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BerkeleyHaas
Haas School of Business
University of California Berkeley

The Diffusion of the Metaverse:

How YouTube Influencers Shape Mass Adoption

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Fabian Tingelhoff[1], Sebastian Klug[1], and Edona Elshan[2]

SUMMARY

The metaverse, although yet to be fully realized, offers a compelling vision: a scalable and interoperable ecosystem of virtual worlds that can be simultaneously accessed by multiple users using continuous, user-generated, and embodied identities (i.e., avatars). Since the metaverse will likely achieve widespread user adoption once innovators and early adopters recognize its values, it must evolve in a direction that appeals to these groups. However, it remains unsure what aspects of the metaverse innovators perceive as opportunities and challenges when engaging with early adopters. This article describes the opinions of users who influence the metaverse's mass adoption, clarifying their perception of what already works well, holds high potential, and presents challenges. By synthesizing and critically evaluating this information, the article offers guidance for the future development and use of the metaverse and provides insights concerning its diffusion in society.

KEYWORDS: metaverse, adoption, value creation, innovation focused strategy

The metaverse, a technological innovation hailed as "the future *of* the internet,"[1] is a multi-user virtual platform that leverages Web3 technology to revolutionize human interactions in any context.[2] For example, decentralized ledger technologies (DLTs; e.g., blockchains) enable the user-to-user exchange of value objects; virtual reality headsets create new immersive experiences that defy our understanding of physics; augmented reality interfaces empower users by overlaying virtual information into their physical environment; and self-sovereign and interoperable identity technologies transfer a person's identity into the digital sphere. By integrating these Web3 technologies, the metaverse emerges as a parallel society and economy, unlike

[1]University of St. Gallen, St. Gallen, Switzerland
[2]Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

other virtual environments.[3] However, its ever-evolving nature and underlying technologies have sparked curiosity among scholars regarding its adoption by users and organizations.[4]

For all its promise, the metaverse remains at a pivotal juncture. Its success hinges on widespread adoption, which is inextricably tied to how it is perceived and embraced by its earliest users—a phenomenon aptly captured by the diffusion of innovation theory.[5] In the realm of technological innovation, the metaverse stands out. However, as the diffusion of innovation theory highlights, its mainstream acceptance is heavily contingent upon the perceptions and endorsements of its innovators and early adopters. Essentially, their reception—be it positive or negative—can shape its trajectory. To ensure mass adoption, the metaverse must align with the aspirations and concerns of these influential groups. Given their pivotal role, understanding their perceptions—their aspirations, apprehensions, and experiences—becomes not just academically intriguing, but socially crucial. Such insights can guide technological refinements, inform stakeholder decisions, and help preempt potential challenges, making the diffusion process smoother and more efficient. This leads to the questions: what type of value do content creators communicate when exploring and interacting in the metaverse? and what implications does this have for organizational strategies and future brand engagement in the metaverse?

To address this question, we turned to YouTube—one of the largest platforms influencing technology trends and adoption worldwide. Given the metaverse's digital nature, the YouTube platform, renowned for its vast reach and influence, has become an indispensable resource. Its content creators, commonly referred to as YouTubers, often play the role of innovators and early adopters.[6] They not only review and introduce emerging technologies but also shape perceptions and attitudes among their vast audiences. By analyzing the discourse on this platform, we gain insight into the perceptions of those at the forefront of introducing the metaverse to a broader audience. We studied 99 YouTube videos related to existing metaverse platforms, with a total duration of over 31 hours and 119.4 million cumulative views. Our analysis followed a systematic, replicable, and transparent procedure[7] to minimize biases, using Sheth, Newman, and Gross's five distinct value dimensions (functional, social, emotional, epistemic, and conditional) as a basis for our qualitative content analysis.[8] We employed ATLAS.ti software to analyze the transcribed videos using a structured approach for qualitative research.[9] Through its execution, our study contributes to the theoretical and practical understanding of metaverse adoption in several ways.

- We derived user value perceptions from the YouTube videos and gained insights from opinion leaders. Our analysis reveals the opinions of users who influence the metaverse's mass adoption, clarifying their perception of what already works well, holds high potential, and presents challenges. By synthesizing and critically evaluating this information, we provide three insights concerning its diffusion in our society.[10] For example, conditional, epistemic,

and emotional values draw users to the metaverse, while functional and social values are essential for its broad adoption.

- How should brands market and retail in the metaverse? By evaluating the responses of the currently most influential customers, we offer guidance for a brand's value exploration and exchange in the metaverse. Precisely, we follow Yoo, Welden, Hewett, and Haenlein's call and investigate how brands can communicate value differently compared with other digital platforms and how the metaverse's nature influences customers' reception of brand communication.[11] For instance, customers appreciate brands' showcasing that their metaverse endeavors are long-term investments to provide value to their communities.
- Finally, we weight the resulting factors according to which influence YouTubers and, in turn, their followers value most significantly. The resulting framework guides managers in product creation by uncovering and ordering customer expectations.[12] For example, users prefer it if a brand provides social activities and exchanges around their products compared with offering status symbols, for example, through exclusive non-fungible tokens (NFTs).

Metaverse: Unveiling User Value and Adoption Dynamics

Unraveling the Metaverse

According to Ball, although the metaverse is yet to be fully realized, it offers a compelling vision: a scalable and interoperable ecosystem of virtual worlds simultaneously accessible by multiple users through continuous, user-generated, and embodied identities (i.e., avatars).[13] However, no consensus exists regarding what the final version of the metaverse will look like.[14] Moreover, the development of metaverse platforms is still affected by technological and financial limitations (e.g., in computing power or high adoption costs of VR technology).[15] Hence, what is currently characterized as "metaverse" is more often a transitory step toward becoming a fully functional metaverse platform, as these are characterized by four main criteria in the retailing context.[16]

- They constitute ecosystems where the actors rely on *online collaboration* to catalyze their digital value creation.
- They reduce the user's perception of technological mediation by integrating *immersive technologies*.[17] These include, for example, AR interfaces, which superimpose digital objects onto the physical world, or VR headsets, which fool the user's senses into believing they are present within a virtual environment.[18]
- They facilitate the creation and exchange of *unique digital value objects* through DLTs.[19] Currently, blockchain technology is the only one capable of deterministic digital ownership and secure transactions.[20]
- They empower users to create their personal digital representations in the form of *digital avatars*, which can interact and socialize with each other.

FIGURE 1. Metaverse brand offerings of Nike (left) and Coca-Cola (right).[23]

Many metaverses currently do not suffice all four characteristics, especially those on immersive technologies, and unique digital value objects are not always represented. Hence, metaverses can look quite different, leading to diverging ways organizations use the metaverse for brand communications. For example, Nike created Nikeland on Roblox, an interactive world inspired by its headquarters, where visitors can play mini-games and engage in a sport-focused lifestyle.[21] The emphasis in Nikeland is on VR-based interactive experiences. Users can customize avatars with Nike gear and share outfits in the game's showroom. This virtual experience mirrors the real world by encouraging physical movement in games. Unlike Nike, Coca-Cola followed a product-centric approach, venturing into Decentraland. They used blockchain technology to create and auction NFTs, such as the "Friendship Box" celebrating International Friendship Day.[22] The auction of these NFTs on the Decentraland platform highlighted the use of blockchain for securing digital ownership and creating unique brand experiences. While Nike's brand communication focused on enhancing customer engagement through interactive and personalized digital experiences, Coca-Cola's use of blockchains demonstrates a focus on leveraging digital collectibles to enhance brand value and engage with consumers in a novel way. This approach differs from Nike's by emphasizing unique digital memorabilia over interactive experiences. Figure 1 shows screenshots from these two brand communications.

Decoding the Theory of Consumption Value for the Metaverse

The rise of the metaverse as a new technological frontier has piqued both consumer interest and academic curiosity. While its technological allure is evident, understanding its adoption dynamics requires diving into user-perceived values. The Theory of Consumption Value (TCV) denotes that perceived value influences a consumer's usage behavior of a given product, service, or technology.[24] Furthermore, past studies used the TCV to link value perception and system usage.[25] Thus, this study underscores the significance of perceived

user value in influencing usage behavior for innovations like the metaverse. Historically, many innovations have failed to garner mass adoption, not because of their technological inferiority but because of the lack of perceived value among potential adopters. To gauge the multifaceted values that users derive from the metaverse, we employ the five value dimensions elucidated by TCV: functional, social, emotional, epistemic, and conditional values (see Table 1). These dimensions allow us to dissect the metaverse's varied value propositions, from its functional utility and potential for social interactions to its emotional allure, novelty factor, and situational benefits.[26]

To analyze the user value generated by the metaverse, we applied the three principles of Sheth, Newman, and Gross: user value is a function of multiple value dimensions; the value dimensions provide differing contributions in any given user situation; and the value dimensions are independent of each other.[27] The metaverse, in its essence, embodies all these characteristics, offering not just a technologically advanced platform, but a space that can elicit strong emotions, cater to social needs, pique curiosity, and provide conditional benefits based on user-specific contexts.

The Relevance of the Theory of Diffusion of Innovation to the Metaverse Context

While understanding user value is crucial, examining how it translates into adoption dynamics is equally vital. The theory of diffusion of innovations outlines the mass adoption process of technological innovations within a social system over time. It clusters the population into adopter categories based on their first time of adoption. Innovators, composing the first 2.5% of adopters, possess the highest willingness to spend and the lowest risk aversion. They test innovations and offer feedback; they often act as opinion leaders or influencers, shaping their followers' perceptions and usage behaviors. Based on their recommendations, early adopters (the first 13.5% of the population) come next, who introduce the respective innovation to their social communities. Only when both innovators and early adopters have adopted a technology can it "cross the chasm" to reach the early majority (first 34%) and achieve mass adoption.[28]

In the metaverse context, YouTubers can be seen as taking on the role of innovators. Pioneering YouTubers dive into new metaverse platforms early on, providing detailed impressions and feedback akin to innovators, and introducing and popularizing these innovations to their broad audiences. As opinion leaders with significant online reach, their collective influence can shape the adoption, design, and specification of emerging metaverse platforms. Their interaction with their viewers, who, depending on their time of adoption, often represent a mix of early adopters and the early majority, can substantially impact the direction of metaverse platform developments and their likelihood of achieving widespread adoption.[29]

By considering the interplay between these two theories, our study seeks to provide a comprehensive analysis of the metaverse's user value and its adoption

TABLE 1. Definitions of the Value Dimensions of the Theory of Consumption Value.

Terminology	Definition (Based on Sheth, Newman, and Gross)	Examples
Functional Value	. . . refers to the practical benefits derived from a product or service's ability to perform its intended functions effectively. Functional value emphasizes the tangible aspects of an option, such as its features, usability, and efficiency, that contribute to its utility in fulfilling specific tasks or needs.	In a virtual clothing store, your avatar can try on clothes to see the fit and whether it combines with your skin tone. This reduces returns and increases the likelihood you are satisfied with your purchase.
Social Value	. . . refers to the perceived worth or status one gains from associating with certain social groups using a product or service. Social value reflects how an option can enhance one's social image, align with group norms, or connect with specific cultural, demographic, or socioeconomic identities.	In Roblox-themed worlds, you can meet people with shared interests. This helps you to join a highly localized community and find new friends.
Emotional Value	. . . refers to the emotional satisfaction or affective fulfillment a person gains from an option. Emotional value encompasses the feelings and emotional states that arise from using a product or service, such as joy, excitement, or a sense of well-being, and how these emotions contribute to the overall value of the choice.	On Roblox, you can play many different competitive and cooperative mini-games. This can provide you with fun and entertainment.
Epistemic Value	. . . refers to the intellectual stimulation and knowledge enrichment offered by a product or service. Epistemic value includes the excitement of discovery, the satisfaction of curiosity, and the pleasure of learning new things, highlighting how an option can provide cognitive or intellectual benefits.	Through the art exhibits on Decentraland, you can learn and experience new, undiscovered artists. This can intellectually stimulate your curiosity.
Conditional Value	. . . refers to a product or service's added worth or suitability in specific situations or under particular conditions. Conditional value acknowledges that the value of an option can be heightened or modified by the context in which it is used, such as environmental factors, social settings, or personal circumstances.	As a mentally disabled person, you could learn life skills (e.g., ironing your clothes) without the risk of physical harm. Thereby, the metaverse can ease your life with your specific needs and conditions.

trajectory. We elucidate how user-perceived values, as explained by TCV, influence adoption patterns and dynamics inherent in the diffusion of innovations.

Identifying Value Propositions and Challenges in the Metaverse: Insights from a YouTube Content Analysis

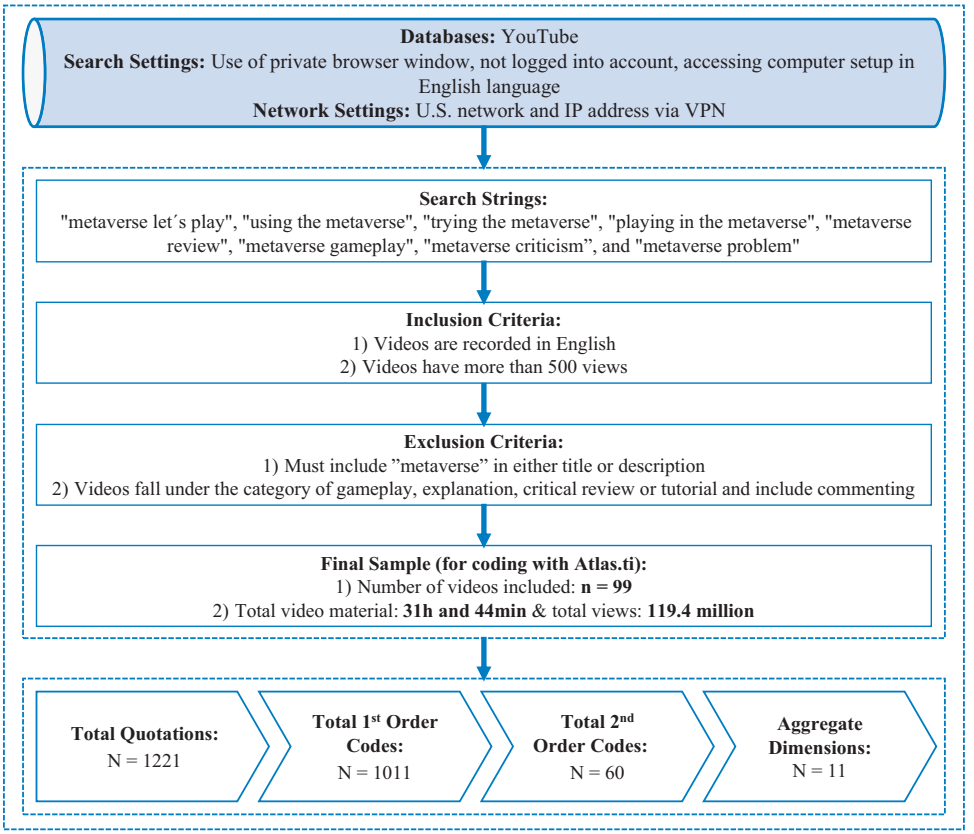
To gain insights into users' experiences and perspectives on the metaverse, we comprehensively reviewed selected YouTube videos, which involved streams, reviews, gameplays, and other informative videos related to the usage of metaverse platforms. To evaluate the existing metaverse platforms, we focused on YouTube content creators, such as streamers and gamers, who possess the necessary expertise and experience. Their content contributes to disseminating the metaverse concept within the social system, influences the perceptions of millions of viewers, and accelerates the diffusion process.[30] Furthermore, YouTube's popularity and growing academic attention make it a suitable source for researching users' value perceptions and potential future value propositions in the metaverse.[31]

We analyzed user-generated YouTube content uploaded before September 2023 by adopting a systematic and structured approach inspired by systematic literature reviews.[32] Our search process involved using various search strings to identify the relevant videos, taking measures to ensure transparency and reproducibility, and preventing data collection bias.[33] Specific inclusion criteria were applied to filter the search results and exclusively focus on content that met our objectives.

The selected videos were analyzed using a structured coding approach for qualitative analysis with ATLAS.ti software, as it is well crafted "for qualitative data analysis, particularly for large . . . visual and audio data."[34] We followed the principles of grounded theory.[35] This coding process involved three steps: creating first-order codes via open coding and screening the transcriptions and labeling the relevant quotations; creating second-order themes via axial coding and merging the codes and allocating them to subcategories; and identifying the aggregate dimensions (third order) and choosing the core groups and categories to consolidate and interlink the results. Figure 2 illustrates our YouTube content analysis process.

Following these steps, we conducted iterative consensus discussions to refine and agree upon the labels and categorization of codes. All three authors coded overlapping sets of YouTube videos independently, along with their value factors. Whenever the codes diverged, the three authors discussed the discrepancies in team meetings until all three authors agreed on the applied code. To mitigate potential biases during the coding phase, all coding authors met before the coding started and were made aware of potential biases. Hence, during coding discussions, the authors held each other accountable for substantiating opinions on codes with direct quotations or supporting data from the YouTube videos. Thereby, the research team aimed to ensure the validity and credibility of coding

FIGURE 2. Process of YouTube content analysis.



results. We provide further details on how we secured the reliability and validity of our analysis in the Appendix, titled Method Deep Dive.

We analyzed 99 videos, totaling 31 hours and 44 minutes, that garnered 119.4 million views. The coding process with ATLAS.ti yielded 1,221 quotations and 1,011 first-order codes, which we subsequently reduced to 60 second-order codes (which we call value factors) and, finally, 11 aggregate dimensions (which we call value themes). Online Supplemental Appendix B provides a detailed overview of the analyzed videos, including their primary descriptive attributes (i.e., title, publishing date, YouTuber's name, and so on), categorization, and the metaverse platform discussed.

While our methodological approach harnesses the deep insights provided by YouTube influencers, it is imperative to acknowledge its inherent limitations. As expounded in our discussion of the theory of diffusion of innovations, innovators and early adopters—often represented by influencers like YouTubers and their followers—play a pivotal role in the adoption process of a new technology. They test, critique, and popularize these innovations, offering an invaluable lens through which we can understand the perceived values and challenges of a novel technology like the metaverse. However, they represent a specific subset of the

user community—often characterized by a more profound familiarity with and immersion in the technology than the average user.[36] By focusing primarily on these influencers, we might inadvertently overlook the nuanced perspectives and reservations of late adopters and laggards. These groups are crucial in the complete diffusion of technology within a social system.

Consequently, a range of perspectives, value propositions, and barriers may not necessarily be illuminated through this content analysis. Particularly, the views and concerns of casual users or non-adopters, who might interact with the metaverse differently or have distinct reservations about adoption, may not be adequately represented in our sample. It is essential to consider these nuances when interpreting our findings and extrapolating broader implications.

Metaverse User Value and Adoption Dynamics: Results Derived from YouTube Analysis

The review of the YouTube videos resulted in 60 unique value factors, of which we assigned 14 to multiple categories since they create user value on various levels (resulting in 74 overall factors). An overview of the coded value factors (italicized in the text)—including the number of mentions (recorded in brackets), sources, exemplary citations (explanation), and the categorization into the five value dimensions—can be found in Online Supplemental Appendix C. With 33% of the value factors, functional value has the most significant representation in the results, followed by social value with 32% and emotional value with 25%. With only 6% and 3% of all quotations, respectively, epistemic and conditional values received little attention. This can be because epistemic value stems from the novelty of using a technology. We assume that the YouTubers might perceive epistemic values as unsustainable and thus disregard them in their analysis. Another explanation could be that the YouTubers' prior usage of the technology in the research phase for their videos might have weakened their epistemic impressions. Conditional values mainly concern time-specific events. However, as the YouTubers in our videos predominantly reviewed general features and offerings in the metaverse, conditional values might not have been their current focus. These circumstances might have resulted in the YouTubers paying less attention to both value categories in the videos. An overview of all value factors, ordered according to their relevance within each value theme, is present in Figure 3.

How the Metaverse Enables New Functionalities

Functional value was the most mentioned user value dimension. The YouTubers cited its 24 value factors a total of 592 times in most of the included videos. This finding highlights the importance of developing and improving the functionalities offered by metaverse platforms to attract and retain users.

In the first value theme, we address the specific functions of the metaverse, which was the core focus of the analyzed videos. Apart from allowing users to

FIGURE 3. Overview of metaverse value factors (ordered according to their relevance within each value theme).

Metaverse Value Components: YouTube Content Analysis

Value Dimensions	Aggregate Dimensions (Value Themes)	2nd Order Codes (Value Factors)
Functional Value (24)	**Specific Functions** (56%)	DeFi Applications (85) | Gameplay (60) | Content Creation (45) | Activities (36) | Working (30) | Competitions & Rewards (26) | Virtual Assistance (14) | Simulation (12) | Education & Reading (12) | Collaboration Space (12)
	Technological Factors (18%)	NFTs as Virtual Items (38) | Improving Technology (36) | Integrated Technologies (16) | Easy & Multifaceted Controls (15)
	Realization & Display (17%)	Economy & Ecosystem (55) | Embodied Presence (13) | Quality & Realistic Implementation (11) | Digital Universe & World (10) | Multiple Worlds (10) | Gamification (4)
	Attributes facilitating Functionality (9%)	Personalization & Freedom (19) | Customization (17) | Interoperability (9) | Easy Access (7)
Social Value (23)	**Social Groups** (31%)	Content Creation (45) | Community Creation (27) | Embracing Culture (24) | Creator Community (17)| Ownership (17) | Group Diversity (11) | Exclusivity for NFT Holders (7) | User Governance (6) | Open Access (6)
	Social Interaction (31%)	Social Activities (105) | Place for Social Interaction (34) | Realism of Social Interaction (15) | Gamification (4)
	Self-Expression (28%)	Feeling & Expressing Emotions (86) | Self-Expression & Representation (36) | Psychological Safety (16) | Status Symbols (3)
	Social Life (10%)	Virtual Dating (17) | Friendship & People (15) | Integration of Brands & Businesses (10) | Virtual Life (7) | Integration of Celebrities (2) | Guidance (2)
Emotional Value (18)	**Entertainment & Experiences** (50%)	Enjoyment & Fun (88) | Gameplay (60) | Curiosity & Excitement (28) | Competition & Rewards (26) | Entertainment (20) | Virtual Dating (17) | Digital Universe & World (10) | World without Constraints (7)
	Self-Determination & Safety (40%)	Feeling & Expressing Emotions (86) | Self-Expression & Representation (36) | Personalization & Freedom (19) | Customization (17) | Psychological Safety (16) | Decentralization & Independence (16) | Virtual Assistance (14)
	Realism of Virtual Experience (10%)	Realism & Immersion (32) | Embodied Presence (13) | Spatial Awareness (2)
Epistemic Value (6)	**(no categorization)**	Curiosity & Excitement (28) | Education & Reading (12) | Exploration Worlds & Environments (11) | Increased Creativity (11) | Escapism (6) | Future Potential (3)
Conditional Value (3)	**(no categorization)**	Time-specific Events (29) | Seasonal Offerings & Themes (4) | Freedom for Disabled People (1)

play games and create their own content, the most prevalent identified functional value factor is the integration of decentralized finance (DeFi) applications, which facilitate monetizing the numerous activities available in the metaverse. Everything from education to working can be linked to competition, achievements, and rewards, such as the completion of challenges, being monetarily rewarded for specific accomplishments, and playing games to earn cryptocurrencies. While these factors have also been observed in other digital environments, metaverse environments seem especially prone to gamification, which is uniquely enabled by DLTs.[37] As observed for some of the studied metaverse platforms, blockchains (one specific DLT) allow direct and automatic interaction between the respective activity (e.g., gaming or working) and an integrated cryptocurrency wallet (e.g., MetaMask)(VID 10, 20, 43). This enables unique metaverse features, such as Play-to-Earn applications, which are built on blockchain-based automation to recognize a player's progress and automatically award a unique digital NFT or cryptocurrency.[38] This financial empowerment appealed to many YouTubers, with one stating the following: "For the first time ever, you don't pull out your wallet to pay to play but pull out your wallet to get paid to play." The prominence of these specific functions in the videos suggests that users are particularly drawn to unique features that differentiate the metaverse from other digital environments. Accordingly, our YouTube content analysis supports how the metaverse facilitates user value creation.

In addition, the YouTubers identified the metaverse's purpose for simulation, collaboration, and education multiple times. The simulation of real-life activities, objects, and events promotes the interactive nature of the metaverse, creating new ways of collaborating and educating. Indeed, education is one of the most researched aspects of the metaverse. Studies show that switching one's geographical location or traveling in time instantly provides new forms of interactive and immersive learning.[39] Innovative functions (i.e., virtual assistance, 14) further support interactivity, whereby the metaverse is continuously improving to digitalize various activities in our everyday lives. For example, many of the reviewed videos mentioned working in the metaverse—that is, working remotely in a virtual space or even being directly employed in the metaverse (as, for instance, a guide or support member). By offering novel experiences and opportunities, metaverse platforms can better engage users and encourage them to invest time and resources in the virtual world.[40]

The second value theme consists of the technological factors that promote functional value creation in the metaverse. Like with specific functions, decentralized capabilities dominated the YouTubers' value impressions. In particular, as suggested by recent studies, the realization of in-game items and building blocks via NFTs seems to provide user value by enabling not only the ownership and tradability of virtual goods but also their representation and symbolic value as such.[41] In this context, the YouTubers emphasized the excellent integration of other technologies, such as social media (e.g., Discord) or individual metaverse-based platforms (e.g., your own The Sandbox Account), as these facilitate functional value in terms of improved connectivity and the continuity of relevant user

data. Combined with the metaverse's easy and multifaceted controls, its technological composition can provide a solid infrastructure that builds the foundation for realizing functional value in the metaverse. The findings, thus, highlight the importance of constant innovation and development in the metaverse to maintain user interest and satisfaction.

Furthermore, the continuous improvement of technologies was a recurring theme in the videos, emphasizing the dynamic nature of the metaverse and its growth potential.[42] Though presently, the functionality of the metaverse might be limited, most users see its future potential and express satisfaction regarding its development speed, constant updates, quality improvements, and evolving functions. In this context, one YouTuber mentioned the following:

> It has potential, right? It's still in its early days; I'm sure that when it's in its full game version, like the alpha version or the final version of the game, then I think that the game will be pretty amazing.

The third value theme includes value factors related to realizing and displaying the metaverse. Foremost, as personalized avatars represent users, the affordance of embodied presence facilitates a more immersive and emotionally arousing user experience.[43] This is the foundation of the metaverse to constitute a complete and self-contained economy and ecosystem. Users can gain access to a digital universe and world with similar opportunities, activities, and experiences to the real world without any limitations concerning their person, time, and space. This, in essence, implies that the metaverse can become a full-fledged virtual copy of the real world and develop to the extent of integrating different worlds within one ecosystem.[44] From a user perspective, this provides value through the provision of additional opportunities and functions concerning almost all areas of life (e.g., work, relationships, activities, and so on), as a user can do "pretty much everything that you would do in the real world." As mentioned above, the present state of the metaverse realizes these additional opportunities mainly through gamification and building a space for social interactions. At the same time, over one-half of the reviewed videos can be categorized as gameplay. Ultimately, the increasingly good quality and realistic implementation support the quality of user experiences in metaverse platforms and strengthen their functional value proposition to users.

The last value theme concerns the attributes and characteristics of the metaverse that facilitate functional user value. Our YouTube content analysis confirmed most of the essential value factors of this category, including *personalization*, *customization*, *interoperability*, and *accessibility*. Personalizing and customizing contents in the metaverse, for example, one's avatar, results in metaverse experiences approximating the individuality of real life.[45] Furthermore, making the metaverse accessible through several interfaces (such as desktop computers and smartphones), as well as enabling an easy transfer of assets and data between metaverse platforms, allows for constant and unlimited interaction between users.[46] As a result, the metaverse can only provide functional value through its open and

accessible nature, interoperability, and user empowerment. One YouTuber illustrates this: "We've seen with The Sandbox in particular, with creators coming through and being able to make it open to everybody to be able to create NFTs, to be able to have fun, and actually make some profits from those." Accordingly, metaverse platforms should prioritize these aspects to ensure that they cater to a diverse range of users and offer satisfying and engaging experiences.

How the Metaverse Improves Social Communication and Interaction

Social value was found to be the second-largest value dimension. In total, we identified 23 unique value factors that were, overall, cited 511 times. Of the quotations, 31% each concern social groups and social interaction, 28% deal with self-expression, and 10% with the category of social life.

In the first value theme, we found that metaverse users engage virtually as *content creators*, *co-owners*, and *governors*, which allows them to be associated with particular stakeholder groups and *create communities* around specific metaverse projects. This finding highlights the importance of fostering a sense of belonging and encouraging user participation in the metaverse platforms to unlock social user value.[47] Having *open* and *easy access* to the metaverse itself, as well as to all its resources, overcomes discrimination and creates *incentives* for the *formation of communities.* These communities sometimes preserve their exclusivity by offering *access only for NFT holders*. In correspondence with the real world, exclusive memberships also create some form of social value, even if they are just for a minority of users. However, in most cases, the metaverse remains accessible to everyone and *embraces a culture* of inclusion, unlocking social user value by driving the formation of social groups and communities.[48] One YouTuber stated the following: "I do believe, and especially as creators ourselves, I do believe we're going to develop deeper connections with our community."

The second value theme found that the metaverse constitutes a *place for social interaction* and enables its users to engage in *social activities* of any kind (e.g., meeting friends, having parties, hanging out, and playing games together). Considering the number of quotations, social interactions received the most attention of all value factors along all dimensions. In this context, the emphasis on *realistic* and *gamified* social activities suggests that users specifically value immersive and engaging social experiences in the metaverse. Past research has shown that the metaverse's unique real-world-like communication tools lead to new online interactions that, in turn, lastingly impact social relationships beyond the internet.[49]

Within the third value theme, *feeling and expressing emotions* stands as one of the most important social value factors. In the perfect metaverse, by immersing in the virtual environment, users have endless opportunities to meet new people seamlessly and fearlessly without being aware of any difference from reality. Therefore, users can open up to real-world-like experiences they would not encounter in the physical world. For example, one YouTuber referred to the metaverse as "a really great way for people to meet others if they don't feel comfortable

in real life." This implies that, as of now, the metaverse is a safe space that empowers people to make experiences outside their usual comfort zone, resulting in unique social (and emotional) values for its users.

Psychological safety also supports the freedom of *self-expression* and *representation*. The metaverse enables its users to experiment with their identity, creating "freedom to reinterpret ourselves in any way we want that is not bound by physical laws." For example, research showed that virtual environments empower people to experience life as a different gender more realistically than possible in the physical world, and without invasive operations in one's body.[50] This finding underscores the need for metaverse platforms to provide a safe and inclusive environment for users to express their identities without fear of prejudice or social anxiety. In addition, the YouTubers also transferred other societal conventions to the virtual world, including *status* and, more generally, the aspiration to be liked by others. Many people seek social attention and validation through certain actions in the metaverse, potentially creating social value upon receiving this form of confirmation (e.g., showing off NFTs as a status symbol). However, research also suggests that intensifying this desire can have negative consequences, as people might find it easier to establish social dominance and suppress other users in virtual spaces.[51]

The last value theme consists of value factors that focus on how the metaverse reshapes interactions across stakeholder groups to influence its users' social lives. Even more than *meeting and making friends*, YouTubers used the metaverse as a new means of *virtual dating*. While some referred to dating in the metaverse sarcastically, most highlighted the metaverse's superiority when dating on the internet:

> I think, from my own experience, you know, dating apps, they can feel really shallow and superficial. And when you're limited to just the real-life location, you don't get to meet a lot of people. [In the metaverse,] you could, for example, [find people] around the world. Some people find that it's easier to communicate in VR as it's a little less pressure in the comfort of your own home.

Besides, the metaverse is focused not only on enabling social interactions but also on *integrating brands and businesses* and *celebrities*, mirroring the users' real-world experiences as closely as possible. More specifically, this implies that users can, to some extent, create their own *virtual life* and transfer some of their social experiences and activities from reality to VR. The integration of brands and businesses, as well as the potential to transfer and enhance real-world social experiences, highlights the metaverse's potential to play a substantial role in their users' social lives. This results in a virtual world "where users will live inside a digital universe, where you can meet your friends, find new people, or do business."

How the Metaverse Elicits Emotions in its Users

In addition to social value, the YouTube content analysis found several emotional value factors. Out of 463 quotations, 18 unique value factors remained and built the core of emotional user value in the metaverse. Specifically, 50% of the quotations concern entertainment and experiences in the metaverse, while 40% are related to self-determination and safety, and 10% address the realism of virtual experiences in the metaverse.

Within the first value theme, *enjoyment* and *fun* are major factors that create emotional user value by evoking positive emotions but also *curiosity and excitement*, indicating the importance of designing engaging and immersive experiences. In this context, the metaverse is considered a playground for *gameplay* and *entertainment* in a virtual *world without constraints*. Moreover, we found that users consider the metaverse a full-fledged virtual world. Accordingly, the affordances and capabilities of the metaverse go beyond pure entertainment and integrate opportunities regarding *competitions*, *achievements*, and *rewards.* In fact, money-related motivators often drive people to monetize activities and experiences. These functionalities are uniquely facilitated by DLTs and can generate even greater emotional arousal.[52]

In the second value theme, the identified value factors highlight the significance of *self-expression* and *representation* as well as the possibility to *personalize* and *customize* experiences. Furthermore, the personalization features empower users to determine and influence their personal appearance and, in turn, others' perceptions, potentially tackling discrimination and reinforcing the users' feeling of *safety* and comfort during social interactions.[53] The *decentral* and *independent* nature of some metaverse platforms further supports this. The absence of a central party in charge or ownership (e.g., Decentraland) reduces the need for trust in certain stakeholders. It also empowers users to control their personal data, emphasizing the role of privacy and data security in emotional user value. Accordingly, decentralized platforms restore anonymity and overcome privacy issues, allowing users to freely express themselves without revealing their personal identity. In addition, *virtual assistance* within the metaverse can provide further safety and security. Most explored metaverse platforms include live tutorials, guides, or instructions. In contrast, some even include a safe zone that users can enter anytime they feel uncomfortable.

The last value theme comprises value factors regarding the realism of virtual experiences. In this context, *realism* and *immersion* in virtual worlds were most cited in the YouTube videos. Immersion describes the extent to which people are conscious of being situated in and interacting with VR rather than the real world.[54] Accordingly, in the metaverse, users can experience social interactions or other activities while feeling psychologically present in that experience.[55] Specifically, this is achieved by creating a feeling of realism regarding space, time, environment, and actual senses.[56] *Embodied presence*, denoting a user's feeling that their avatar is their own body, is facilitated by user-generated avatars and especially promotes the realism of activities in the metaverse.[57] Stepping into a new

body of their choice to explore fictive worlds, users expressed, makes them forget reality and feel fully immersed in virtuality.

How the Metaverse Sparks Curiosity and Offers Situational Benefits

Despite YouTubers referring to epistemic and conditional values the least, nine unique value factors surfaced (six and three, respectively).

Within epistemic value, our analysis identified a total of 71 quotations, from which six unique value factors emerged. *Curiosity* and *safety* acquisition were the most prominent, making up 28 quotations. This allure often appeared in connection to *exploring new worlds and environments*, as YouTubers ascribed a higher usage and monetary potential to virtual land they perceived as exciting: "This huge land area. . . was really cool. That's one of the things that I thought would really sort of make this place way more successful." Furthermore, exploring new places was often connected with *fostering creativity* and *escaping* from a physical to a virtual *reality*. For example, one YouTuber listed the opportunities in the virtual world that inspired him to become creative:

> There are worlds that resemble dreams, worlds that resemble nightmares, worlds that are meant to conjure particular eras of video games or your childhood. There are worlds for people who like to build and customize cars. There's one world called *The Devouring*, which is an hours-long horror experience designed to be played with you and your friends in one sitting. There are art exhibits, tech demos, museums, rooms where you can watch movies or YouTube with your friends, and record stores where you can actually listen to music. There's endless stuff to see.

In addition, the YouTubers surfaced opportunities for *education and reading*, an application area that has already received widespread attention in past research. In its essence, past studies uncovered the metaverse's capabilities to make educational content more easily accessible,[58] interactive,[59] and personal.[60] This evaluation was shared in the YouTube videos, as one YouTuber summarized the following:

> One of the most important ways to understand the positive effects of the Metaverse, or 3D-real-time rendering, is to take a look at education. It remains deeply unequal globally, largely inaccessible to most, and geographically discriminatory . . . And yet, in these 3D environments, you can download course packs right now from Epic or Roblox that allow you to build complex Rube Goldberg machines and see how gravity plays out under different Gs. And these classes can be live-performed, they're infinitely re-playable, they're available to all, and they have no marginal cost for delivery. I'm not saying it's a pinnacle of equality of education and opportunity will endure—but I really do believe that these capabilities significantly constrain that gap.

In terms of conditional value, our analysis surfaced three unique value factors from 34 quotations, where the YouTubers referred to events and

offerings constrained by *time* or *season*, mostly concerned as part of seasonal promotions (e.g., VID 74), or exclusive community offers. However, past research emphasized the metaverse's opportunity to empower people in less fortunate circumstances. For example, users can experiment with their personality,[61] such as experiencing life as a different gender or experimenting with their sexuality without the fear of societal repercussions.[62] Furthermore, as avatars do not necessarily represent a user's attributes (e.g., gender and race), the metaverse facilitates a setting where users can interact with others devoid of cultural biases, promoting a fair and equitable virtual social environment.[63] One YouTuber shared this sentiment, emphasizing the unique empowering features a metaverse can offer to people who want to transcend their physical body and its limitations:

> The sheer number of choices you'll get will allow you to feel like you're not being constrained by the body that you are physically born into. In real life, you could be someone with a severe disability in a wheelchair. But in the metaverse: Forget walking, you could be able to fly.

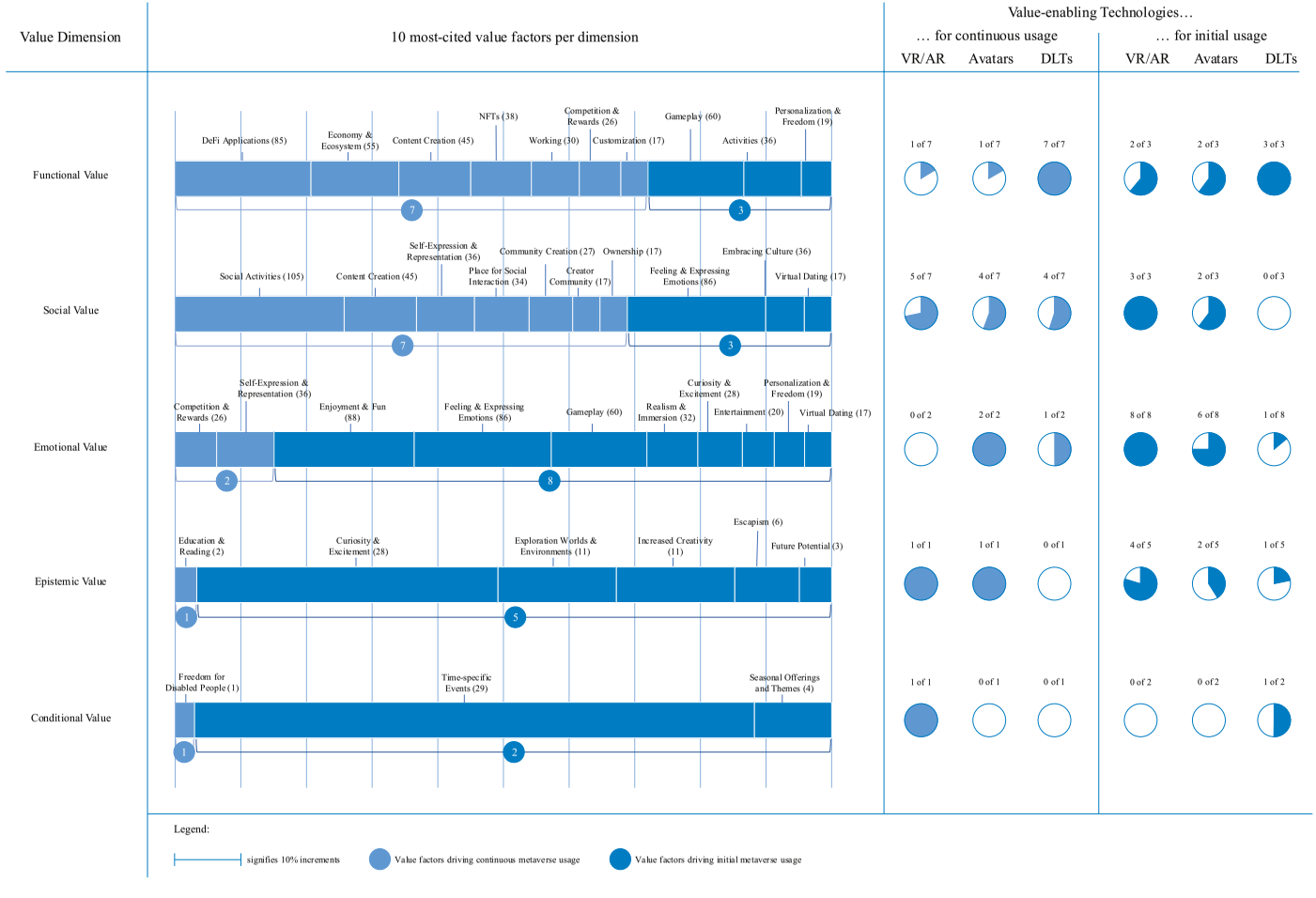
Synthesizing Insights and Implications for the Metaverse's Future Adoption and Value Creation

To reflect on the findings meaningfully and coherently, we integrated our findings into an overarching value framework that we present in Figure 4. From this framework, we deduce three insights that offer guidance for managers, entrepreneurs, and policymakers.

Insight 1: Conditional, Epistemic, and Emotional Values Draw Users to the Metaverse, While Functional and Social Values Are Essential for Its Broad Adoption

Understanding user value is essential not only for grasping the capabilities of innovative technologies or information systems but also for discerning users' intentions to adopt them.[64] The metaverse aspires to offer users unique experiences in areas like social interaction, communication, and other aspects of real-world experiences (e.g., work, studies, sports, hobbies, and so on). These features align with the trend of nomadic consumption and the fluid relationship consumers have with their possessions. Prior research suggests that people increasingly value the portability of assets and their transfer to a digital world.[65] The YouTube content analysis revealed that the most significant value of the metaverse comes from its capacity to offer users more immersive, personalized, and interactive social interactions compared with conventional digital communication technologies (e.g., smartphones, social media, the internet, or computers). In line with this, we observed that functional and social user values were the most mentioned dimensions and the core focus of users and academics. As such, functional and social values are the most prevalent user value propositions and affordances of the metaverse. When considering these findings from the standpoint of users'

FIGURE 4. Value framework.



adoption intentions, it could be suggested that the still pending mass adoption of the metaverse hinges on its ability to deliver social and functional value to users, while emotional, epistemic, and conditional values play a secondary role.

Epistemic, conditional, and emotional values, such as curiosity and excitement regarding the usage of the metaverse, possibly drive the first-time use of metaverse platforms. In contrast, social and functional value characteristics are required for reoccurring use and mass adoption. Still, we can see that in both categories, initial and continuous use, there is a focus on user engagement. Hence, managers must find ways to balance customer involvement and investment costs independent of an organization's goals when joining metaverses. In other media, many organizations use conditional values to convey urgency, novelty, and prestige when selling products.[66] However, as the metaverse is built on user immersion,[67] these tactics might be less useful in virtual worlds. Contrarily, looking at our data, the following can be argued:

Insight 2: Users Perceive Lasting Offerings and Experiences as Much More Valuable Than Short-Time or Conditional Offerings

When joining metaverse spaces, many companies are venturing through small investments to test the implications for their organizations. Besides launching NFTs, many brands engage in limited-time partnerships or participate in short-time events. For example, Coca-Cola did both when releasing a limited-edition beverage to complement a treasure-hunting experience in a partnership with Fortnite while also hosting a party to celebrate International Friendship Day.[68] Similarly, Ralph Lauren launched a digital apparel collection in Fortnite and hosted a winter-themed event.[69] Still, many of these conditional offerings, depending on specific event times or seasonal themes, often gain high media coverage despite being frequented by only a few users. For example, only six people showed up when the European Union hosted its metaverse party.[70] Unsurprisingly, such undertakings can deter organizations from future metaverse involvements.[71]

Our content analysis further illuminated this trend. We could observe that most YouTubers completely disregarded short-term offerings and focused on more sustainable and replicable factors. Combining this observation with past research, we can hypothesize that limited metaverse offerings can oppose part of the metaverse concept.[72] The values derived from our sample are often centered around gamified concepts, like *gameplay*, *gamification*, and *competitions and rewards*. These factors are built to suggest longitudinal progress and character development to the user.[73] However, limited-time offerings, if not integrated into persistent reward structures, can fail to motivate users to access the service. For example, Coca-Cola's partnership with Fortnite is widely seen as a success, as their themed experience was integrated into the existing Fortnite reward structures and hinged around an engaging challenge (i.e., finding a treasure).[74] On the contrary, the Decentraland Metaverse Fashion Week 2023, with brands such as Vogue, Tommy Hilfiger, and Gucci, was described as lonely and deserted, as users had no objective to accomplish to gain rewards—though it was still considered a marketing hit.[75]

The YouTubers in our sample expressed similar sentiments as they recognized that many brands only enter the metaverse for marketing and not to foster user engagement. For example, one evaluated,

> Like events and all that. Maybe that is something cool for them [the brands], right? Like they can take an investor to an event or something like that . . . But their big thing there is the press it generates.

Furthermore, YouTubers repeatedly highlighted the importance of gamification elements to attract users even in persistent reward structures. For example, one states, "I'll spare you the details, but after spending five hours progressing through the . . . exceedingly boring main questline, . . . I decided to just start wandering around this vast empty world." Later in the same video, he described his experience as "the most mind-numbingly boring experience that I've ever had." These testimonials further emphasize that successful organizational offerings require a sustainable and interactive user experience that is built on engaging and sustainable progressions through competitions and rewards.

Consequently, managers should learn from these examples when venturing into the metaverse. A gamified ecosystem that supports key value factors like *competitions and rewards* seems inevitable to gain initial and sustainable usage. This can be achieved by either partnering with an existing platform that supports these values (like Fortnite) or heavily investing to create such a platform and the corresponding structures themselves (like Nike's Nikeland).[76] If a company does neither, their metaverse investment might still result in high marketing. Nonetheless, users will recognize the brand's intention and not use it. Consequently, the respective metaverse endeavor will not perform representatively, contribute to the increasing amount of unused content on the internet, and deter other companies and users from adopting a metaverse.

In this context, the presently underdeveloped mechanisms facilitating user engagement and novelty in the metaverse can explain the poor adoption of virtual worlds in Web3 (metaverse platforms). Compared with 5.16 billion people with internet access (Statista, 2023), 400 million (7.8%) actively use virtual gaming worlds (e.g., Roblox, Minecraft, or Fortnite), while only 50,000 (0.001%) users actively enter decentralized virtual worlds (e.g., Decentraland or Axie Infinity).[77] Presumably, the metaverse still lacks a "killer application"—with the power to break out of existing market structures and transform industries—to promote its functionality beyond the needs of the younger generation (e.g., gaming and social interaction).[78] Otherwise, its mass adoption might not occur in due time. In this context, a question arises: what other technological capabilities facilitate the value creation of metaverses, and how? The following can be argued:

Insight 3: DLT Is a Major Facilitator of All Value Dimensions and, Hence a Central Aspect of Metaverses

While determining which Web3 technologies enable the key value factor of each value theme, the significance of DLTs, especially among our YouTubers,

becomes apparent. In discussing nine of these 13 factors, the emphasis on decentralization, often acknowledged as either an enabler or a booster, outshone other tech capabilities. For example, blockchains as one DLT are fundamental when creating unique digital assets, facilitating economic exchanges, and assigning legal ownership. It forms the bedrock for all DeFi applications, NFTs, and broader economic ecosystems. Furthermore, it underpins content creation by empowering users to establish creatorship and monetize creations, fostering "maker's pride" and amplifying self-expression and self-actualization. Beyond the aspects listed in Figure 4, decentralization's role in, among others, community building and the significance of decentralized autonomous organizations in crafting psychological safe havens was accentuated by YouTubers.

The academic realm, however, remains split on the indispensability of decentralization within metaverses. While some view DLT as merely peripheral to the metaverse spectrum, others see decentralization as its cornerstone.[79] Notably, Meta's Horizon Worlds, often deemed a quintessential metaverse, is centrally governed by Meta with no decentralized offerings. Furthermore, Meta's hefty transaction fees, reportedly half of all transaction prices, severely interfere with the values identified in our study (e.g., content creation and self-expression).

The findings by Yoo, Welden, Hewett, and Haenlein provide a potential middle ground, suggesting that transient metaverses might not harness defining technologies like DLT or VR/AR.[80] Thereby, a full-fledged metaverse must be decentralized, while popular centralized platforms (such as Horizon Worlds) can still be considered a (transient) metaverse platform. Though Yoo, Welden, Hewett, and Haenlein's work is theoretical, our empirical findings from actual users echo this perspective. Many YouTubers considered centralized platforms metaverses. However, to truly harness the complete value spectrum, a metaverse, along with its offerings, must champion decentralization.

YouTubers also considered blockchain technology as a basis for the metaverse's future diffusion. In particular, the interoperability of blockchains will be crucial. The better blockchains communicate, the more seamless the connection between different virtual worlds will be, enabling metaverses to become an ecosystem of many metaverses in which virtual items, as well as currencies, are universally applicable. In fact, numerous metaverse use cases are based on blockchain and will be reinforced by blockchain interoperability.

With blockchain as a significant part of future metaverse infrastructure, managers face unique challenges. To ensure a safe and responsible environment for users, issues such as data privacy, security, intellectual property rights, and content moderation must be proactively addressed. This is imperative to build the necessary trust for users to conduct business online, to collaborate in the metaverse, and to become psychologically vulnerable to feel and express emotions. To protect metaverse users' rights and interests, managers should collaborate closely with policymakers, legal experts, and other stakeholders to develop appropriate guidelines and best practices.

Broader Limitations

Like every study, we also encountered limitations in the construction of our manuscript. First, the manual curation of our video sample, coupled with potential cultural bias stemming from accessing YouTube via a VPN set to a U.S. network location, could affect the reproducibility of our findings. As a result, these factors limit the findings' generalizability, particularly in cultural contexts such as the Asian market, where metaverse platforms are popular. The potential for cultural variations implies the possibility of divergent user values and adoption behaviors. In light of this, future research might benefit from replicating our content analysis using data sources from other geographical areas, particularly from Asia, to reinforce the validity and generalizability of the outcomes. Furthermore, we focused on influencers—a group known for their technological inclination and a generally optimistic outlook toward emerging technologies. Thus, the nuanced perspectives and reservations of late adopters and laggards, who play a pivotal role in the broader acceptance of a new technology in society, lie outside the scope of this study. Consequently, a range of perspectives, value propositions, and barriers may exist that should be illuminated in future research to extend and contrast our findings.

To sum up, diversifying the theoretical lens, introducing varied perspectives, and undertaking longitudinal studies to track shifts in user value perceptions and the evolution of the metaverse could provide a more holistic understanding of this rapidly changing digital realm.

Conclusion

Our analysis of YouTube content has illuminated pivotal dimensions of user value within the metaverse, notably spanning functional, social, emotional, epistemic, and conditional realms. The metaverse's ability to provide a platform for collaboration, creativity, and economic opportunities, allowing users to derive both personal and professional value from their virtual experiences, is referred to as functionality. Forming communities, diverse social interactions, self-expression, and integrating the metaverse with users' social lives contribute to creating social value. Entertainment, experiences, social activities, self-determination, psychological safety, and the realism of virtual experiences drive the emotional value dimension.

Our findings emphasize the importance of creating immersive and engaging experiences that cater to users' diverse needs and preferences. When developing and expanding metaverse platforms, managers must consider these dimensions to provide users with meaningful experiences and foster long-term engagement. Furthermore, addressing privacy and data security concerns, promoting an inclusive culture, and facilitating seamless social interactions will be critical in unlocking the metaverse's full potential and creating user value.

As the metaverse is an evolving entity, understanding how it pivots to accommodate shifting user desires will be of the essence. Beyond this, a pressing

imperative remains: to unpack the ethical quandaries the metaverse might spawn. Strategizing against potential pitfalls—whether they be the shadows of social alienation, the specters of addiction, or the threats of cyber harassment—is paramount to sculpting a metaverse that is both vibrant and benevolent.

Appendix

Method Deep Dive

To ensure the validity and reliability of our qualitative data and analysis, we followed the four widely acknowledged criteria of *credibility*, *transferability*, *dependability*, and *confirmability*.[81]

Credibility, also called internal validity, measures how well one's findings align with reality.[82] To ensure our informants are "knowledgeable experts,"[83] we employed several quality checks. First, we considered the previous publishing history of YouTubers in our sample to check their experience when reviewing and testing technologies. We further accounted for the reception of the viewership of the respective videos. Here, we considered view numbers as a proxy for the content's relevance and a positive likes-to-dislikes ratio as a proxy for the content's quality. Third, we only included videos in which the YouTubers explicitly stated their reasoning to ensure our data's qualitative depth and richness. To further increase credibility, we applied member checks during our coding procedure. These included independent coding by the first and second authors. Afterward, initial coding results were critically discussed until the first-order codes were sufficiently reviewed and the second iteration could begin. During the discussions, the coders aimed to ensure that first-order codes had comparable levels of abstraction and reflected the expertise of each informant.

Transferability refers to the ability of one study's results to be abstractable to another context with different participants. While research has established that qualitative, inductive research can produce structurally transferable insights,[84] results must be interpreted within the informants' contexts to recognize which information can be transferred. To improve our reader's ability to identify and interpret transferable results, we offer exhaustive contextual information on our data in Online Supplemental Appendices B and C, including where to find our original data.

Dependability, also called reliability, concerns whether research findings can be replicated.[85] Not only are all our data publicly available but also we offer in-depth information on our methodological procedure, as well as extensive insights into our coding framework (see Online Supplemental Appendix B). By integrating this information, we aim to promote replicability through systematisms and transparency.[86]

Confirmability mainly regards the results' objectivity, specifically with the researchers' biases and their effect on the study's outcomes. While researchers

should ideally be objective and factual, this is nearly impossible. Still, we aimed to proactively address potential biases throughout the project, especially during the coding and data analysis phase. Thereby, we ensured that all researchers were at least aware of potential biases and knew methods to counter them. Furthermore, we presented our analysis and results of this project at two practitioner conferences each with more than 100 top-level managers who are active in the field of metaverse before writing and submitting the first manuscript. Thereby, we collected feedback from industry experts, which we critically reflected upon during the manuscript's construction.

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Author Biographies

Fabian Tingelhoff is a PhD candidate at the Institute of Information Systems at the University of St. Gallen (email: fabian.tingelhoff@unisg.ch).

Sebastian Klug is a postgraduate student in the Master in Strategy and International Management at the University of St. Gallen (email: sebastian.klug98@web.de).

Edona Elshan is an Assistant Professor at the KIN Center for Digital Innovation at Vrije Universiteit Amsterdam (email: e.elshan@vu.nl).

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