, E. (2022), "Lessons from a second life before meta, philip rosedale created an online universe", *IEEE Spectrum*, Vol. 59 No. 1, pp. 19-19.
- Gioia, D.A., Corley, K.G. and Hamilton, A.L. (2013), "Seeking qualitative rigor in inductive research: notes on the Gioia methodology", *Organizational Research Methods*, Vol. 16 No. 1, pp. 15-31.

- Giuggioli, G. and Pellegrini, M.M. (2023), "Artificial intelligence as an enabler for entrepreneurs: a systematic literature review and an agenda for future research", *International Journal of Entrepreneurial Behavior and Research*, Vol. 29 No. 4, pp. 816-837.
- Gupta, B.B., Gaurav, A., Albeshri, A.A. and Alsalman, D. (2023), "New paradigms of sustainable entrepreneurship in metaverse: a micro-level perspective", *International Entrepreneurship and Management Journal*, Vol. 19, pp. 1-17.
- Hajek, C. (2023), "Entrepreneurs have what it takes: positively-distinct entrepreneurial social identity as realized during intra-and intergroup conversations", *International Journal of Entrepreneurial Behavior and Research*, (ahead-of-print).
- Hartwich, E., Ollig, P., Fridgen, G. and Rieger, A. (2023), "Probably something: a multi-layer taxonomy of non-fungible tokens", *Internet Research*, Vol. 1 No. 1, pp. 1066-2243.
- Hassan Shah, S.H., Noor, S., Bayiz Ahmad, A., Saleem Butt, A. and Lei, S. (2022), "Retrospective view and thematic analysis of value co-creation through bibliometric analysis", *Total Quality Management and Business Excellence*, Vol. 33 No. 7, pp. 752-776.
- Holbrook, M.B. (1986), "Emotion in the consumption experience: toward a new model of the human consumer", in Peterson, R.A. (Ed.), *The Role of Affect in Consumer Behavior: Emerging Theories and Applications*, pp. 17-52, Lexington Books.
- Kaplan, A. and Haenlein, M. (2009), "The fairyland of second life: about virtual social worlds and how to use them", *Business Horizons*, Vol. 52 No. 6, pp. 563-572.
- Kim, J. (2021), "Advertising in the metaverse: research agenda", *Journal of Interactive Advertising*, Vol. 21 No. 3, pp. 141-144.
- Kraus, S., Ribeiro-Soriano, D. and Schüssler, M. (2018), "Fuzzy-set qualitative comparative analysis (fsQCA) in entrepreneurship and innovation research—the rise of a method", *International Entrepreneurship and Management Journal*, Vol. 14, pp. 15-33.
- Kraus, S., Kanbach, D.K., Krysta, P.M., Steinhoff, M.M. and Tomini, N. (2022), "Facebook and the creation of the metaverse: radical business model innovation or incremental transformation?", *International Journal of Entrepreneurial Behavior and Research*, Vol. 28 No. 9, pp. 52-77.
- Kretschmer, T., Leiponen, A., Schilling, M. and Vasudeva, G. (2022), "Platform ecosystems as meta-organizations: implications for platform strategies", *Strategic Management Journal*, Vol. 43 No. 3, pp. 405-424.
- Kumar, S., Sahoo, S., Lim, W.M., Kraus, S. and Bamel, U. (2022), "Fuzzy-set qualitative comparative analysis (fsQCA) in business and management research: a contemporary overview", *Technological Forecasting and Social Change*, Vol. 178, 121599.
- Lahteenmaki, I., Nätti, S. and Saraniemi, S. (2022), "Digitalization-enabled evolution of customer value creation: an executive view in financial services", *Journal of Business Research*, Vol. 146, pp. 504-517.
- Lee, L.H., Braud, T., Zhou, P., Wang, L., Xu, D., Lin, Z., . . . and Hui, P. (2021), "All one needs to know about metaverse: a complete survey on technological singularity, virtual ecosystem, and research agenda", *arXiv preprint*, arXiv:2110.05352.
- Lepak, D.P., Smith, K.G. and Taylor, M.S. (2007), "Value creation and value capture: a multilevel perspective", *Academy of Management Review*, Vol. 32 No. 1, pp. 180-194.
- Mancuso, I., Petruzzelli, A.M., Panniello, U. and Nespoli, C. (2023), "A microfoundation perspective on business model innovation: the cases of roblox and meta in metaverse", *IEEE Transactions on Engineering Management*, doi: [10.1109/TEM.2023.3275198](https://doi.org/10.1109/TEM.2023.3275198).
- Matt, C., Hess, T. and Benlian, A. (2015), "Digital transformation strategies", *Business and Information Systems Engineering*, Vol. 57 No. 5, pp. 339-343.
- McKinsey and Company (2022), "Value creation in the metaverse: the real business of the virtual world", available at: <https://www.mckinsey.com/capabilities/growth-marketing-and-sales/ourinsights/value-creation-in-the-metaverse>
- Mourtzis, D., Panopoulos, N., Angelopoulos, J., Wang, B. and Wang, L. (2022), "Human centric platforms for personalized value creation in metaverse", *Journal of Manufacturing Systems*, Vol. 65, pp. 653-659.

- Nambisan, S. (2017), "Digital entrepreneurship: toward a digital technology perspective of entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 41 No. 6, pp. 1029-1055.
- Narin, N.G. (2021), "A content analysis of the metaverse articles", *Journal of Metaverse*, Vol. 1 No. 1, pp. 17-24.
- Nowell, L.S., Norris, J.M., White, D.E. and Moules, N.J. (2017), "Thematic analysis: striving to meet the trustworthiness criteria", *International Journal of Qualitative Methods*, Vol. 16 No. 1, 1609406917733847.
- Oguntegebe, K.F., Di Paola, N. and Vona, R. (2022), "Behavioural antecedents to blockchain implementation in agrifood supply chain management: a thematic analysis", *Technology in Society*, Vol. 68 No. 1, 101927.
- Oguntegebe, K.F., Di Paola, N. and Vona, R. (2023), "Traversing the uncommon boulevard: entrepreneurial trajectory of decentralised autonomous organisations (DAOs)", *Technology Analysis and Strategic Management*, pp. 1-17.
- Papagiannidis, S., Bourlakis, M. and Li, F. (2008), "Making real money in virtual worlds: MMORPGs and emerging business opportunities, challenges and ethical implications in metaverses", *Technological Forecasting and Social Change*, Vol. 75 No. 5, pp. 610-622.
- Porter, M.E. (1985), *Competitive Advantage: Creating and Sustaining Superior Performance*, Free Press, New York.
- Queiroz, M.M., Fosso Wamba, S., Pereira, S.C.F. and Chiappetta Jabbour, C.J. (2023), "The metaverse as a breakthrough for operations and supply chain management: implications and call for action", *International Journal of Operations and Production Management*, Vol. 43 No. 10, pp. 1539-1553.
- Reuschl, A., Tiberius, V., Filser, M. and Qiu, Y. (2022), "Value configurations in sharing economy business models", *Review of Managerial Science*, Vol. 16, pp. 89-112, doi: <https://doi.org/10.1007/s11846-020-00433-w>
- Ro, Y.K., Brem, A. and Rauschnabel, P.A. (2018), "Augmented reality smart glasses: definition, concepts and impact on firm value creation", in *Augmented Reality and Virtual Reality*, Springer, Cham, pp. 169-181.
- Schöbel, S.M. and Leimeister, J.M. (2023), "Metaverse platform ecosystems", *Electronic Markets*, Vol. 33 No 1, pp. 12.
- Sears, J. and Hoetker, G. (2014), "Technological overlap, technological capabilities, and resource recombination in technological acquisitions", *Strategic Management Journal*, Vol. 35 No. 1, pp. 48-67.
- Shen, B., Tan, W., Guo, J., Zhao, L. and Qin, P. (2021), "How to promote user purchase in metaverse? A systematic literature review on consumer behavior research and virtual commerce application design", *Applied Sciences*, Vol. 11 No. 23, 11087.
- Sung, E., Kwon, O. and Sohn, K. (2023), "NFT luxury brand marketing in the metaverse: leveraging blockchain-certified NFTs to drive consumer behavior", *Psychology and Marketing*, Vol. 40, pp. 2306-2325.
- Wang, L., Luo, X.R., Lee, F. and Benitez, J. (2022), "Value creation in blockchain-driven supply chain finance", *Information and Management*, Vol. 59 No. 7, e103510.
- Webster, J. and Watson, R.T. (2002), "Analyzing the past to prepare for the future: writing a literature review", *MIS Quarterly*, Vol. 26 No. 2, pp. 13-23.
- Williams, C. and Lee, S.H. (2009), "Exploring the internal and external venturing of large R&D-intensive firms", *R&D Management*, Vol. 39 No. 3, pp. 231-246.
- Windsor, D. (2017), "Value creation theory: literature review and theory assessment", *Stakeholder Management*, Vol. 1, pp. 75-100.
- Yang, Q., Zhao, Y., Huang, H., Xiong, Z., Kang, J. and Zheng, Z. (2022), "Fusing blockchain and AI with metaverse: a survey", *IEEE Open Journal of the Computer Society*, Vol. 3, pp. 122-136.

(The Appendix follows overleaf)

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**Table A1.**  
Distribution of  
business news  
publishers by country

S/N	Country	Frequency	Percentage
1	USA	16	53.33
2	Canada	2	6.67
3	Korea	1	3.33
4	Australia	2	6.67
5	Singapore	1	3.33
6	UK	2	6.67
7	South Africa	2	6.67
8	India	1	3.33
9	UAE	1	3.33
10	Indonesia	1	3.33
11	Nigeria	1	3.33
	<i>Total</i>	<i>30</i>	<i>100</i>

**Source(s):** Authors' work

2nd order themes	Illustrative codes from first order data	Title	Country
a. Affordable design cost	“The cost of developing and designing NFTs and metaverses is economically viable” (Market News Publishing, February 8, 2022)	3D Modelling Technology Provides Genesis for the Development Of the HAPEBEAST NFT Collection	Canada
	“SEVA.LOVE’s goal is to make art and philanthropy accessible, create recurring revenue for sustainable actions”(PR Newswire, October 28, 2021 page 1)	SEVA.LOVE, a Transformational Platform for Good, is Powering NFTs and the Metaverse on the Hedera Network	USA
b. Decentralized database	“Blockchain allows metaverse users’ and applications’ data to be stored on its decentralized database management solution” (ACCESSWIRE, March 30, 2022)	Inery Introduces Cross-Chain Database Management in the Web3 Metaverse Space	USA
	“XYZ sets the base for web3 future to enable value creation by seamlessly connecting with other systems, applications” (ACCESSWIRE, March 30, 2022)	Inery Introduces Cross-Chain Database Management in the Web3 Metaverse Space	USA
c. Cryptocurrency as medium of exchange	“The research found that finance officers within SMBs are increasingly embracing cryptocurrencies and the metaverse as digital payments technology forces an evolution” (News Bites – Western Europe: United Kingdom, April 19, 2022)	A new breed of finance frontrunners face the future: SMBs embrace the metaverse and cryptocurrency	UK
	“Every virtual economy needs money, so there is an enormous opportunity for blockchain and crypto assets to move to the mainstream. Cryptocurrencies work like virtual cash in virtual worlds. Transactions are almost instantaneous and the blockchain technology behind them is designed to build trust and ensure security” (Business Day (South Africa) December 7, 2021)	The metaverse: welcome to the next online frontier	South Africa
d. Extended reality	“The idea is that “extended reality” – the combination of augmented, virtual, and mixed reality – will become a key medium for social and business engagement” (Impact News Service, October 30, 2021)	What is the metaverse? And why should we care?	USA
	“Looking Glass Labs is a digital platform specializing in non-fungible token architecture, immersive extended reality metaverse design, and virtual asset royalty streams” (Proactive Investors (NA) January 4, 2022)	Looking Glass Labs says its subsidiary House of Kibaa joins DigiBC to further its NFT and metaverse opportunities in British Columbia	USA

**Table A2.**  
2nd order theme,  
illustrative quotes, title  
and country

(continued)

2nd order themes	Illustrative codes from first order data	Title	Country
e. VR	“I think it is smart thinking by the company as the rebranding is of the parent company and not of individual brands. It positions the company as one which is looking at harnessing the opportunities that metaverse presents by creating a holistic and immersive experience for consumers deploying AI, VR, AR and new Internet technologies that are seeking to blur the divide between physical and virtual worlds” (Ad Gully November 1, 2021)	Facebook’s transition to Meta: A bold and ambitious move, say experts	India
f. AR	“NAR Solutions is a metaverse company that develops and operates augmented reality (“AR”) platforms, transporting three-dimensional (“3D”) product visualizations, human holograms and 360° portals to its audiences, altering e-commerce, digital advertising, hybrid virtual events and learning and training experiences in AR” (Business wire December 21, 2021)	Nextech AR Signs Multi-year Virtual Event and Marketplace Contract With Restaurants Canada	Canada
	“And as we look beyond to augmented reality and rethinking the mall virtually, on how you’re approaching the metaverse as well” (Fair Disclosure Wire, February 22, 2022, Page 284)	Does Facebook, er Meta, now need stores	USA
	“Nextech AR Solutions is a Metaverse company that develops and operates augmented reality (“AR”) platforms, transporting three-dimensional (“3D”) product visualizations, human holograms and 360° portals to its audiences’ (Business Wire March 29, 2022 page 2)	Nextech AR Signs Multi-year Virtual Event and Marketplace Contract With Restaurants Canada	USA
g. Blockchain integration	“By leveraging extended reality, blockchain, and artificial intelligence technologies, we aim to create a metaverse that focuses on the principles of create, experience, and share which enhances the human experience” (News Shopper January 19, 2022)	Company uses virtual reality and “opens the door to new metaverse city”	USA
	“The Radio Caca USM Metaverse will jointly design and develop various concepts and cooperation with ITU and METU Blockchain Community on the following aspects” (GlobeNewswire release, February 11, 2022 page 2)	Cambridge University Blockchain Society Partners with Radio Caca (RACA) to Build Metaverse Education	UAE

Table A2.

(continued)



2nd order themes	Illustrative codes from first order data	Title	Country
h. NFTs	“. . . To a certain extent, this may rely on non-fungible tokens (NFTs) as the foundation for value creation” (Impact News Service October 30, 2021)	What is the metaverse? And why should we care?	USA
	“Another aspect of blockchain and cryptocurrency will be key in the metaverse: nonfungible tokens (NFTs) as the foundation for value creation” (Business Day (South Africa), December 7, 2021 page 2)	The metaverse: welcome to the next online frontier	South Africa
	“As an expansion of that platform, the firm will also make a Non-Fungible Token (NFT) alongside each investment” (PR wire April 1, 2022 page 2)	Mogo Announces Expansion into Metaverse with Investment in NFT Trading Platform NFT Trader	USA
i. Social and business engagements	“Central to the concept of the metaverse is the idea that virtual, 3D environments that are accessible and interactive in real time will become the transformative medium for social and business engagement” (Impact News Service October 30, 2021)	What is the metaverse? And why should we care?	USA
j. New entrepreneurial opportunities	“As we build for the metaverse, we’re focused on unlocking opportunities for creators to make money from their work” (The Nation (Nigeria), November 21, 2021)	Meta plans to take a nearly 50% cut on virtual asset sales in its metaverse	NIGERIA
	“StarHub’s investment has put us on a better footing and brought new opportunities for value creation,” (Edge Singapore April 4, 2022, page 2)	Cover Story: Countdown to IPO	SINGAPORE
k. Digital transformation	“Siemens and NVIDIA share a common vision that the industrial metaverse will drive digital transformation” (Cityam.com, October 21, 2022)	Siemens and NVIDIA partner to build the Industrial Metaverse	UK
	“The digital transformation of government offers a historic opportunity to build a whole ecosystem of investment, innovation and services and business systems that frames the public sector as a key economic player” (AFR online March 22, 2022; Page 5)	The case for a ministry for digital	AUSTRALIA
	“Blockchain allows metaverse users’ and applications’ data to be stored on its decentralized database management solution” (ACCESSWIRE, March 30, 2022)	Inery Introduces Cross-Chain Database Management in the Web3 Metaverse Space	USA

*(continued)***Table A2.**

2nd order themes	Illustrative codes from first order data	Title	Country
l. Return on investment	“This thinking transforms government from being a cost centre, managing the steam trains, to a far more dynamic model as a platform for growth and real value creation” (AFR online March 22, 2022; Page 5)	The case for a ministry for digital	AUSTRALIA
m. Strategic initiatives	“The company continues to innovate and implement strategic initiatives to increase the adoption of blockchain technology and advance its Social Network+ and metaverse initiatives” (West Corporation, Apr 26, 2022)	DatChat Enters Metaverse Development Joint Venture with MetaBizz	USA
	“We continued our strategic initiatives to drive penetration of our future-proof AVANCE platform with a 46% increase in installed base in 2021” (Fair Disclosure Wire, March 3,2022 page 2)	Q4 2021 Gogo Inc Earnings Call – Final	USA
n. Social media presence	“Persistence (no obvious “on”s or “off” to access), synchronicity (existing in real-time) and interoperability, as well being populated by content and experiences by both individuals and businesses” (Impact News Service October 30, 2021)	Characteristics and Challenges of the Metaverse	USA
o. Interoperability	“While the NFT world is incredible, it is still evolving, and we saw a gap in the market to build a community and create a transparent exchange that allows people to make a real social impact via the metaverse” (PR Newswire, October 28, 2021 page 1)	SEVA.LOVE, a Transformational Platform for Good, is Powering NFTs and the Metaverse on the Hedera Network	USA
	“Three key aspects are said to exist within the metaverse: presence, interoperability, and standardization” (News Bites – Western Europe: United Kingdom April 28, 2022)	The Three Key Aspects of the Metaverse	UK
	“As more established gaming companies begin to explore the metaverse, Borget insisted that the core of the metaverse remained decentralization, interoperability and creator-generated content” (Forkast.News February 18, 2022, page 2)	Sandcastles in cyberspace and the rise of the metaverse	Korea

Table A2.

(continued)

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2nd order themes	Illustrative codes from first order data	Title	Country
p. Product simulation	"MCB can simulate and refine manufacturing processes infinitely in the Microsoft Cloud before bringing them to the shop floor to enhance efficiency and minimize its environmental impact amid constant change and uncertainty" (Just-auto global news, October 12, 2022)	Mercedes-Benz and Microsoft Collaborate to Boost Efficiency, Resilience and Sustainability in Car Production	Indonesia
	"Roblox capitalized on the draw of metaverse and its own strength of user base by hosting exclusive product launches from luxury fashion brands" (Globe Newswire, February 22, 2022 page 2)	Global Metaverse Market to Reach US\$758.6 Billion by the Year 2026	Canada

Source(s): Author's own elaboration

Table A2.

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#### Corresponding author

Sascha Kraus can be contacted at: [sascha.kraus@zfk.de](mailto:sascha.kraus@zfk.de)

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