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Metaverse Consulting: Future Trend or a Hype Cycle?

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Abstract

The Metaverse is experiencing tremendous growth. Companies such as the Big Four and many boutique consultancies are developing use cases, taking on the role of innovators in the market. The thesis aims to analyze the acceptance and application of the Metaverse in the consulting industry. Secondary data was collected through a literature review. The literature depicted the general definition and development of the Metaverse and the implementation of successful use cases conducted by consultancies. As for primary data, qualitative and quantitative research methodologies were combined. The literature review, expert interviews, and survey were triangulated. Analyzed were management models about the technology acceptance, dynamic capabilities, diffusion of innovation, and first mover advantage.

The results suggest that despite skepticism around the hype of the Metaverse, long-term interest and potential are observable, especially for the educational sector, heavy industries, and virtual work scenarios. The study highlights that education and the development of praxis-relevant applications are important elements for the successful implementation of the Metaverse in consultancies. Broad acceptance is still pending but increasing within companies, and consultancies are adapting their dynamic capabilities accordingly.

Keywords: Metaverse, Consulting, Technology Acceptance, Dynamic Capabilities, Diffusion of Innovation, First-mover Advantage

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Sumário

O Metaverso está a registar um enorme crescimento. Empresas como as Big Four e muitas consultoras boutique estão a desenvolver casos de utilização, assumindo o papel de inovadoras no mercado. A tese tem como objetivo analisar a aceitação e a aplicação do Metaverso na indústria da consultoria. Os dados secundários foram recolhidos através de uma revisão da literatura. A literatura retratou a definição geral e o desenvolvimento do Metaverso e a implementação de casos de uso bem-sucedidos conduzidos por consultorias. Quanto aos dados primários, foram combinadas metodologias de investigação qualitativas e quantitativas. A revisão da literatura, as entrevistas a especialistas e o inquérito foram triangulados. Foram analisados modelos de gestão sobre a aceitação da tecnologia, capacidades dinâmicas, difusão da inovação e vantagem do pioneiro.

Os resultados sugerem que, apesar do ceticismo em torno do hype do Metaverso, o interesse e o potencial a longo prazo são observáveis, especialmente no sector educativo, nas indústrias pesadas e nos cenários de trabalho virtual. O estudo salienta que a educação e o desenvolvimento de aplicações relevantes para a prática são elementos importantes para a implementação bem sucedida do Metaverso nas empresas de consultoria. A aceitação generalizada ainda está pendente, mas está a aumentar nas empresas, e as empresas de consultoria estão a adaptar as suas capacidades dinâmicas em conformidade.

Palavras-chave: Metaverso, Consultoria, Aceitação da tecnologia, Capacidades dinâmicas, Difusão da inovação, Vantagem do pioneiro

Título: Consultoria Metaverso: Tendência futura ou um ciclo de moda?

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List of Abbreviations

AI: Artificial Intelligence

AR: Augmented Reality

MR: Mixed Reality

M-worlds: Metaverse-worlds

NFT: Non-fungible Tokens

VR: Virtual Reality

XR: Extended Reality

1 Introduction

The consulting industry is experiencing tremendous growth. Over the last several years, the market for management consulting services grew to approximately \$250 billion (Statista, 2023), a trend seen as likely to continue. This upward trajectory has not peaked, given the ever-changing market challenges and new technologies that push companies to employ consultants. And the Metaverse may be poised to give consulting a whole new complexion, with internal and external disruptions as the sector evolves.

The Metaverse incorporates recent technological advances, impacting and reshaping business activities. Yet, many firms lack the expertise to implement applications and build know-how in this area. Navigating the Metaverse, *inter alia*, needs thorough knowledge, management, and overcoming internal resistance. What is often misunderstood is that the Metaverse is not some distant futuristic vision. It is already part of the present, so early adopters may achieve competitive advantages. At the same time, large advisory firms such as Accenture, PWC, EY, Deloitte, McKinsey, and KPMG treat the Metaverse as one of the top strategic technology trends for 2023 and the near future.

The term “Metaverse” has had various definitions since its inception in the science fiction novel *Snow Crash* of Neal Stephenson's in 1992. Today, it is taken to mean technology that features augmented reality, virtual reality, and real life (Arburbeian, Owda & Owda, 2022) and invokes the notion of “cyber space” (Ravenscraft, 2023). In virtual space, individuals and businesses can interconnect and engage within interactive environments. The Metaverse includes responsive environments, digital avatars, and digital assets like NFTs. It is also affiliated with the “next generation of the Internet,” a seamless interconnection between the virtual and physical (Bobier et al., 2022).

The Metaverse is taken to offer possibilities for limitless creativity, where the imagination has free rein. But Metaverse, do business ecosystems reshape industries in ways we have not seen before? BCG forecasts that the Metaverse will rise to approximately \$250 billion to \$400 billion by 2025 (Bobier et al., 2022). Estimates for 2031 claim that the contribution to the global GDP by the Metaverse will exceed \$3 trillion (Christensen & Robinson, 2022). This growth implicates numerous sectors, from the consumer industry to healthcare, travel and tourism, financial and professional services, industrial goods, energy, technology, and real estate (Abovitz et al., 2022). The three primary use cases for the Metaverse are industry/operational support, customer experiences, and employee experiences (Bobier et al., 2022). In all these

areas, consulting companies play a role; thus, the growing potential of the Metaverse and traditional consultancy practices firmly intersect.

This paper explores the consulting world's ability to integrate this new phenomenon, the Metaverse, into consulting practices. Our investigation, using qualitative and quantitative research tools, seeks to shed light upon an emerging innovation phenomenon and will answer the following research question: "What role do technology acceptance and dynamic capabilities play in the practical adoption and implementation of the Metaverse in the consulting industry and to what extent is there technology acceptance of the Metaverse among consultants, and business students?"

2 Literature Review

The first section of the literature review covers the theoretical background of the Metaverse, its definition, trends, and industry examples. Next, we examine the consulting industry's technology acceptance and internal transformations. The third section analyzes what challenges arise with the Metaverse and what capabilities the consulting industry should possess to implement and adapt to the Metaverse transformation. Throughout the chapter, we also discuss relevant management theory we will be testing – technology acceptance, innovation diffusion, dynamic capabilities, and first and second mover advantage.

2.1 The Metaverse

The Metaverse is an emerging phenomenon being considered by numerous consulting companies. In the past, consumers and industries faced three major technological waves: the development of mobile gadgets, personal computers, and the internet (Aburbeian et al., 2022, Mystakidis, 2022). The current fourth wave is the evolution of the Metaverse along with its technologies, such as virtual and augmented reality (Aburbeian et al., 2022, Kamenov, 2017). There is no consistent definition of the Metaverse, but it could be best described as contiguous with "cyberspace," which Eric Ravenscraft defined (Deloitte China, 2022). This definition is used in 90% of cases (Bobier et al., 2022).

According to Ball & Bloomberg (2021), the Metaverse converges at the junction of three user bases and technologies. These are AR/VR/MR, the M-Worlds (Metaverse worlds), and Web3/virtual assets (Bobier et al. 2022). Virtual Reality (VR) includes three-dimensional virtual environments where people can interact and explore. Augmented Reality (AR) generates

real-world experiences and fantastic experiences with a composite view. The fusion of virtual and real worlds is Mixed Reality (MR), real-time synchronization, and interaction of digital and real objects. VR, AR, MR, immersive tools, M-worlds, and haptics can be summarized under Extended Reality (XR) (Warnke et al., 2022). With the help of those tools, realistic, immersive, and digital environments that mimic real-world experiences are created. Unrealistic objects and experiences can be manufactured (Dwivedi, 2022, p.4). The implementation of 5G and AI, in general, are speeding up the technology adoption process.

2.1.1 Industry Trend

Due to the growing mass market for these devices, the M-worlds already have between 300 and 500 million users. As for AR/VR/MR itself, there are 30 million installed headsets, 800 million mobile AR users, and a \$16 billion market for software, hardware, and advertising. A similar trend is going on with Web3/Virtual assets. Thirty million total NFT wallets, \$40 million in NFT assets, and \$50 billion in virtual transactions (fiat currency) are circulating worldwide (Bobier et al., 2022).

Moreover, numerous companies are entering the Metaverse industry. Those are not only driving but also forming our understanding of the Metaverse. Roblox reached a market value of more than \$40 billion despite only entering the market in March 2021 (Deloitte China, 2022, p. 3). It is often perceived as the “first listed company under the Metaverse concept” (Deloitte China, 2022, p.5). The company was once starting as a virtual reality game company and is now allowing users to create their games, designs, and avatars, as well as hosting virtual events (Bobier et al., 2022). Facebook added to the enthusiasm in the field by renaming the company “Meta” and positioning itself in the emerging phenomenon of the Metaverse (Deloitte China, 2022, p. 5, Bobier et al., 2022). Microsoft was betting \$70 billion on a meta future with a planned acquisition of Activision Blizzard (Bobier et al., 2022). Goldman Sachs estimates the Metaverse to be an \$8 trillion opportunity. Morgan Stanley projects this number for the Chinese market alone (Bobier et al., 2022). Other companies have more reserved estimations. EY sees it as only a \$1 trillion opportunity (Fersht & Cushman, p. 6, 2023).

Major technology players such as Google, Huawei, Tencent, ByteDance, Microsoft, Facebook (Meta), and Apple are all building XR platforms and ecosystems. Apple has acquired numerous patents for 3D reconstruction technologies and AR and XR technology companies. Apple is well-positioned to bring disruptive AR/VR products to market since it has a user base of over 1 billion, a software and hardware ecosystem with over 330 fundamental XR patents, and an

industry-leading AR kit software platform. These indicate that the Metaverse is experiencing tremendous growth (Deloitte China, 2022, p. 21 f.).

2.1.2 Stages of the Metaverse

Deloitte China (2022) states that integrating the Metaverse will be a significant challenge. In the early development stage (from 2021-2031), companies must implement small decentralized and multi-centered ecosystems of the Metaverse and deepen single-industry applications. The current state is also termed the “transitory Metaverse.” A phase in which the Metaverse can be accessed through augmented and virtual reality tools and also conventional technological devices (Yoo et al., 2023). Many companies expanding into the Metaverse do not want to restrict access only to virtual reality devices. Special equipment, such as virtual reality glasses, are often perceived as too expensive, and the infrastructure is not yet at a level where everyone can gain Metaverse access (Yoo et al., 2023).

The infrastructure, with its corresponding connecting devices and online, digital, and virtual applications, has to be built and mature. These ecosystems will ideally be integrated at some point due to progressive data sharing and collaboration. This stage will mainly be about developing technical patterns, key connecting devices such as XR devices, and platform infrastructure. It is estimated that the mature phase of the Metaverse will be achieved in 2031. It will include the connection of data and standard cross-platform opening, integration of cross-platforms, and cross-industry ecosystems (Deloitte, p. 6 f.). Multi-centered ecosystems that evolved in earlier stages will mature into more distinctive ecosystems focused on industries (unified data standards, smart communities, smart buildings, smart transportation systems) and individuals (virtual life scenarios). There is no estimate yet when the final stage of development shall be reached as it will need further individual and industrial integration from the ultimate state of the Metaverse. An extensive range of scenarios and possibilities exists that are not yet defined. (Deloitte China, 2022).

2.2 The Consulting Industry

Management consulting is advisory or business consulting that targets improving companies' efficiency and effectiveness of performances, operational processes, and business strategies. The global management consulting services market reached 2021 nearly \$904.73 billion. Since 2016, it has increased with an annual growth rate (CAGR) of 3.7%. According to financial projections of The Business Research Company (2022, p.2), it will reach \$1,166.01 billion in

2026 and then reach \$1,430.14 billion in 2031 with a CAGR of 4.2%. This growth will likely be driven by digital consulting and increased investment in new technologies, smart cities, environmental protection regulations, and goals of increasing customer satisfaction (The Business Research Company, 2022, p. 2f., p. 23).

The primary management consulting segments are strategy advisory, HR advisory, technology advisory, financial advisory, operational advisory, and other consulting services that include more than 200 functional and industry areas (The Business Research Company, 2022, p.2, Consultancy.org, n.d.). The market for strategy advisory is expected to be the segment with the most growth (CAGR of 7.5%). The services provided include organizational and strategic planning solutions, personnel policies, productivity improvement, business process improvement, strategy, and quality management. Among the services in the market, IT services are estimated to have the fastest rise, with a CAGR of 5.5% (The Business Research Company, 2022, p.23). There should be a distinction between freelancers (85%) and small, mid-sized, and large firm consultants (Consultancy.org, n.d.). The large consulting firms own 2021 the most substantial market share with 62.7% and \$567.13 billion. The ten largest companies accounted for 16.39% of the market share in 2021, namely Deloitte Touche Tohmatsu Limited (3.68% share), followed by Accenture (3.02%) and PwC (2.04%) (The Business Research Company, 2022, p. 3).

According to a study by the Graduate Management Admission Council (GMAC), consulting has become so popular among graduates worldwide that it is within the top three choices of industry functions. It has been growing in recent years. In 2015, 35% of the postgraduate management education (GME) interest was in consulting, which increased to 47% in 2022. A survey of participants' top job interests showed that in 2022, 67% of respondents would like to take on a consulting job, compared to 29% in 2015 (Gmac.com, 2022). The growing trend of students aspiring to enter consulting poses whether this career choice aligns with the emerging Metaverse trend. If so, it is questionable whether business students are adequately prepared to navigate this dynamic digital landscape since only a few business schools integrate it into the curriculum (Murray, 2022). The Business Research Company (2022, p.3) recommended that consulting services focus on such areas as the Metaverse, the internet of things (IoT), artificial intelligence (AI), service modularization, and automation and become increasingly knowledgeable in those areas.

2.2.1 Technology Acceptance and Internal Transformation

Many consultancies have entered the Metaverse and seek to specialize in it. Nevertheless, the degree of technology acceptance within the consulting industry varies. Technology acceptance describes the readiness and intent of individuals and organizations to adapt a new technology, tool, or system. It encompasses usability and ease of use, which indicates to which extent a technology is accepted within a particular group (Davis, 1989). Research emphasizes that the perceived ease of use is crucial for introducing innovations (Davis, 1989). Rogers and Shoemaker (1971) suggest that an innovation's complexity is the extent to which an innovation is recognized as hard to use or understand. In the context of Metaverse consulting, technology acceptance measures the readiness and openness of consulting firms and their customers to integrate Metaverse-centered solutions, tools, and strategies into operations and services. While academic research in this area is still developing, some consulting companies have already published reports about strategic goals and internal transformation to meet Metaverse's evolution.

A measurement for technology acceptance is the UTAUT model. It predicts the users' intention to use and accept a technology and measures their usage behavior. It is an elongation of the classical technology acceptance model TAM and includes the main components: effort expectancy, performance expectancy, social influence, and facilitating conditions. Moderating variables such as experience, gender, and age are also considered since they could influence the connection between main variables and technology acceptance (Venkatesh et al., 2003).

Accenture is an example of how internal changes fostering a culture of Metaverse technology can look. It introduced the "Metaverse Continuum"—a spectrum of digitally enhanced worlds, realities, and business models—to redefine how the world works, operates, and interacts" (Accenture, 2022). It has over 600 patents in related technologies and applications and 245 Metaverse pilot projects and proof of concepts out of the Accenture labs (Accenture, n.d.). In collaboration with Microsoft, Accenture implemented an enterprise Metaverse: "The Nth floor." In this virtual twin of the campus, the employees of Accenture can interact with each other in the form of avatars. This workspace familiarizes new employees with the Metaverse and helps them better understand the organizational needs and processes (Warnke et al., 2022). This meeting platform aids employees in accepting and adopting the new technology. In 2022, 150,000 of the newcomers in the company had to work on their first day from the Metaverse.

BCG's Metaverse consulting experts help with strategies, investments, M&A target search, use case identification, infrastructure enablement, and tech industry players providing software, hardware, and telecom operations (BCG, 2023). In addition, these consulting firms' Web3 Executive Training is aimed at CEOs and senior executives. They recently launched the Versed Academy for virtual and on-site executive training programs (BCG, 2023). Tibor Mérey, BCG's managing director and partner, identified significant trends such as digital twins, collaboration, and productivity. Digital twins are digital replications of systems and objects, and by using AI, they can simulate a complex physical process (Singh et al., 2022, Uddin et al., 2023, p.9).

2.2.2 Industry Use Case Examples

The Metaverse offers possibilities for consulting industries to improve productivity, innovation, and customer engagement. BCG has identified a few general XR use cases that could be or are already pursued in the firm (Figure 1). It is likely that with further development of new technical applications of the Metaverse, use cases will accelerate. This evolution of technology can be compared with the inception of the internet, media, and mobile connectivity (Bobier et al., 2022, p. 14). XR use cases are not limited to consumer experiences but also have a wide range of applications in enterprise use cases and industry functions such as knowledge sharing, process management, remote training, retail, healthcare, and industrial manufacturing (Deloitte China, 2022, p. 3).

Table 1: Use Case Examples (Bobier et al., 2022, p. 5)

Enterprise XR Use Cases	Examples
Analysis and simulation	Using virtual twins in engineering, maintenance and operations
Augmented workforce	Manufacturing, logistics
Virtual collaboration	Meetings, workshops, conventions
Training and development	Pilots, firefighters, scenario simulation
Consumer XR Use Cases	Examples
Entertainment	Gaming, movies, art, virtual experiences
Social interactions and communities	Forums, concerts, dating
Content creation	Art, virtual experiences, clothing
Training and exercise	Tutorials, virtual coaching, virtual aerobics

A reputable use case example is Metaverse integration in the automotive industry. AR and VR are already often used within the value chain. It goes from the engineering stage to the sales and after-sales stage (Figure 2). Original equipment manufacturers and other suppliers employ technologies for engineering processes, operational training, virtual showrooms, (upgrade-) simulations, virtual asset transactions, and repair—this way, highly immersive brand experiences are created. An example is the virtual “hypercar” launched by Alpine, Renault's subsidiary, with NFTs for ownership proof (Bobier et al., 2022).

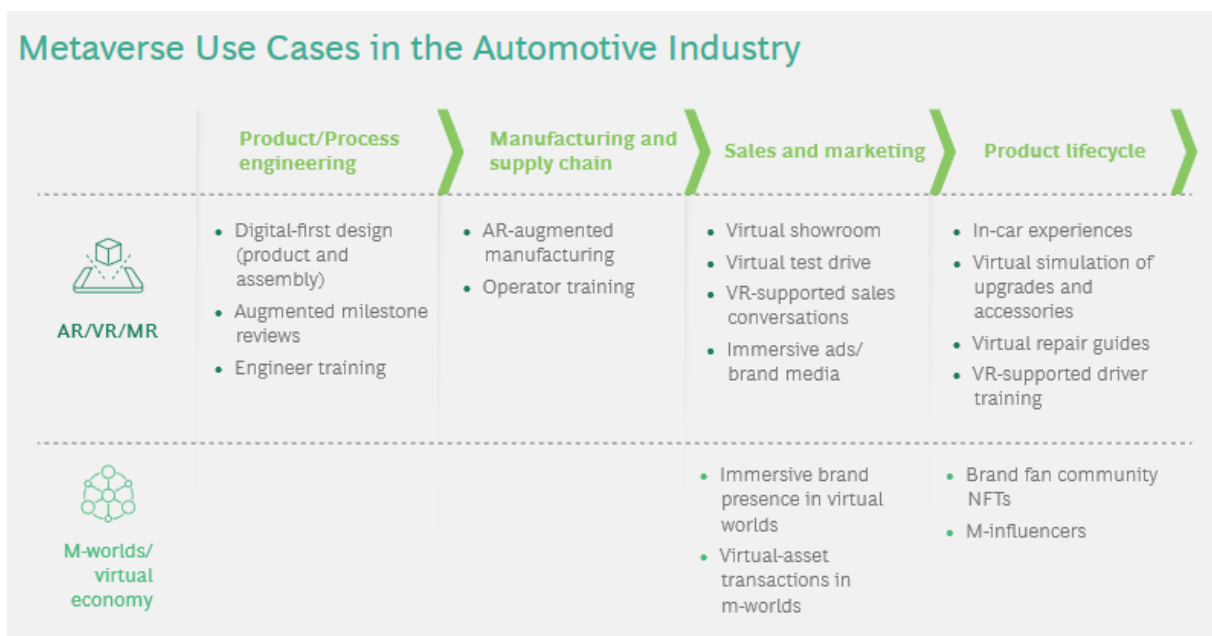


Figure 1: BCG analysis (Bobier et al., 2022, p.6)

A use case of the Accenture Advanced Technology Center (ATC), in collaboration with Sky Group, CHRISTUS Health Excellence and Innovation Center (CEI), is the implementation of Microsoft's HoloLens AR tool in surgeries at the CHRISTUS MUGUERZA Hospital Conchita. During surgical procedures, it is possible to overlay scans and models with see-through holographic glasses over patients. This helps the surgeon find the best entry point, which reduces recovery time and increases the chances of a better surgical outcome. The system allows access to patient records, MRI and CT scans, and surgical schedules. The field of surgery might be revolutionized through this new technology in Latin America and Mexico (Accenture, 2023).

2.3 Challenges and Barriers in Metaverse Adoption

Many challenges are associated with such a new technology. It is hard to separate the Metaverse from the hype surrounding it since big tech companies portray it in such a positive light. While

many companies see potential in thriving decentralized economies, questions regarding asset ownership in the Metaverse, human rights, data privacy, legal issues, ethics, and avatar design and use are coming up (Accenture, 2022, Dwivedi et al., 2022). Lack of product variety, software incompatibility, and limited production capacities persist.

A substantial challenge to overcome that determines the technology acceptance and adoption of the Metaverse is the diffusion of innovations. Diffusion is a process in which social systems communicate innovations over time. Such diffusions can pose challenges even when offering clear advantages since significant gaps between knowledge and adoption can exist. Despite the benefits of innovations, it often takes years to spread acceptance. There is frequently a time delay between actual availability and adoption, and individuals and organizations are often faced with the problem of speeding up the rate of innovation adoption (Rogers, 1983). The diffusion process consists of five different stages. The innovators stage includes the first organization and individuals to adopt a new technology. These are often more risk-prone and open to new concepts and ideas. Early adopters are those who are accessible to change and quickly adopt innovations once they are out in the market. The third group is the early majority, which only implements an innovation when it has proven itself, followed by the late majority and laggards (Rogers, 1983).

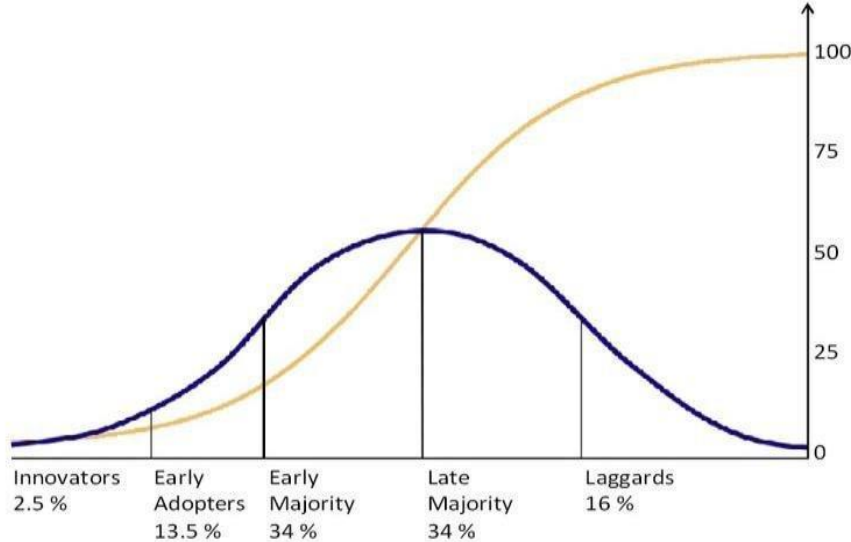


Figure 2: Diffusion of Innovation (Briscoe et al., n.d.)

A survey conducted by KPMG (Gibson et al., 2023) highlights the gap between seeing the potential in revenue and profits through the Metaverse and taking action and investing in it. 60% of TMT (Technology, Media, and Telecommunication) executives believe there to be a

significant impact of the Metaverse on consumers and businesses. However, two-thirds of TMT companies do not feel adequately prepared with Metaverse processes. Even though many TMT leaders support the Metaverse initiatives, with 51% investing in the required IT infrastructure and 55% of the TMT companies trying to acquire the necessary knowledge for the actual adoption by recruiting staff with the necessary expertise, they often invest less than 5% of their technology budget into it. In addition, only 31% have appointed a leader and team specifically for Metaverse expansion. This can be explained by the insecurity about the Metaverse's evolution. Even though Metaverse technology is already available in markets, 59% of TMT leaders consider the concept needs further refinement (Gibson et al., 2023). Moreover, capturing the value of radical technological innovation such as the Metaverse requires the creation of a parallel business model/use case innovation. They demand changing to traditional business models (Teece et al., 2010). However, only 34% of the companies in the KPMG survey intend to build a business use case for the Metaverse (Gibson et al., 2023).

Furthermore, internal coordination challenges could arise if the specialization of single units for the Metaverse adoption in companies leads to internal fragmentation. This reduces the company's effectiveness (e.g., Bowman & Ambrosini., 2007, p. 367) and would not bring the positive effect of technology implementation. Other substantial challenges to overcome are legal concerns of the Metaverse. Since it is still in its infancy, it lacks a controlling best practices dealing with data privacy and security issues. It is widely unregulated, and it will require the efforts of companies and users to preserve both safety and security (Hanke et al., 2022).

XR technologies are facing technical difficulties. Different VR and AR devices are often not compatible for all devices, and the development of AR lags behind VR. VR devices have gained consumer acceptance to some extent, while AR devices still show lots of technical issues. In the current state of development of optic devices, manufacturing problems, and physical limitations arise. The required amount of power cannot yet be led into the glass devices (Hanke et al., 2022). According to John Hanke, the CEO of Niantic, a company that develops Metaverse applications, the capacities of mobile networks pose another problem. They are not yet, and likely not for a long time, stable enough to carry the energy intensity Metaverse devices require (Hanke et al., 2022). In addition, motion sickness, followed by the usage of AR and VR devices, is experienced by many users (Chang et al., 2020).

2.3.1 Dynamic Capabilities for Navigating the Metaverse

Teece et al. (1997, p.516) depict dynamic capabilities as the firm's ability to adapt external and internal proficiencies to fast-transforming environments. It is "the firm's potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base" (Barreto, 2010, p. 271). Dynamic capabilities are about sensing new chances and threats in technology and seizing the opportunity. That can happen through product development, partnerships, or acquisitions. Afterward, companies must reallocate resources and renew strategies to stay competitive within the Metaverse. The "direct relationship" approach claims that there exists a direct connection between a company's dynamic capabilities and its performance and competitive advantage (Barreto et al., 2010, p.274; Teece et al. (1997). According to the scholarship, the following two decision-making attributes are especially relevant: The ability to change the resource base and the timing of decision-making for the resource base modification (Barreto et al., 2010; Eisenhardt & Martin, 2000, p. 1117). Applying Teece's dynamic capabilities framework, a consulting firm such as Accenture can use the Metaverse as an enabler for sensing opportunities and threats, seizing strategic advantages, and transforming its business model to serve clients using this digital tool.

2.3.2 First Mover Advantage

Several consultancies are urging fast adoption of the Metaverse to gain a first-mover advantage (Lieberman & Montgomery, 1988). "Firms can select a business environment or be selected by it: they can also shape it" (Teece et al., 2010, p.191). Paul Daughtery (2022), Group Chief Executive Technology of Accenture, claims that companies that do not create their own Metaverse world will soon be surrounded by Metaverse worlds created by others with alternative purposes.

A further consideration is that new technologies are often not fully understood in their initial iterations. Then, it can be best to produce in-house tailored solutions since it is often hard to communicate the most vital technology attributes to suppliers (Christensen, 2001). In the early stages of Metaverse development, industries should establish small, multi-centered, decentralized Metaverse ecosystems (Deloitte China, 2022, p. 6 f.). An example is the Accenture in-house Metaverse meeting-platform developed with internal engineers (Warnke et al.,2022). Firms that are quick to embrace the Metaverse may make mistakes, encounter technical challenges, or invest heavily in platforms that do not gain widespread adoption.

Second movers learn from the experiences of early entrants and tend to avoid missteps, thereby making more informed decisions regarding strategies (Kopel & Löffler, 2008).

3 Methodology

3.1 Research Design

The newness of the Metaverse and its growing relevance in the consulting sector makes it a worthy topic for investigation through qualitative data collection. Qualitative research is known for its in-depth analysis, potential to find new insides, and the possibility to explore a phenomenon from the viewpoint of participants (Gioia et al., 2012; Orb et al., 2001).

In this study, a qualitative and quantitative data analysis was applied to elucidate the following hypotheses:

H1: It takes longer than anticipated by many consulting firms to implement the necessary internal and external structure to meet the current Metaverse objectives.

H2: Consulting and many other companies face internal and external technology acceptance problems and should adapt their dynamic capabilities accordingly.

H3: Business students who want to enter the consulting industry lack, for the most part, knowledge about the Metaverse.

Finally, qualitative and quantitative research was conducted to improve the study design, a triangulation between the literature review results (Denzin, 1978; Patton, 1990).

3.2 Qualitative Data Collection

The analysis was performed according to Mayring's guidelines (2000). For qualitative data collection, the work of Kallio et al. (2016) was used to identify why semi-structured interviews are a suitable research methodology. Semi-structured interviews offer the advantage of exploring motives, convictions, and attitudes. Furthermore, they enable the researcher to evaluate the interviewees during the interview and observe non-verbal indicators (Barriball & While, 1994). The flexibility to ask follow-up questions facilitates collecting situational data (Turner, 2010). The interview questions and summary of the interviews can be found in Appendices A-M. The interview questions aimed to discern application of the management models using proxies that pertain to the phenomena: "Technology Acceptance, Dynamic Capabilities, Diffusion of Innovation and First Mover Advantage". Interviewees were

predominantly experts in the Metaverse area. The list of individuals interviewed via video call from October to December 2023 is as follows:

Table 2: Interviewees

	Position	Reason for Interview
E1	Metaverse Experience & Innovation Lead	Metaverse consultant at one of the Big Four consultancies (in Germany)
E2	Global Lead Metaverse Lab	Global Innovation Lead of the Metaverse Lab at one of the Big Four consultancies (in the US)
E3	Metaverse consultant	Metaverse consultant at one of the biggest technology consultancies (in Austria)
E4	Industry Insights Lead Technology, Media & Telecommunications	Consultant for Metaverse experience and Innovation Lead at one of the Big Four consultancies (in Germany)
E5	CEO	CEO of a Metaverse boutique consultancy (in Brazil)
E6	Partner in charge for innovation	Partner in charge for the innovation division at one of the Big Four consultancies (in Australia)
E7	CEO	CEO of a Metaverse boutique consultancy (in Germany)
E8	CEO	CEO of a Metaverse boutique consultancy (in Switzerland)
E9	Metaverse consultant	XR/Metaverse consultant at the internal consulting division of an insurance group (in Austria)
E10	Metaverse consultant	Metaverse consultant at one of the biggest technology consultancies (in Finland)
E11	Strategy consultant	Consultant at a big IT-management consulting firm (in Germany)
E12	Strategy consultant	Consultant at a German boutique strategy-consultancy

3.3 Qualitative Analysis

The interviews were conducted with ten Metaverse consultants and two normal consultants. All were aged between 24 and 60 and of seven different nationalities. Of the eleven interviewees, only one was female. Deductive and inductive categories were formed according to Mayring's qualitative coding analysis (Figure 5) and analyzed under the fitting management theory. Further sub-categories were aggregated for simplicity and fused with the first sub-code level. Further details about the first two code levels can be viewed in Appendix O.

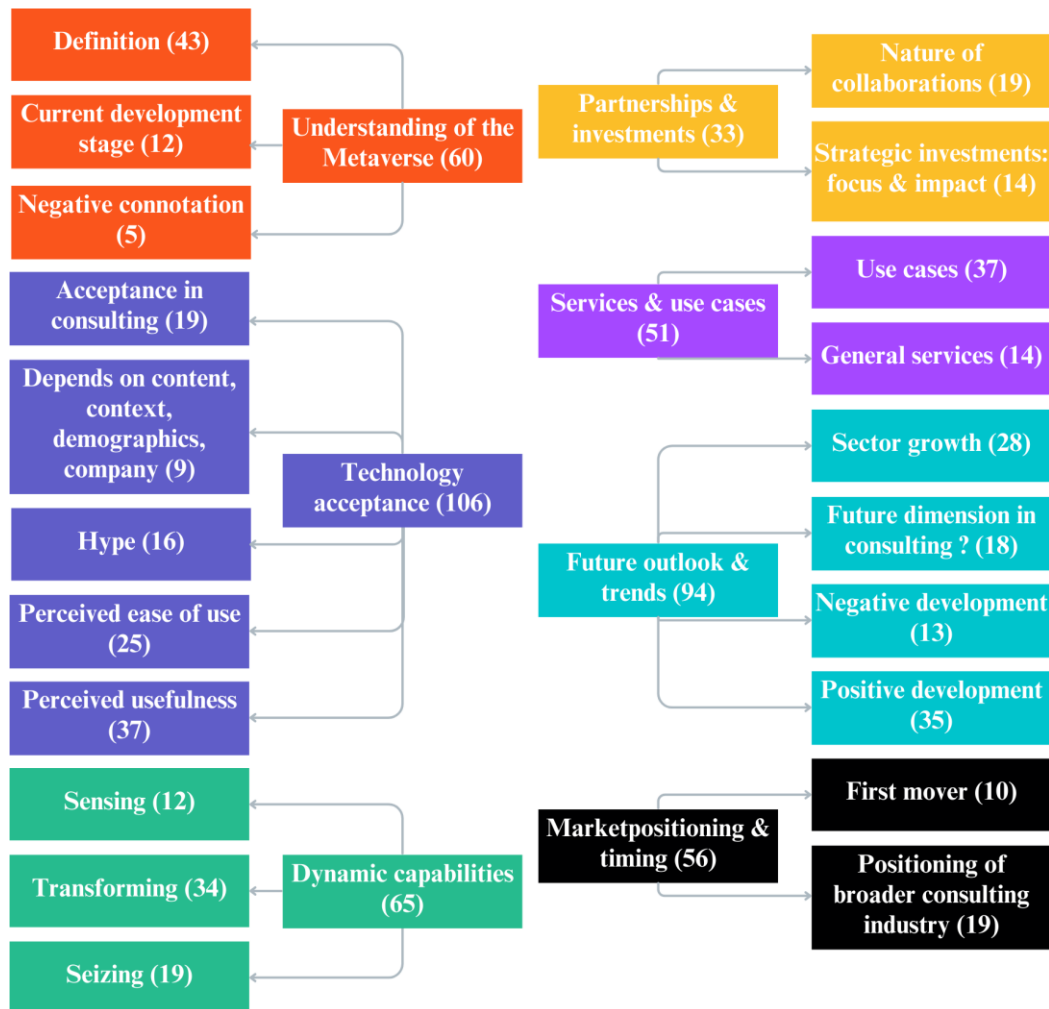


Figure 3: The top 2-levels of the code structure

3.3.1 Understanding of the Metaverse

The interviewees were first asked about their understanding of the Metaverse. This category was mentioned 60 times, including sub-categories. Some experts understood it to be “*the evolution of the internet to become more 3D, more spatial and more immersive*” (E2) or virtual/digital space with diverse technological applications (E3, E9, E11, E12). Expert two stated that as long as you “*have a network and connected 3D internet, that is the Metaverse*” (E2). Misconceptions often occur about what is Metaverse (E3, E4, E8). Those are also caused by changing terminologies due to negative connotations: “*Apple, in all of their releases, wanted to use spatial computing*” (E10). Negative associations with the wording were evoked through the decreasing reputation of Meta (often confused with the Metaverse) (E4, E7, E12). In addition, many people believed there is more than one Metaverse. As E3 states (and is further supported by E1, E4, E9, E10):

“*It is only one Metaverse and not several Metaverses. And even if many things still seem very separate today, at some point they will merge*” (E1).

Expert one saw that as a possible outcome if platforms are based on HTML, working similarly to websites. The Metaverse is estimated to be in an early development phase comparable with the beginning of the internet (E10) or the first iPhone (E9). The successful applications are still rare, and many companies are at the beginning of the development (E8). Most have not even arrived in Web2 (E8).

3.3.2 Technology Acceptance

The acceptance in the consulting industry and overall acceptance depends on factors such as the content of the Metaverse, its perceived usefulness, the implementation context, demographic characteristics, and the company and company culture (E1, E2, E4, E5, E9, E10). *“It depends on the corporate culture and the people in charge, the decision-makers”* (E4), as well as age:

“You can easily establish a relationship between people's age and, not expertise, but how easily they can deal with it. And also acceptance” (E9).

Examining the code “Metaverse in the consulting practice” showed the varying perceived usefulness of the Metaverse in the consulting branches. Some consultants acknowledged great potential for specific use cases, while others approached the topic more skeptically. The advantages of those technologies appeared to lie predominantly in improved collaboration of decentralized teams and more efficient, cost-saving customer interactions such as workshops in virtual rooms (E7).

However, the *“acceptance is not there yet. And there's still a lot of trial and error going on in terms of people working out the applicability of the technology and how useful it is practically in the delivery of the day-to-day work”* (E6).

As for the current state, it was held not to offer much tangible value for most internal uses compared to other technologies, such as Generative AI (E4, E7). Interviewee 11 doubted that VR glasses would find a broader application in consultancy because communication is often effortless via traditional means (E11).

There was currently no broad acceptance of the Metaverse in consulting due to a lack of practical usage and necessary development (E11, E10, E9, E6). The causes traced to several factors, such as older employees struggling to adapt to new technologies (E2), a perceived lack of empathy, and human interaction in the virtual world (E12). At higher corporate levels, it is

often not yet established as a competitive tool (E12). Consultancies not specialized in the Metaverse have barely touchpoints to it:

“In terms of digital transformation [...], I have absolutely no touchpoint or see any added value regarding the Metaverse” (E11).

It was emphasized that it would take time to develop resourceful structures to gain relevance in the Metaverse (E3, E4).

Technology acceptance is strongly determined by the “perceived ease of use.” This code, including further subcodes, was mentioned 25 times. Technologies should get more mature and less complicated to find broad applications within their firm and consumer usage and implemented standards (E8). Users are used to using well-developed technology. This is a standard not yet reached in many applications of the Metaverse (E5).

“The maturity of the technology isn't there, and the experience isn't quite there yet, too. Like the headsets are reasonably heavy, you can't wear them all the time [...] as an individual, the barriers to entry are a lot” (E6).

In addition, the technologies often have incompatibility issues between different platforms and hardware and are complex in their usage:

“It has interoperability challenges at the early stage of its development, and those interoperability challenges will go away with time and with maturity.” (E2).

That is the cycle of all technologies, and in their early stages, even Cloud and AI were complicated, improving with time (E2). Even EU legislators are working on making the platforms compatible with each other (E3). Adoption problems, such as dizziness of using VR devices, will likely disappear since companies like Apple are pushing new and improved hardware into the market, such as its newly released VR glasses (E6).

The code “complexity” of the Metaverse was mentioned 13 times. The complexity differs between platforms, software, and hardware applications but is perceived by the experts as high since there are no standards (E8, E9, E10). It further depends on whether it is an augmented reality-, a web-based-, or a virtual reality application, and the type of network and the accessibility of it (E9). Platforms such as Roblox, Decentraland, and Sandbox are eminently complex for users, whereas gaming platforms such as Fortnite are more accessible (E9).

Since various technologies are involved, many consultancies address the educational part of the Metaverse: *“We have split the consulting part and the education part into two different services” (E7).* The complexity of approaching the Metaverse as a company is very high as they have to decide how to position themselves (E3, E4, E5, E7).

The code “Perceived usefulness” was mentioned 36 times. One of the challenges to increasing the perceived usefulness is to “find meaningful applications” (mentioned seven times). Those should bring real practical added value since realizing Metaverse applications incorporates considerable costs (E11). Often, use cases were perceived as mere proof of concept applications (E9). Successful use cases are rare, especially in business processes and medicine (E8). A substantial need incorporates educating customers on why the Metaverse is relevant and how they can profit from it. Relevant application areas should be identified, and companies should be supported in developing and implementing those use cases (E3, E5).

Concerns influencing the perceived usefulness were included under the code “skepticism.” Many people are defensive towards new and elusive technologies (E7). Lack of understanding of the technology leads to doubt that the Metaverse presents a technology of the future (E5, E10). Skepticism is widely spread in the German market and at management levels (E7). The reasons are “adoption barriers” (mentioned 14 times), such as the technology and costs. Customers have a high price sensitivity due to high interest rates, energy prices, and a recessionary economy (E12). Some viewed the added value of the Metaverse as too low in comparison to the costs (E11) and often underestimate costs:

“But even then, customers think, what? 70.000? [...] people underestimate how expensive it is to produce a platform like this” (E9).

Many people also don't own VR-headsets as they are perceived as too expensive, clunky, and immature. This, in turn, reduces the development of use cases (E10). The resolution and price should be improved first (E9, E10).

Overall, the code “positive” was mentioned eight times. *“The interest is great”* (E8), and compared to other innovative digital concepts, the Metaverse seems to be well perceived (E4). According to expert one, the acceptance of the Metaverse is already here. Especially for the younger target groups who will bring their growing acceptance into the working market (E1). Platforms such as Roblox and Fortight have two digit million visitors, already indicating substantial interest in Metaverse experiences (E7, E10). The number of users is lower for business uses, but the possibilities of applications are higher than for any other medium (E1). Acceptance and applications of the Metaverse are higher in industrial applications and defense, where simulations and remote training are essential (E10). In the corporate context, it is helpful to use virtual reality to have a more dynamic and interactive experience that can increase engagement and energy in workshops (E10).

The code “Hype” (mentioned 16 times) shows the contrast between negative and positive perceptions of the Metaverse. Some experts considered the Hype as critical (E1, E4, E7). Enormous expectations have been created that have not been met:

“Like this Gear VR from Samsung, where you put a smartphone in. That was quite funny at first, but after fifteen minutes you thought, that's not it. The first VR glasses. Far too slow, far too expensive, far too cumbersome” (E4).

People have to approach the Metaverse with realistic expectations (E4). In addition, doubt arises about blockchain enforcing itself longterm, despite undergoing a robust hype (E7). Moreover, despite its USP, uncertainty was raised that the Metaverse will distract from current problems and scandals in the consulting industry (E11).

Other experts perceived the hype as beneficial. Consulting companies face huge demand: *“So the hype is huge, and we are overwhelmed with projects” (E9)*. Consulting companies are actively positioning themselves to gain some advantage, indicating the great potential and long-term value of the Metaverse (E2, E9):

“And that's why everyone at the Big Four is invested to a certain extent. And not a little, either. [...] Our US colleagues are somehow investing a billion. Here in Germany, we're investing 150 million over the next three years” (E1).

Expert 9 supported a claim: *“We are the starting point, so to speak, and that's huge. So we benefit from the hype”*. The hype stimulates investments that promote further research and development (E9). According to Expert 2, the Metaverse is a long-term technology trend everyone has to deal with. He voiced his frustration about people with no experience in the Metaverse topic, claiming to understand Gartner's hype cycle:

“And those same people will then say to me, the Metaverse is dead. Metaverse is not dead. The Metaverse has just come out of the hype part of the hype cycle. [...] We're starting to see some of the biggest companies in the world make sizeable investments, creating real value with the Metaverse.”

3.3.3 Dynamic Capabilities

The category “Dynamic Capabilities” is divided into three principal codes: “Sensing, Seizing, and Transforming”.

“Sensing” was mentioned 12 times. Most consultancies apply a dynamic approach to discover new market opportunities. General market- and consumer trends should be analyzed to make informed decisions about their market strategy (E2, E7). Consultancies tend not to have a fixed analysis approach specifically for Metaverse trend scouting:

“We have approaches in-house for identifying and structuring trends [...] But we don't break that down again for the Metaverse” (E4).

It is more of a signal approach by looking at cross-disciplines (E6, E7, E8), market research, and involving stakeholders (E8). It needs more time and larger dimensions of the Metaverse to tailor a structured process such as trend scouting (E4, E7). Expert 2 mentioned that he is applying deep scientific research methodology instead of employing business/innovation theories: *“Understanding market trends, socio-economic trends, consumer trends, technology.”* Based on those signals, hypotheses about future potential and new business models are formed through thorough validation processes such as client conversations around a particular scenario, lean Canva creation, and prototyping (E6, E8). This approach shows similarities to startup dynamics (E9). In addition, it is vital to scan and network with competitors such as BCG and McKinsey (E9).

The code “Transforming” was mentioned 34 times. The formation of specialized teams and internal divisions (labs or hubs) is a central aspect of the dynamic capabilities of larger consultancies (E1, E2, E4, E9). Large consultancies actively invest in implementing digital innovation centers, which inspire new work approaches: *“We have currently 30 experience centers worldwide”* (E1). These centers are oriented toward the latest trends and reflect the engagement of consultants to adapt constantly to the changing conditions of the digital environment. The composition of teams is also noteworthy. Experts such as game developers, animators, 3D modelers, and crypto-specialists show how consultancies form interdisciplinary teams to meet the requirements of the Metaverse (E2, E4). The expertise is aggregated in smaller teams, often separate from the rest of the firm: *“The core of those who deal with this topic is relatively small”* (E4, E9).

The integration of the Metaverse in areas such as onboarding, training, and recruiting shows a profound change in company dynamics. The Metaverse-platform of PwC allows for efficient communication, and interaction, improving working processes:

“You can actually work within the platform we can work with the tools we use in our daily business. And because it runs on our own infrastructure, we are also allowed to do so for legal reasons. And that is actually a huge advantage at this point” (E1).

To convey the company culture/values immersively, some consultancies use training programs, onboarding, recruiting, and events in the Metaverse or have it on their roadmap (E1, E2, E8, E9, E10). First-hand experience in Metaverse platforms offers familiarity and insights into its potential for stakeholders:

“We don't just show internally what's possible, but that the customers have seen it and experienced it once” (E8).

Furthermore, large consultancies offer general “Internal workshops, masterclasses, education, and newsletter” (E2, E3, E4, E6) to ensure

“a certain awareness and understanding of the Metaverse throughout the company, so that use cases can be created in any area and there is an understanding of the relevance of individual use cases” (E3).

Boutique consultancies, instead, often have a learning-by-doing approach (E7, E9) and directly employ people with valid knowledge/ freelancers according to the project (E5).

To establish the necessary structures, all experts enter partnerships. The code “Nature of collaboration” under “Partnerships and Investments” was mentioned 19 times. Large consultancies have established partnerships: *“We are a major global partner of Meta”* (E1). Collaborations are often entered into with hardware manufacturers that supply HoloLens, Apple Vision Pro, and Microsoft Mesh Platforms (E8, E10). Other partnerships are with service providers specialized in creating digital platforms or digital twins (E3, E7, E10) or consultancies that produce use cases (E3, E9). One substantial technology consultancy constantly evaluates a catalog of over 200,000 startups it could collaborate with (E10). Through partnerships, consultancies also profit from the network effects (E2, E9). Not all consultancies, however, have established partnerships (E4).

Moreover, the code “Strategic investment: focus and impact” has 14 mentions. Large consultancies acquire further expertise through mergers and acquisitions (E3, E10). Building know-how is a significant investment area for consultancies as they invest in employee training, research, and people (E1, E3, E4, E5, E7). Another focus was on platform development, prototyping, and the development of use cases (E1, E2, E9). For the development of platforms, rare and expensive unity developers are required: *“I know some of them in Dubai who get half a million a year [...] that's why it's still steeply priced”* (E9).

The code “Seizing” was mentioned 19 times. To be agile and innovative in the Metaverse landscape, specialized, interdisciplinary teams with a wide range of expertise actively develop solutions based on trends and niches in the market for further differentiation from competitors (E3, E4, E7, E10, E11). Often, they are spread around the globe:

“We have a very, very skilled and competent team worldwide [...] We have hundreds and hundreds of projects already done. We have patents, we have research and development, plus we are the largest in the world creative company” (E10).

Partnerships with external studios and startups contribute to innovative solutions (E6) or customer collaborations (E5). Some big consultancies build their technology in-house without relying on external experts (E2, E10).

The development of Metaverse projects requires thorough resource allocation, and the success of an investment is tightly observed to guarantee profitability (E8). Based on the current economic situation and a shift of interest through the Gen-Ai-hype, the resources are distributed more carefully in some large consultancies (E4). Teams often work mainly independently from the rest of the company, having to reinvest their profits to cover the high development costs (E9).

3.3.4 Service and Use Cases

The category “Services and Use Cases” reflects the broad diversity of general services offered by consultancies in the Metaverse area. Some consultancies offer a complete service that ranges from strategy development to the actual development of finished technological applications such as digital twins and platform creation:

“We use a game engine called Unity to build our custom environments. So we build not just POCs, but we build production quality Metaverse experiences” (E2).

General consultation about specific applications and platforms is also a common practice (E3, E1). Consulting boutiques often focus on conducting workshops promoting education about the topic and are often hired by large consultancies (E7). They focus more on the strategic planning of business models in the context of the Metaverse, supervising but not overtaking the practical implementation of the project. Instead, they identify fitting service partners (E7). Other services include the creation of NFT collections, the creation of 3D worlds, and the implementation of customer-specific projects (E8).

The code “Use cases” was mentioned 37 times. Successful use cases have already been created in blockchain technology, NFTs, and banking (E2, E3, E6, E7, E8). Three large consultancies have developed their own Metaverse platform (E1, E2, E3, E10) that is used for events, meetings, workshops, onboarding, and recruiting: “We hold events and meetings using VR glasses” (E3). One big player is using the platform also for client meetings since it offers high-security standards:

“Because the platform is set up in such a way that we can work with customer-sensitive data. [...] It's all secure and compliant [...] And in principle, we could also carry out an audit on the demo” (E1).

Digital twins and scenarios for the industrial Metaverse are also being conducted by several consultancies (E2, E3, E4, E5, E6, E7, E9, E10) and are “*very obvious use cases that are relatively easy to obtain [...] and are not too difficult to implement*” (E3). Education about the Metaverse is another strong use case. Customers should acquire the necessary knowledge about

the Metaverse to understand what is possible (E1, E9). In addition, the government seeks increasing involvement regarding use cases. Expert Six states that his company conducts a use case about the government's toxic waste management.

3.3.5 First Mover Advantage

The "Market positioning and timing" category mainly analyzes the competitive advantage. Ten experts considered their consulting company a first mover in the Metaverse (E1-E10). Consultancies show a market-forming/influencing function by "*actively investing in it and wanting to help build the whole thing up*" (E3). Engaging companies are proactive and innovative in the Metaverse and won awards (E1, E3, E9). Expert nine presents his company's advancement in the market with many conducted use cases:

"We have now had over 2000 use cases for over a year. That's a lot. So we are already much, much further ahead. We are already building our own training courses. So we are also the platform, we are already winning a lot of awards globally."

The code "Advantages" (mentioned 21) shows that the Metaverse is a topic that will not go away and is developing at an incredible speed. Hence, being at the forefront (E1) and not being left behind is critical (E8, E9). Many opportunities lie ahead, and it is essential to position oneself early on (E5, E7). The advantages of early positioning are an innovative reputation and brand credibility through actual actions (E6). Another advantage is building technical capabilities and technologies to differentiate oneself further on the market:

"Certainly, with the work we've done in blockchain in Australia, we invested really early. We built out the technical capability, and it's a real differentiator for us versus other consultancies who talk about the technology because we don't just talk about it. We've actually built products in it as well" (E6).

Positioning in the market was the main argument mentioned by all experts (14 times): "*We build technology today to best position us for those future needs*" (E2). Smaller consultancies that do not have the necessary funds try to establish a partnership approach instead of building technology (E7). With early positioning comes future monetization: "*The money doesn't flow back immediately, but it does indirectly*" (E3).

Disadvantages concerned the sizeable investments needed with the market still immature (E1). Innovations are often considered risky investments (E4, E5, E6, E8), and innovators cannot know when the space is mature since they are investing ahead of the market (E6). They are responsible for forming the necessary market structure standards, building a network, and taking on social responsibility (E3, E5).

3.3.6 Diffusion of Innovation

Experts had differing estimations regarding the code “Positioning of the broader consulting industry” (mentioned 18 times). Expert 8 considered that “*the consulting industry is still one of the innovators and cannot yet be counted as an early adopter*” (E8). Whereas Expert 9 claimed: “*I would say, early adopters.*” Others stated that the positioning depends on the consulting company, but they are chiefly among the innovators and early adopters (E4). The big players of all specialties quickly catch on since innovation plays a huge role there (E3). Their advantages lie with their infrastructure, technical expertise, and substantial investment capacities (E10). Boutique consultancies, however, are often much more specialized and innovative and can react more agilely to changes (E4, E7, E10). Three Experts (E6, E7, E11) stated that the broader consulting industry is part of the late majority. The reason is that

“your investment horizons and cycles tend to be really short because you need to generate a return in the year in which you invest” (E6).

Larger consultancies mostly have only a small specialized team (innovation labs) around them but tend to react overall very slowly to the market trend (E7). This is not the case for all companies, though. Large consultancies emphasizing technology have the expertise to create technical solutions and infrastructure. They do not only provide consulting but have the technical proficiency to produce technological solutions and infrastructures (E10). It further depends on the field of specialty. Price-oriented consultancies have, for now, little interest in entering the Metaverse (E7), and for some strategy consultancies, “*it won't become the focus in the near future*” (E11).

3.3.7 Future Outlook and Trends

Overall, technology acceptance rises with increasing use cases. The code “Sector growth” was mentioned 28 times. The most substantial growth potential was seen as being in the education, content delivery, and workspace areas since it offers new revenue streams (E1, E2, E3, E5, E6, E7, E8, E11). Software applications and hardware technologies will experience further development and are seen as an enormous future market:

“What I meant earlier about VR training is that the whole education sector will be revolutionized by the Metaverse” (E7).

Some heavy industries will be serious adopters of digital twins, simulations, and automation processes (E3, E5, E6, E7, E11). Other areas with expected growth are general commerce, the gaming industry, the health sector, and the hardware device market (E2, E3, E5, E7, E8, E10).

When asked about a “future dimension in consulting,” most experts see its increasing relevance since companies need implementation assistance from a technological and a strategic point of view (E10):

“The whole world is becoming more digital, it's becoming more immersive, that has to be reflected in management consulting” (E7). Expert nine states: “There will definitely be a separate consulting track. 100%”.

Indicators are creating new positions, such as Chief Metaverse Officers at executive levels or vacancies for Global Head of XR Strategies at Telecom (E9). Others estimate Metaverse consultancy to merge with digital transformation-, and strategy consulting (E5, E7, E8, E11).

Despite positive growth projections (E2, E4, E5, E9, E10), most of the consultants held that the “*Metaverse is a vision of the future*” (mentioned nine times) and is not yet suitable for broad internal use (E2, E4, E8). The evolution of the Metaverse will take longer than most consultants anticipate:

“Ten years rather than five. I think it depends very much on the technological development of head-mounted displays” (E4).

Nevertheless, companies increasingly want to be involved (E4) to build their brand image and signal innovativeness (E4, E9, E10, E11). Expert 6 estimated growing acceptance in the next three to five years. Expert 4, however, viewed it more negatively:

“The VR topic is dead with consumers. That's why people no longer realize that there are really good technological developments.”

3.4 Quantitative Methodology

The survey was divided into five parts. The first aimed at the technology acceptance of students and consultants regarding the Metaverse. This section was based on the UTAUT model. The second part questioned the respondents about dynamic capabilities, followed by the third section aimed at the diffusion of innovation. The last two sections asked about first mover advantage and demographics. Every question was descriptively analyzed, examining averages, medians, and distribution patterns.

In addition, answers concerning technology acceptance were further separately analyzed regarding “Performance Expectancy, Effort Expectancy, Attitude Towards Using Technology, Social Influence, Facilitating Conditions, Self-Efficacy, Anxiety, and Behavioral Intention.” Within the scope of the study, the Welsh Two Sample T-Test was used for the main categories of the survey: “Technology Acceptance, Dynamic Capabilities, Diffusion of Innovation, and First Mover Advantage.” We tested for the difference between students and consultants and in

the second test for people with and without consulting experience. The test was chosen because it is robust regarding assumptions of normal distributions and variance homogeneity. The Levene test was applied to check for heteroscedasticity in the test (Levene, 1960). A regression analysis was conducted to examine the influence of gender, age, and experience in consulting on technology acceptance and readiness to adopt Metaverse technologies. The adjusted R squared was evaluated to see how much variance could be explained through the predictive variables (Theil, 1961). To further check for multicollinearity of the models, the Variance Inflation Factor (VIF) was applied (Belsley, Kuh, & Welsch, 1980).

3.5 Quantitative Analysis

The analyzed data contained 88 responses. 52% of the respondents were male, 43% female, and 5% other. The average age was 24, ranging from 20 to 55. The statistical analysis provides a deeper understanding of the tendencies and variability of the respondents reactions. The questions were posed on a five-point Likert Scale, with the minimal values being one (complete rejection) and the maximum values being five (utter agreement).

The Shapiro-Wilk Test was conducted to see whether the data was normally distributed. The p-value for the sections Q6_mean (Technology Acceptance) is 0.028, and the p-value for the section Q9_mean (First Mover Advantage) is 0.021. Both indicate a deviation from a normal distribution since the values are lower than $p < 0.05$. This could exhibit a low likelihood that the sample was derived from a normally distributed population. However, the W-values were very high, with 0.968 and 0.966, respectively. Values near one usually reflect a normal distribution. Q7_mean (Dynamic Capabilities) and Q8_mean (Diffusion of Innovation) are both consistently distributed since both p-values were more substantial than 0.05 ($p = 0.129$, $p = 0.095$). Those results have important implications for further statistical tests, such as the regression analysis and the interpretation of the study.

To decompose the different dimensions of the survey, all questions belonging to one category were aggregated, and the means were computed. This approach makes it possible to see the general attitude of the respondents towards different aspects of the Metaverse. The average values in the dimensions “Technology Acceptance” (3.061), “Dynamic Capabilities” (2.773), “Diffusion of Innovation” (2.732), and “First Mover Advantage” (3.508) show that respondents have a neutral to slightly positive attitude towards the use of the Metaverse in an academic or professional setting. The dimension “First Mover Advantage” showed a tendency of subjects to recognize the potential benefit of early engagement with Metaverse technologies. Moderate

standard deviations from 1.0 to 1.2 in most areas showed variability within the answers, indicating a considerable diversity of opinions. The median-values of three also reflected equitable thoughts.

Within the range of the UTAUT model, which tested the acceptance and use of new technologies, different subcategories were evaluated to ascertain the respondents' attitudes towards the Metaverse technologies (Venkatesh et al., 2003). The slightly above average values indicated tendential positive attitudes towards the "Performance Expectancy" with a mean of 3.223. This reflected the assessment that Metaverse usage could increase productivity in academic or work-related contexts. Similar positive values were determined for the "Effort Expectancy" and the "Attitude Toward Using Technology" with mean values of 3.129 and 3.303. Interestingly, the mean for "Social Influence" was lower, with a mean of 2.784, showing that external opinions have a lower influence on the decision to use the Metaverse. However, the conditions that would facilitate Metaverse usage were evaluated with a mean of 3.125, which suggested that adequate resources and support are available. "Self-efficacy" received a neutral evaluation (mean 3.068), showing that respondents felt well-balanced within their skills to use the Metaverse. The "Anxiety" to use the Metaverse (here reversely scaled) showed relatively low concerns with a mean of 3.415. Despite relatively low anxiety to use the Metaverse, the "Behavioral Intention" to use the Metaverse within the next 12 months had a low score with a mean of 2.693. This suggests that despite the neutral or slightly positive evaluation of the prior dimensions, the actual usage intention within the next twelve months is expected to be comparatively low.

The analysis showed that consultants had a more positive attitude towards the "Technology Acceptance" of the Metaverse than students. The same pattern occurred for the other categories, "Dynamic Capabilities, Diffusion of Innovation, and First Mover Advantage." The overall mean of all questions combined for consultants was 3.218 and for students, 2.939. Nevertheless, according to the Welsh Two-Sample T-Test, the differences between groups were not statistically significant since the p-values exceeded $p > 0.05$: Technology Acceptance=0.314, Dynamic Capabilities=0.201, Diffusion of Innovation=0.321, First Mover Advantage=0.154). That implied similar attitudes of both groups. These results could signal a general openness independent of the occupation. The test was chosen since it is more robust for outliers and non-normal distributions, which was the case for this study.

Table 3: Table of t-test students and consultants

Welsh Two Sample T-Test for Students and Consultants (Q13)				
question section	Technology Acceptance (Q6_mean)	Dynamic Capabilities (Q7_mean)	Diffusion of Innovation (Q8_mean)	First Mover Advantage (Q9_mean)
t	1.024	1.308	1.007	1.458
df	31.757	30.610	34.460	33.004
p-value	0.314	0.201	0.320	0.154
mean difference	0.166	0.343	0.244	0.373

Furthermore, the analysis revealed notable differences based on consulting experience. People with consulting experience scored a higher mean-value of 3.214 in the technology acceptance dimension than those without consulting experience (2.850). The significant p-value of 0.004 implied that the consulting experience could influence technology acceptance positively. Similar patterns occurred for the proxies used to describe the dimension “Dynamic Capabilities”. People with competence attained a mean of 3.071 (with experience), whereas people without experience scored 2.361. The mean difference was 0.710 and was highly significant, with a p-value of 0.0001 (<0.05). The mean computed for the “Diffusion of Innovation” was 2.976 (with experience) and 2.394 (without experience). The “First Mover Advantage” dimension averaged 3.722 for people with consulting experience and 3.212 for those without. The sections “Diffusion of Innovation” and “First Mover Advantage” had a p-value of 0.002 and 0.013, respectively. Both values were statistically significant ($p < 0.05$). The results showed a strong correlation between consulting experience and a higher evaluation of all four dimensions. A reason for broader acceptance and appreciation of new technologies could be previously gained competence.

Table 4: Table of t-test respondents with and without consulting experience

Welsh Two Sample T-Test for Respondents with and without Consulting Experience (Q17)				
question section	Technology Acceptance (Q6_mean)	Dynamic Capabilities (Q7_mean)	Diffusion of Innovation (Q8_mean)	First Mover Advantage (Q9_mean)
t	-3.023	-4.062	-3.1286	-2.554
df	69.032	85.862	76.79	68.658
p-value	0.004	0.0001	0.002	0.013
mean difference	0.365	0.710	0.582	0.510

The Levene test was applied to check for heteroscedasticity. In all cases, the p-value exceeded 0.5. This concerned all dimensions of the study: “Technology Acceptance,” “Dynamic Capabilities,” “Diffusion of Innovation,” and “First Mover Advantage.” These results confirmed the assumption of variance homogeneity between the groups. This supported the reliability of the results used.

Since the two dimensions, Q6_mean and Q9_mean, were not entirely normally distributed, the robust regression model was applied since it is insensitive toward data anomalies and outliers. For the regression, the averages of every question dimension were used to enable a more precise representation of the whole concept and to reduce variance and white noise. Q6_mean (Technology Acceptance) was considered the dependent variable. Independent variables in the context of the regression analysis were Q7_mean (Dynamic Capabilities) and Q8_mean, which represented the questions about the “Diffusion of Innovation.” The same rationale was used for Q9_mean, signifying the question about “First Mover Advantage.” Gender (Q12_Male), age (Q14...47), and consulting experience (Q17_Yes) were included in the model as control variables to control for confounding factors that could influence the relationship between the principal constructs:

$$Q6_mean = \beta_0 + \beta_1 \cdot Q7_mean + \beta_2 \cdot Q8_mean + \beta_3 \cdot Q9_mean + \beta_4 \cdot Q17_Yes + \beta_5 \cdot Q14...47 + \beta_6 \cdot Q12_Male + \varepsilon$$

The robust regression results showed that “Dynamic Capabilities” had no significant statistical influence on the “Technology Acceptance.” The p-value of 0.090 exceeded $p=0.05$. Q8_mean (Diffusion of Innovation) was statistically highly fundamental at the 0.001 level (indicated through three stars). For every unit that the Q8_mean increased, the technology acceptance (Q6_mean) averaged around 0.373 units under the control of the other variables. Q9_mean was statistically significant at the 0.001 level. An increase of one unit of Q9_mean led to an expected average rise of 0.151 units of the “Technology Acceptance.” The variables gender (Q12_Male), age (Q14...47), and consulting experience (Q17_Yes) were not statistically significant. Their p-values exceeded 0.05. As for the coefficient Q6_mean itself, it was statistically significant at the 0.1% alpha threshold. If all other variables had the value zero, the Y-intercept value was 1.337.

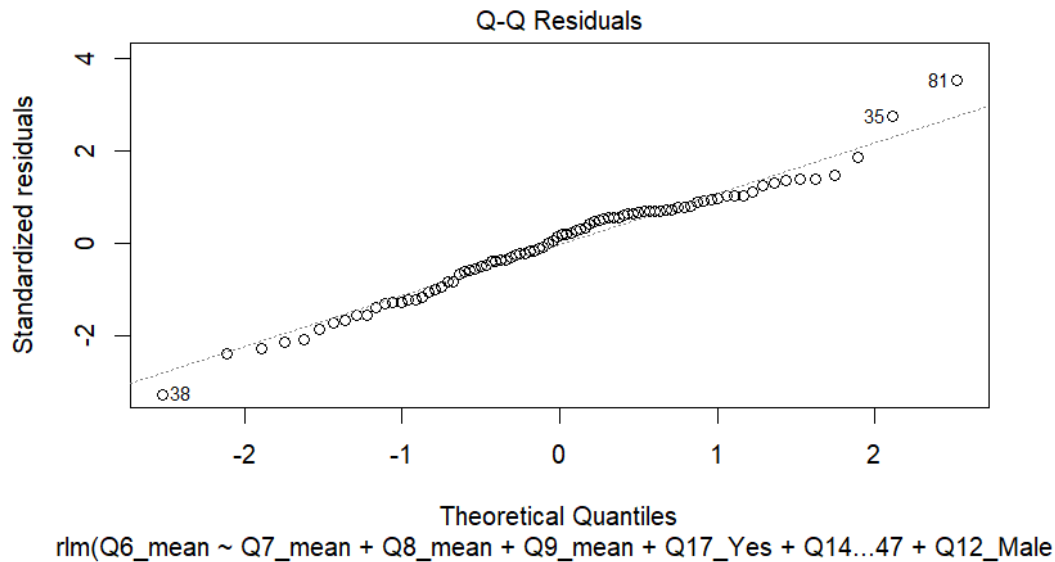


Figure 4: Regression model

To test for possible multicollinearity in a set of predictive variables within the regression model, the Variance Inflation Factor (VIF) was used. The values were the following: 2.605 (Q7_mean), 2.739 (Q8_mean), 1.666 (Q9_mean), 1.057 (Q17_Yes), 1.057 (Q14...47), and 1.204 (Q12_Male). None of the VIF values of the results exceeded the critical threshold values of five or ten (which would indicate a high degree of multicollinearity). The model showed no sign of problematic multicollinearity, and the independent variables were relatively independent.

4 Discussion

The discussion is a triangulation of literature review and qualitative and quantitative analyses. Insights within the context of the question “Metaverse consulting, is it a trend or a hype cycle?” are provided. Peculiar emphasis is put on the previous management models. The goal is to understand how technology acceptance, dynamic capabilities, and the concepts of first mover advantage and diffusion of innovation influence practical adoption and implementation in the consulting industry. The discussion tests the formulated hypothesis and to deliver in-depth insights into the dynamics and perspectives of the Metaverse in the consulting environment today and in the future.

The hypotheses to be tested are:

H1: Consulting and many other companies face internal and external technology acceptance problems and should adapt their dynamic capabilities accordingly.

H2: It takes longer than anticipated by many consulting firms to implement the necessary internal and external structure to meet the current Metaverse objectives.

H3: Business students who want to enter the consulting industry lack, for the most part, knowledge about the Metaverse.

4.1 Technology Acceptance

Within the context of the hypotheses, the analysis shows that consultancy skepticism and optimism exist parallel, influenced by different factors such as demographic characteristics, the company culture, and the working environment (E1, E2, E4, E5, E9, E10). Consultants directly related to the Metaverse perceive technological development more positively than normal strategy consultants. Normal consultants often have no involvement with the Metaverse as the expertise is often bundled within innovation labs and hubs within the Big Four consultancies. The internal uses of the Metaverse are still restricted to virtual meetings, workshops, and onboarding. For a growing acceptance, more time is needed to develop the technologies. Interestingly, however, general consulting experience increases technology acceptance for Metaverse. The quantitative analysis shows that people with consulting experience have, on average, a higher technology acceptance of the Metaverse (mean=3.215) than people without consulting experience (mean=2.850).

Business students who are potential future consultants (Gmac.com, 2022) are more likely to accept and use the Metaverse when they perceive it as positive for their career development. This insight is fundamental for strategy development in consultancy in the context of teaching and including employees without consulting experience. Furthermore, single dimensions of the UTAUT model show that interviewees generally have neutral to positive performance and effort expectations towards the Metaverse, but a low score on usage intention highlights the gap in liking the idea of the Metaverse and wanting to use it.

The perceived ease of use highlights that technologies are still too complex and immature for broader usage in the market. Data and security concerns are another fundamental factor (E10, Hanke et al., 2022). Companies should agree on standards and solve incompatibility issues between platforms and technologies (E5, E6, E8). Companies face the difficult decision of positioning themselves in the Metaverse—a topic where consultants engage through delivering educational content.

Perceived usefulness is influenced by the challenge of finding meaningful applications that deliver valid added value since development costs are very high. Skepticism existed because of the high development costs and missing understanding. Nevertheless, there was substantial interest in industrial applications and within younger target groups. For the future of the Metaverse within consultancy, it is fundamental to develop practical and cost-efficient applications.

Most interviewees acknowledged that the Metaverse is undergoing hype. Expectations have been raised about the Metaverse in several dimensions that, in the end, were not fulfilled. Instead, companies and users should hold realistic expectations (E4). The Metaverse is still in its infancy, comparable to the beginning of the internet, and it takes time to mature (E8, E9, E10, Hanke et al., 2022). Most experts acknowledged the remarkable potential and long-term value of the Metaverse since sizeable investments in research and development indicate substantial interest. Despite doubt about the sustainable development of blockchain from one Expert (E7), there is a strong demand for use cases and many implemented projects in the area of the Metaverse.

The quantitative analysis showed that the overall technology acceptance was further positively influenced by the dimensions of “Diffusion of innovations” and “Dynamic capabilities.” This implies that the perception of innovation diffusions and competitive advantage are important influencing factors of technology acceptance, independent of gender, age, consulting experience, or “Dynamic Capabilities.” The results suggest that consultancies could position themselves better if they consider all those factors in their strategies.

4.2 Dynamic Capabilities

In consultancies, deploying firm resources to respond to the fast-paced business environment i.e., dynamic capabilities, is essential to navigate the Metaverse market. Sensing is fundamental to finding new market chances (Barreto, 2010). Most consultancies follow a dynamic signal approach to identify trends, but a trend-scouting strategy tailored to the Metaverse has not yet been implemented.

Consultancies are slowly transforming their internal working processes to the Metaverse. Large consultancies, such as the Big Four, implemented digital innovation hubs and specialized cross-functional teams within the firm to unite different forms of technical expertise within projects. The labs work mostly independently from the rest of the firms, so normal consultants often do

not have a touchpoint to the Metaverse. However, boutique consultancies specialized in the Metaverse have almost all company employees with experience in the Metaverse. This allows them to offer in-depth expert knowledge and specialized competences within their high-tech sector to differentiate themselves from larger consultancies. In addition to the labs, and hubs, consultancies increasingly onboard their employees in the Metaverse. Training, workshops, onboarding, and recruiting are conducted, often from the firm's Metaverse platforms to increase the technology acceptance among employees. Other ways to transform the company structures are through mergers and acquisitions, a practice consultancies engage in to acquire more expertise. Partnerships with hardware and software suppliers support the development of technologies and use cases. Investment areas to further streamline company structures are technology development, use cases, and knowledge acquisition for employees and experts.

As for the scope of the Dynamic Capabilities, interdisciplinary teams create thoroughly tested solutions and technologies based on market trends. Some consultancies build their technology utterly in-house without external expertise. For that reason, resource allocation is undergoing careful examination.

The results of the qualitative analysis align with the quantitative analysis. People with consulting experience showed a medium degree of dynamic capabilities (3.071). Interestingly, students without consulting experience had much lower values of 2.361, which shows that consultancies do increase the dynamic capabilities of the Metaverse.

4.3 First Mover Advantage

Most consultancies involved with Metaverse topics are first movers. They build the necessary infrastructure, develop technologies and use cases actively, and deliver educational work about the Metaverse. These proactive investments bring the advantages of taking on a leading market position and developing technical expertise. According to Teece et al. (2010, p.191), firms either select and shape an environment or get positioned. The advantages are an innovative reputation and brand credibility. Disadvantages are characterized by the high-risk investments necessary to play a pivotal role in the market. High investment risks are challenging for smaller consultancies, which often should follow alternative strategies such as partnerships. The quantitative analysis showed that students with consulting experience and consultants recognize the first mover advantage the Metaverse offers (mean=3.722). Students without consulting experience had a more neutral evaluation, indicating that experience in the consulting industry does influence the perception.

4.4 Diffusion of Innovation

The theory of the diffusion of innovation contributes to the understanding of the distribution and implementation of the Metaverse in the consulting industry (Teece et al., 1997). Consultancies currently acting in the Metaverse take on the role of innovators. The broader consulting industry, however, can be counted as the early adopter. Tremendous players in the industry, as they want to lead at the front. Consultancies not directly involved with digital transformation topics will likely be part of the late majority (E6, E11, E12). Consultancies depend strongly on the yearly return and have short-cycled investment horizons. Metaverse topics, however, are more likely to generate long-term than short-term returns. Those differences in the adoption speed characterize the diffusion patterns of innovations where different groups take over technologies at various times (Rogers, 1983). The results of the quantitative analysis showed that consultants and students with consulting experience have, on average, a higher value of 2.976 for dynamic capabilities than people without experience (2.395), which demonstrated a medium level acceptance of the Metaverse by people who might have had exposure to innovative technologies. The medium value could explain why some consultancies are estimated to be early adopters and some consultancies belong to the Late Majority based on conservative approaches and short-term investment cycles.

Overall, the services and use cases of the Metaverse within consultancies differ. Larger consultancies in particular offer everything from strategy development to technological implementation. Smaller consultancies focus chiefly on strategic planning and workshops.

Successful use cases include blockchain technologies, NFT collections, finance solutions, digital twins, simulations, education, and Metaverse platforms. These use cases show that dynamic capabilities and technology acceptance are relatively well developed and are expected to increase. According to the interviewees, there is great growth potential in areas such as education, content delivery, and workspace. The government's involvement in use cases indicates the scalability of big global projects such as waste management (E6). Growth projections for the consulting industry are that it will reach \$1,430.14 billion in 2031, possibly significantly helped by the growth of the Metaverse (The Business Research Company, 2022, p.2). Despite positive growth, the Metaverse is still seen as a futuristic vision. Metaverse platforms are not yet seamlessly integrated and suited for broader usage (Deloitte China, 2022, p. 21 f., Deloitte, p. 6 f.). Development will take longer than expected, but acceptance will grow in the next few years. The literature supports this since substantial technology players such as Apple, Google, and Microsoft heavily invest in the Metaverse, indicating further growth

(Deloitte China, 2022, p. 21 f.). As for consulting, Metaverse consultancy will likely merge with digital transformation or strategy consultancy (E5, E7, E8, E11). Overall, the results support all the hypotheses:

H1: The results showed that consultancies face internal and external challenges for technology acceptance and should adapt their dynamic capabilities accordingly. This is depicted through the varying perceptions and usage of the Metaverse depending on the company culture and market development.

H2: Implementing the Metaverse takes longer than expected since technologies are not mature and the acceptance within companies is not widely spread yet.

H3: This hypothesis is partly true. Students with consulting experience show no significant differences towards the Metaverse acceptance and adoption compared to consultants. Students without consulting experience have, on average, not enough knowledge about the Metaverse, which highlights the necessity for further education in that area.

5 Conclusion

5.1 Conclusion

At the beginning of the study, the question was posed whether technology acceptance and dynamic capabilities influence the adoption of Metaverse technologies in consultancy and to what extent technology acceptance appears among consultants and students. Despite skepticism and initial hype, the Metaverse is a long-term trend with growing interest. Heavy industries are strong adopters of digital twins and simulations. Since the Metaverse is still in its early stage, technologies are expected to grow and evolve, especially with large corporations increasingly investing in hardware and software. Metaverse platforms such as Roblox and Fortnite already engage with over 65 million daily active users (intometamedia.com, 2023). However, our results suggested that Metaverse implementation and development in consulting may take longer than expected. Acceptance among companies has not been broadly accomplished, but it will be there in a few years.

Large consultancies often already have their own Metaverse platforms. Nevertheless, further education, value-adding use cases, and technological maturity are needed to gain a broad understanding and acceptance of the technology. The speed with which new technologies are implemented differs among companies. Those who already interact with the Metaverse are

acting as first movers in the market, developing the use cases and infrastructure needed. Internal and external company structures are adapting, forming the company culture, and external collaborations. The broader consulting industry is looking towards early movers. Conservative consultancies are likely to be the late majority in terms of adoption. Consultants and students with consulting experience had an overall more positive evaluation of “Technology Acceptance, Dynamic Capabilities, Diffusion of Innovation, and First Mover Advantage,” indicating that business students without consulting experience still lacked conviction and will need further introductions to the Metaverse.

5.2 Theoretical and Practical Contributions

The study evaluated management models within the scope of the Metaverse. It contributed knowledge about technology acceptance and dynamic capabilities and evaluated the current positioning of Metaverse consultancies and broader consulting. This serves as a foundation for more specific topics of research. The practical implications of this study pertain to consulting firm behavior and managerial strategies for adopting a novel phenomenon. To improve understanding of the Metaverse and reduce skepticism, companies should focus on developing educational programs for employees and customers. Consultants, especially students who want to pursue a career in consulting, need further training to improve knowledge about the Metaverse. Investing in technological development and value-adding use cases to demonstrate the efficacy and increase acceptance are essential. Further adaptation of consultancies internal and external structures is necessary to navigate the dynamic Metaverse challenges.

5.3 Limitation and Areas for Future Research

This study has several limitations. Regarding the qualitative analysis, only 12 experts could be interviewed, which might reduce the generalizability of the results. Nevertheless, the experts were highly knowledgeable and were drawn from a cross-section of key subject areas. Expert responses could reflect selection bias since most are committed to Metaverse technology. The results of the quantitative survey analysis could be biased due to sample size and demographics. Other error terms could potentially influence the dependent variable of the model. For future research in Metaverse, it would be insightful to include more diverse experts. It would also be helpful to target companies conducting projects supported by Metaverse consultants and to explore their experience with the project implementation.

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Appendices

Appendix A: Interview questions

General question:

1. What is your age, your country of origin, and your current occupation?
2. Which current strengths /weaknesses do you see in the consulting industry?

Understanding of the Metaverse

3. How familiar are you with the Metaverse and do you think that it will bring additional dimensions into the consulting sector?
4. How do you rate the degree of complexity of the metaverse and what challenges or advantages arise from its acceptance and application?

Use-Cases & Service-Offerings:

5. What service in the Metaverse area are you offering, and how do they assist companies in its adoption?
6. Which use cases did you implement or plan already?

Partnerships and Investments

7. Ecosystem partners: How are you developing partnerships and where are your primary investment areas to help companies with its adoption?

Dynamic Capabilities in the Metaverse

8. Sensing: How does your company identify chances and threats in the Metaverse market?
9. Seizing: Which resources or strategies do you implement to use those chances?
10. Transforming: How do you adapt your organizational process to the requirements of the Metaverse?

Technology Acceptance

11. Compared to tech trends in the past, how do you rate the perceived usefulness and ease of use of the Metaverse in consulting?
12. To what extent do these assessments influence your current Metaverse strategy and technology adoption?

Skills and Teaching

13. How do you educate your employees specifically to improve technology acceptance in the Metaverse (especially considering different age groups, experience level)?

First Mover Advantage

14. Do you see your company more as a first or second Metaverse mover and which advantages/disadvantages do you see regarding your positioning?
15. At which stage do you believe the broader consulting industry is in the Metaverse adoption lifecycle (innovators, early adopters, early majority, late majority, laggards)?

Market Impact

16. What are your predictions for the market acceptance of the Metaverse in consulting for the next few years? In which sector do you see the biggest growth potential (e.g. industry, military, civil, private)?
17. Can you share insights and main concerns from customers engaging in Metaverse projects or are considering doing so?

Appendix B: Expert 1

<p>Question 1</p> <ul style="list-style-type: none"> • Metaverse Experience & Innovation Lead at one of the Big Four consultancies in Germany, middle aged
<p>Question 3</p> <ul style="list-style-type: none"> • The next level of evolution of the internet and is complementing existing media, interwoven use of virtual and real elements such as NFTs & virtual assets • Metaverse is a three-dimensional world • Current virtual environments are not compatible (like the beginnings of the internet)
<p>Question 4</p> <ul style="list-style-type: none"> • Acceptance similar to the internet: depending on additional value • Differentiation between classical Metaverse and Industrial Metaverse • Critique for the definition “Metaverse” for all interactive 3D experiences
<p>Question 5</p> <ul style="list-style-type: none"> • Own Metaverse space for customer workshops, recruiting events, and other activities • Using the Metaverse for unique market experiences that tie in with the physical workplace and extend it virtually (use AI to develop new forms of interaction)
<p>Question 6</p> <ul style="list-style-type: none"> • Using Metaverse platforms for projects with customers whereby customer-sensitive data can be handled securely and compliantly (the platform is managed by their IT and runs its own infrastructure), the possibility of carrying out audits exists
<p>Question 7</p> <ul style="list-style-type: none"> • Partnerships with several service providers including Meta • Investing in further development of its own Metaverse platform and VR app including the implementation of white-label solutions for customers • Expansion of knowledge and expertise through in-house developments in the metaverse area
<p>Question 8</p> <ul style="list-style-type: none"> • Extensive research over existing platforms before they decided to develop their own
<p>Question 9</p> <ul style="list-style-type: none"> • Experiments with AI in the Metaverse include the interaction with an AI bot • Prototyping and testing of specific use cases for different industries
<p>Question 10</p> <ul style="list-style-type: none"> • The digital office offers integration with project management software and direct access to project documents and presentations, usability for internal teams

<p>Question 11</p> <ul style="list-style-type: none"> • The usefulness and ease of use of the Metaverse varies between the platforms • Many existing platforms appear outdated, especially regarding graphics and avatars • Own platform is a website and hence independent of technology: facilitates the access, tested mainly with Oculus glasses, focuses on usability, brand experience
<p>Question 12</p> <ul style="list-style-type: none"> • Currently development of VR-glass usage for the platform to combine desktop and VR access • Professional branding & interactive user experience in the platform
<p>Question 13</p> <ul style="list-style-type: none"> • Regularly conducting demo sessions for employees to familiarize them with the Metaverse platform, used for customer projects, recruiting, internal events
<p>Question 14</p> <ul style="list-style-type: none"> • Very well positioned in the Metaverse market: heavy inventions into the development and exploration lead to insight and trial in the Metaverse • The possibility of going in the wrong direction is a necessary risk for consulting customers
<p>Question 15</p> <ul style="list-style-type: none"> • Accenture is far at the front through their agency networks and the acquisition of well-known agencies but big inventions such as buying 60,000 VR-glasses are not very sustainable • The “Big Four” invest a lot into the Metaverse
<p>Question 16</p> <ul style="list-style-type: none"> • Metaverse is seen as a permanent development similar to the internet, which is strongly implemented, despite the current hype expected that it stays long-term
<p>Question 17</p> <ul style="list-style-type: none"> • The customer feedback about the platform is predominantly positive • The platform has already been used successfully at various events, got awards
<p>Other</p> <ul style="list-style-type: none"> • This interview was conducted in the company’s own Metaverse • Engagement was conducted via avatars in the digital version of the company office • The platform integrates various digital collaboration platforms in which you can work with colleagues • Digital art collections are observable on the platform • Question 2 was not asked out of time concerns

Appendix C: Expert 2

<p>Question 1</p> <ul style="list-style-type: none"> • Global Innovation Lead at one of the Big Four consultancies in the US, 42 years old
<p>Question 2</p> <ul style="list-style-type: none"> • Consultancies provide innovation and strategy frameworks to help businesses but consultants often do not build technology
<p>Question 3</p> <ul style="list-style-type: none"> • The Metaverse is the evolution of the internet to become more 3D, more spatial, and immersive (can be experienced on technologies such as AR, and VR) • If you have a network and connected 3D internet, that is Metaverse (3D can be also experienced on 2D technologies)
<p>Question 4</p> <ul style="list-style-type: none"> • Depends on generation. a younger generation used to online gaming understands the interaction with the Metaverse better than the old generation → can easily adapt to the technology
<p>Question 5</p> <ul style="list-style-type: none"> • Everything: they build 3D worlds in organizations with diverse teams, and develop their technology: strategy mapping to deployment in production quality environments • Building not just POCs, but production quality Metaverse experience • Web3-0: partner with other parts of the company that have blockchain expertise • Do everything from strategy mapping to building and deployment in production-quality environments
<p>Question 6</p> <ul style="list-style-type: none"> • Have their own Metaverse platform, developed high-end custom technology
<p>Question 7</p> <ul style="list-style-type: none"> • Internal collaborations, not partnerships (long-term) • Usage of technologies from different suppliers but not necessary partnerships • Investments into technology: custom technology, use cases
<p>Question 8</p> <ul style="list-style-type: none"> • It is the future of the internet and the use cases mentioned are already very beneficial • Hype Cycle: Metaverse was in a hype phase which now ended • Frustration over the misperception that the metaverse is "dead"
<p>Question 9</p> <ul style="list-style-type: none"> • Market understanding: Understanding market, consumer, and technology trends and making well-informed predictions at their intersections to optimize positioning • Use scientific- & technological fundament instead of innovation theories
<p>Question 10</p> <ul style="list-style-type: none"> • Internal organizational processes are adapted to the requirements of the Metaverse • Change of the learning and development strategies • Exploring use cases such as onboarding and campus recruiting for internal purposes

Question 11

- Initial perception of new technologies is complicated (example: Ar, VR, Cloud, KI)
- Metaverse is not only restricted to VR but part of today's internet (as accessible as the internet), which can be made accessible over standard devices and normal Wifi
- Interoperation challenges exist with all novel technologies (will decrease)

Question 12

- Technology adoption of tools such as Microsoft Holoens and Microsoft Mesh Platform, Quest VR headset, will use Apple Vision Pro and form specialized teams

Question 13

- Immerse and teach the employees in the Metaverse environment, help them understand global trends that are driving adoption
- Interns are brought into the virtual space & building of use cases

Question 14

- First mover: developing own technologies and platforms

Question 16

- Market acceptance will grow continuously, the hype phase is over and now the technologies will steadily grow (also consulting in that area will grow)
- Healthcare sector and service sector, learning and development
- Established areas: several applications, especially in the area of VR-education are well established and offer good investment returns

Other

- Question 15 and 17 were not directly addressed

Appendix D: Expert 3

<p>Question 1</p> <ul style="list-style-type: none"> • Metaverse consultant at one of the biggest technology consultancies, 28 years old
<p>Question 2</p> <ul style="list-style-type: none"> • Effective companion for corporate changes, offering an external perspective • Focus strongly on monetization and less on experiential innovation
<p>Question 3</p> <ul style="list-style-type: none"> • Focus on digital applications in digital rooms/environments • One Metaverse and not several Metaverse (everything becomes connected) • The stronger network effect of diverse technologies increases long-term relevance • Metaverse integrates many technologies
<p>Question 4</p> <ul style="list-style-type: none"> • High complexity with the integration of different technologies • Current complexity: incompatibility between technologies, simplification necessary → EU legislation is aiming for interoperability of the platforms
<p>Question 5</p> <ul style="list-style-type: none"> • Internal training and education of new employees in the Metaverse • Conduction of meetings and presentations of prototypes, and simulations in the virtual space (improvement of real use cases through real-time integration of data)
<p>Question 6</p> <ul style="list-style-type: none"> • Focus on digital twins in industrial contexts: projects in areas such as industrial plants and production facilities, power generation, automotive industry • Realization of projects with current technology and without excessive expense
<p>Question 8</p> <ul style="list-style-type: none"> • The company does not have a closed list of criteria, observing stakeholders • Currently working together with stakeholders on the initiative “Responsible Metaverse” which considers data security and social implications
<p>Question 9</p> <ul style="list-style-type: none"> • Depends on the consulting project • Diverse experts are bringing their expertise in XR, blockchain, app development • The observation process includes all stakeholders
<p>Question 10</p> <ul style="list-style-type: none"> • Organizational processes are adapted to Metaverse projects which differs from classical consulting projects, the current focus on knowledge acquisition • Relevant experts provide their expertise, and investment into the education of employees to develop an understanding of the Metaverse and use cases
<p>Question 11</p> <ul style="list-style-type: none"> • Innovations and technologies need a development phase and the creation of structures: with evolving structures, the perceived relevance of technology is rising (such as the example of cloud technology)

<ul style="list-style-type: none"> • The ease of use, perceived usefulness, and knowledge have to be still developed
<p>Question 12</p> <ul style="list-style-type: none"> • A productive approach is taken to actively co-create and invest in the Metaverse and to offer the consulting service • Specialized teams and organizational structures were established
<p>Question 13</p> <ul style="list-style-type: none"> • Onboarding in the company Metaverse, using VR glasses to join meetings • Employees who are active within the Metaverse show self-motivation and interests
<p>Question 14</p> <ul style="list-style-type: none"> • First mover: developing actively use cases for monetary reasons and positioning • Actively form and influence the Metaverse market, potential long-term return
<p>Question 15</p> <ul style="list-style-type: none"> • Big consultancies value innovation a lot and will not miss the connection to the Metaverse (even in auditing) • Expected that Metaverse becomes an integral part of consultancy (takes time)
<p>Question 16</p> <ul style="list-style-type: none"> • The Metaverse today is definitely in children's shoes • Growth will be in the sectors of education, commerce, safety, automatisisation, trading, consumer goods • Market acceptance will rise
<p>Other</p> <ul style="list-style-type: none"> • Question 7 and 17 were not directly addressed

Appendix E: Expert 4

<p>Question 1</p> <ul style="list-style-type: none"> • Innovation Lead at one of the Big Four consultancies in Germany, middle aged
<p>Question 2</p> <ul style="list-style-type: none"> • High potential based on geo-economic challenges • Market insecurity has a negative impact, nevertheless no shortage of work
<p>Question 3</p> <ul style="list-style-type: none"> • Skepticism towards the idea of only one metaverse; several digital parallel worlds are plausible • Technologies without immersive (3D/VR) classes are not part of the Metaverse • The Metaverse will complement the consulting industry: disruptive potential
<p>Question 4</p> <ul style="list-style-type: none"> • Potential for innovative digital concepts and differentiation in the market • Acceptance is still low but comparable with early phases of other digital innovations • Complexity high but lies within the selection of platform, education necessary
<p>Question 5</p> <ul style="list-style-type: none"> • The company owns a Metaverse Lab (“Garage”/digital experimentation areas) in the context of Web3 which is collaborating closely with crypto-experts • Lately, the focus has been on educational work regarding the metaverse • Technical implementations were conducted but long term the company is seeing its strength in the strategic consulting area (more the general approach) • Specialized digital consulting boutiques will take over the technical implementation
<p>Question 6</p> <ul style="list-style-type: none"> • Digital factories for customers and technical implementations
<p>Question 7</p> <ul style="list-style-type: none"> • Investment into know-how, real partnerships, and collaboration with big customers
<p>Question 8</p> <ul style="list-style-type: none"> • Metaverse is seen as a futuristic vision: a time horizon of 10 years rather than 5 years • The unit responsible for the Metaverse is small and agile, with flexible processes
<p>Question 9</p> <ul style="list-style-type: none"> • Metaverse is moving out of the focus of some companies due to the hype surrounding generative AI and economic factors, resources could be redistributed • The company has a specialized Metaverse Lab within a Web3-community
<p>Question 10</p> <ul style="list-style-type: none"> • The Metaverse (with the digital factory) stays a special unit within the company and broader organizational processes are not adjusted • Employees get educated via webinars to promote technology acceptance
<p>Question 11</p> <ul style="list-style-type: none"> • The Metaverse is perceived for internal processes in consulting as a future vision

<ul style="list-style-type: none"> • Unrealistic high expectations (needs to be realistic) towards technologies such as VR are leading to disappointments (similar to the current Metaverse-hype) • Older decision-makers in consulting are more careful and wary
<p>Question 12</p> <ul style="list-style-type: none"> • The necessity of a clear strategy: target group and technological solutions have to be defined & experimented with within the Lab (“Garage”)
<p>Question 13</p> <ul style="list-style-type: none"> • Employees are informed via webinars and other education offers about the Metaverse and its platforms, knowledge cafes
<p>Question 14</p> <ul style="list-style-type: none"> • First Mover: The Metaverse-Lab has been fastly established based on existing know-how in virtual and extended reality, the consulting industry is perceived as ready • Despite the first-mover-position, monetization, and economic efficiency are observed
<p>Question 15</p> <ul style="list-style-type: none"> • The consulting industry was in general relatively fast in the adoption of the Metaverse topic, e.g. KMPG, Accenture was not faster but more consequent
<p>Question 16</p> <ul style="list-style-type: none"> • The time horizon for the broader implementation of the Metaverse is estimated to be rather 10 years than 5 years but real-life will not be completely transferred • Technological development especially of Mixed Reality glasses is decisive for technology acceptance, Apple is driving innovation forward
<p>Question 17</p> <ul style="list-style-type: none"> • Customers want to be perceived as early adopters and want to build through the Metaverse a young and innovative brand image • Skepticism towards monetization through direct sale of virtual goods

Appendix F: Expert 5

<p>Question 1</p> <ul style="list-style-type: none"> • CEO of a Metaverse consultancy boutique in Brazil, 32 years old
<p>Question 2</p> <ul style="list-style-type: none"> • Consultants help companies avoid mistakes by providing them with knowledge and insights into the Metaverse (practices often limited to research)
<p>Question 3</p> <ul style="list-style-type: none"> • Combination of social platforms and games with social components such as Fortnite, Roblox, and Sandbox, integration of AR in 3D environments • Metaverse activities will become part of digital transformation strategies
<p>Question 4</p> <ul style="list-style-type: none"> • Comparison with the development of the internet: the necessity of the adoption and acceptance of new technologies, AR, VR offer new possibilities • Skepticism and initial aversion (similar to early stages of the internet) • Huge number of potential users & Apple's market entry is giving a signal
<p>Question 5</p> <ul style="list-style-type: none"> • Marketing & supports the sales of products and services through marketing expertise, aids with the creation of Metaverse experience for brands
<p>Question 6</p> <ul style="list-style-type: none"> • Development of a bibliothecary in the US (enabled with immersive technologies)
<p>Question 7</p> <ul style="list-style-type: none"> • Has plenty of partners, hires freelancers for projects (agility) • Investing time in the acquisition of knowledge
<p>Question 8</p> <ul style="list-style-type: none"> • Has strategic approach which goes back to the fundamentals of innovation and marketing, but apart from that is relatively unstructured/dynamic
<p>Question 9</p> <ul style="list-style-type: none"> • Does not develop anything internally when a client reaches out, doing research
<p>Question 10</p> <ul style="list-style-type: none"> • Leverage own methodology in-house but do not build anything in-house
<p>Question 11</p> <ul style="list-style-type: none"> • The technology is still developing and not fully matured (has to mature also regarding intersection points) and it is still a challenge to meaningful use cases
<p>Question 12</p> <ul style="list-style-type: none"> • Is fully immersed in the Metaverse and hence wants to explore more opportunities (think it will grow a lot)
<p>Question 13</p> <ul style="list-style-type: none"> • No education, hires the necessary free-lancers depending on the project

Question 14

- First mover: leverage opportunities before everyone else but take investment risks

Question 15

- Metaverse consulting world is very early (if specialized in it)

Question 16

- Very optimistic perspective: biggest use cases to be leveraged will be industrial, education, commerce, mental health

Question 17

- Companies that want to engage in the Metaverse have mostly very good reasons to enter it or already have people that know the market well and want to dive into it

Appendix G: Expert 6

<p>Question 1</p> <ul style="list-style-type: none"> • Partner in charge for innovation at a consultancy of the Big Four in Australia, 51 years old
<p>Question 2</p> <ul style="list-style-type: none"> • Regulatory changes: the consulting industry is under increased surveillance due to scandals in the last 15-20 years, especially regarding audit and tax advisory services • General AI technologies lead to the rapid emergence of disruptive innovations in the industry (work more efficiently) that will be increasingly integrated
<p>Question 3</p> <ul style="list-style-type: none"> • Metaverse most extreme form an immersive experience that allows one to leave reality and feel to be in a different location • Broad technology base: technologies such as blockchain and the associated products with that (traceability and transparency solutions, NFTs, cryptocurrencies, etc.) • Different levels of reality: mixed reality, augmented reality, virtual reality, and spatial computing (Apple sort of coined to talk about their forehead) • In consultancy, whole client interactions could change, hiring people, training people on virtual tools and methodologies, frameworks, and reducing carbon footprint
<p>Question 4</p> <ul style="list-style-type: none"> • Conceptual understandings & technical barriers need for technological maturity • Concerns regarding data ownership in the use of consumer headsets • Fast technological development: in companies, VR headsets have to be possibly yearly renewed which creates abnormous costs
<p>Question 5</p> <ul style="list-style-type: none"> • Contract with Australian government: management of transparent toxic waste management including tires, asbestos, and medical waste • Augmented Reality and Mixed Reality: current niche applications, • Challenges: technology barriers such as the headset infrastructure and portability
<p>Question 6</p> <ul style="list-style-type: none"> • Standard business use case: blockchain-based traceability system, toxic waste management, digital twins
<p>Question 7</p> <ul style="list-style-type: none"> • Cooperation/partnership with the government for Toxic Waste Management
<p>Question 8</p> <ul style="list-style-type: none"> • Using a signal approach to recognize new chances and risks of different areas, not only technology but also from social, political, regulatory, ecological, economic, medial, and jurisdictional areas • It follows a validation process with usually ethnographical approaches and starts with customer conversation, hypothesis testing, lean Canva creation, prototyping
<p>Question 9</p>

<ul style="list-style-type: none"> • Ideas and hypotheses are fed into so-called labs, where they are developed into formal business models (sometimes working together with external venture studios to develop and test ideas) • Identify start-ups in certain subject areas for collaboration • Previous thematic areas included the supply chain, the space, and the workspace
<p>Question 10</p> <ul style="list-style-type: none"> • Run masterclasses out of their labs into the firm for a range of different groups inside the firm, do internal advertising: run a fortnightly newsletter
<p>Question 11</p> <ul style="list-style-type: none"> • Early phase in the consulting industry: Metaverse technologies are not far adopted or scalable in consulting (in the experimentation phase), and many consultancies are not involved • Skepticism towards Web3 and cryptocurrency: mixed reputation • Changing terminology: companies use more AR, VR, and MR than Metaverse
<p>Question 12</p> <ul style="list-style-type: none"> • Fast failure as strategy: test hypothesis for new business models rapidly and validate those before you invest into technologies • Trust in blockchain: KPMG relies on blockchain for transparency trust services • Missing clear business use cases: often not yet clear commercial justification
<p>Question 13</p> <ul style="list-style-type: none"> • Run masterclasses out of their labs into the firm for a range of different groups inside the firm, organize specialist trainings
<p>Question 14</p> <ul style="list-style-type: none"> • The company is positioning itself as an early actor in the Metaverse • Early movers have the disadvantage that they invest in a market that is not yet established • Advantages for an early move are credibility and brand building, differentiation, technical expertise for the time when the market matures
<p>Question 15</p> <ul style="list-style-type: none"> • Estimates the general consulting industry to be the late majority • Most consultancies have short investment cycles as a return must be generated within the financial year
<p>Question 16</p> <ul style="list-style-type: none"> • Growing acceptance in the next 3 to 5 years is to be expected • Big growth potential in the area of training and development of soft skills, heavyweight industries (mining, defense, manufacturing)
<p>Question 17</p> <ul style="list-style-type: none"> • Using consumer-based headsets you are agreeing to the terms and conditions of the manufacturers: enterprises do not want to sign up to someone else's terms and conditions and expose their IP, and also do not want to expose clients

Appendix H: Expert 7

<p>Question 1</p> <ul style="list-style-type: none"> • CEO of a German Metaverse boutique consultancy, 32 years old
<p>Question 2</p> <ul style="list-style-type: none"> • Well-educated people with strong methodological competencies but a problematic fluctuating leadership culture with outdated working methods/structures
<p>Question 3</p> <ul style="list-style-type: none"> • Future extension of the current internet, immersive world (merging with digital/virtual), and integration of different technologies • Trend: infrastructure topics such as blockchain and Web3, virtual worlds, hardware • Metaverse as a long-term trend which impacts all companies: necessity of strategies • Likely that Metaverse consulting will fuse digital or strategy consulting
<p>Question 4</p> <ul style="list-style-type: none"> • There is strong wariness towards new technologies since it is not very tangible for most and the idea of the Metaverse complex: starting in companies with education • Metaverse is not yet here but permissible for the future • Many business opportunities, improve business models, create new customer experiences through new technologies, create cost advantages...
<p>Question 5</p> <ul style="list-style-type: none"> • Classical strategy consultancy and education (focus on futuristic technologies) • More project-management approach (connecting customers with technology companies) → accompaniment for implementation but not direct implementation
<p>Question 6</p> <ul style="list-style-type: none"> • Concept paper for Web3 wallet in energy company (energy usage tracking with a crypto wallet), strategy development for bank in the Metaverse • Digital twins, generative AI, function analysis, VR trainings, digital merchandise for football companies
<p>Question 7</p> <ul style="list-style-type: none"> • Focus on cooperation with implementation-related companies such as soft- and hardware producers (act as an intersection) • Partnerships with companies that can develop virtual worlds and VR-trainings • Inventions into know-how and continuous education, hardware
<p>Question 8</p> <ul style="list-style-type: none"> • No structured approach for scanning the market • Focus on dynamic and flexible reactions to current trends and developments • Decisions are often based on the gut feeling
<p>Question 9</p> <ul style="list-style-type: none"> • No streamlined strategy: project individual approach depending on market/needs, look for niches and specific needs for differentiation
<p>Question 10</p>

<ul style="list-style-type: none"> • Own organizational structure very flat/lean which adapts the Metaverse unnecessary: focus more on education and consulting of customers
<p>Question 11</p> <ul style="list-style-type: none"> • Metaverse in consulting improves decentralized collaboration, offers virtual rooms for workshops • The Metaverse is useful for teams that are decentralized
<p>Question 12</p> <ul style="list-style-type: none"> • The goal is to become one of the leading consultancies in the Metaverse • Long-term developments of own virtual worlds, offices, or workshop rooms • The company wants to develop future technologies for the own use
<p>Question 13</p> <ul style="list-style-type: none"> • Learning on the job and through customer projects
<p>Question 14</p> <ul style="list-style-type: none"> • First Mover, unlike big companies faster and more agile regarding new technologies
<p>Question 15</p> <ul style="list-style-type: none"> • Consulting industry in general belong to innovators and early adopters • Variation in the pace of adopting new technologies based on the company size/focus • Technology specialized consultancies faster in adaptation than price oriented ones
<p>Question 16</p> <ul style="list-style-type: none"> • Hardware will develop and gain acceptance • Education sector, AI, industrial use for increased efficiency • Industrial use for increased efficiency and process optimization • General trends: change of traditional job profiles
<p>Question 17</p> <ul style="list-style-type: none"> • Big skepticism especially in the German market and higher management levels • Projects often pursued from younger divisions such as strategy or innovation • Negative associations with the wording Metaverse through Meta • Market acceptance for technologies such as blockchain and NFTs is still unsure

Appendix I: Expert 8

<p>Question 1</p> <ul style="list-style-type: none"> • CEO of a Metaverse boutique consultancy in Switzerland, 49 years old
<p>Question 2</p> <ul style="list-style-type: none"> • Many specialization areas • The consulting sector is resistant to crisis (change) since chances arise from that • Lack of skilled people and know-how (especially Web3.0, Metaverse) • Lacking research and experience in the use of Metaverse technologies
<p>Question 3</p> <ul style="list-style-type: none"> • The Metaverse is the next generation of the internet • Short-term: specialized Metaverse consultancies pop up • Long-term projection: fusion with digital transformation consultancy • Mixed Reality is not automatically Metaverse
<p>Question 4</p> <ul style="list-style-type: none"> • High interest but very few promising and beneficial implementations • Technical challenges through necessary integration of different disciplines into business processes (problems in the Internet bandwidth and the conversion to 3D)
<p>Question 5</p> <ul style="list-style-type: none"> • We have three core tasks: education, concept development, implementation • Diverse implementation options: AI consulting, NFT collections, 3D worlds, or combination: range of services: both consulting and practical implementation
<p>Question 6</p> <ul style="list-style-type: none"> • Most project are at the moment in the development phase, single NFT collections, general consulting, workshops
<p>Question 7</p> <ul style="list-style-type: none"> • Different technology suppliers: examples of providers are Space Realism, Room3D in Berlin, etc. (situative partnerships to serve customers together)
<p>Question 8</p> <ul style="list-style-type: none"> • Stakeholder involvement and good connections in the industry • International activity of the company: through activities in various regions (Asia, Europe, USA), early recognition of trends and movements in the market • No streamlined process for the detection of new opportunities
<p>Question 9</p> <ul style="list-style-type: none"> • Integration of long-term corporate governance • Active implementation and consideration of customer feedback • Step-by-step consideration and evaluation of ideas up to product development
<p>Question 10</p> <ul style="list-style-type: none"> • Transformation process of a project: Evaluation of potential & release of resources, product development, measuring success, performance monitoring

Question 11

- Time horizon is an important factor for underdeveloped technologies
- Compatibility issues and silos: VR glasses and other technologies are not compatible with each other, which reduces usability: need for simplification

Question 12

- Priority is given to understanding the needs and current state of the target group., many companies focus too much on technological aspects
- Pragmatic approach: small, meaningful steps (e.g. NFT-based loyalty programs)

Question 13

- Use virtual spaces for training for hands-on experience and awareness, acceptance
- Experience in the Metaverse should help to reduce reservations and misunderstandings and promote a positive attitude toward new technologies.

Question 14

- First Mover: position yourself but have risky investments (future unknown)

Question 15

- The consulting industry also still belongs to the innovators (not Early Adopters)

Question 16

- Change of terminology could improve the accessibility and acceptance
- Potential in the education sector, travel and tourism, health care, cryptocurrencies, and financial flows, Adoption of the Metaverse in the consulting likely to increase

Question 17

- Main concern: It is a big challenge to bring the customer into the Metaverse
- Industry-specific differences: The acceptance and integration of the Metaverse varies greatly between different industries, emotional and technical hurdles

Appendix J: Expert 9

<p>Question 1</p> <ul style="list-style-type: none"> • XR/Metaverse consultant at an insurance group in Austria, 24 years old
<p>Question 2</p> <ul style="list-style-type: none"> • Steep learning curve due to diverse and rapid project work • Consultants have exposure to many different sectors and topics, accelerated pace for accumulating experience
<p>Question 3</p> <ul style="list-style-type: none"> • Metaverse is a holistic digital platform that is publicly accessible, where different people come together (regardless of hardware) • There are already Metaverse consultancies and + an increase in specialized positions • Metaverse consulting becomes its branch such as strategy consulting (100%) • Most of the actual projects are in the Proof-of-Concept phase
<p>Question 4</p> <ul style="list-style-type: none"> • Broad spectrum from easy to complicated (maximum not yet reached) • Complexity depends on access, network size, and operability • Knowledge and acceptance strongly dependent on age and demographics
<p>Question 5</p> <ul style="list-style-type: none"> • Consulting and project implementation of the following: Onboarding, training, digital twins, VR and AR in medicine, sales & corporate events
<p>Question 6</p> <ul style="list-style-type: none"> • Development of a new platform as a virtual park to get to know the company in a gamified way (do corporate events, training, and onboarding,) • Digital twins: for navigation solution on campus over a smartphone app • Medicine: implementation of VR in medical education e.g. Charité in Berlin
<p>Question 7</p> <ul style="list-style-type: none"> • Several partnerships, one with McKinsey because XXX is one of the most far-reaching insurance companies regarding the Metaverse • Cooperation also with BCG, Meta: use all the network effects and exchange expertise
<p>Question 8</p> <ul style="list-style-type: none"> • Look at what the competition is doing in the global financial service industry (e.g. Ergo which is one of the peonies in the financial service industry when it comes to the Metaverse, or many banks that are in the Metaverse) • Increasingly attend global conferences and events, network with consultancies • Risks: data security, cyberbullying → The company has no measurements against that
<p>Question 9</p> <ul style="list-style-type: none"> • Have a limit for customers and with money they have to make sure to reinvest it to be very self-sufficient. • Resources are very difficult financially since development costs high
<p>Question 10</p>

<ul style="list-style-type: none"> • The newly founded team, works similarly to a startup within a large corporation; high level of commitment and structured trials despite a dynamic market • Adjustments are mainly necessary in terms of speed and flexibility for new developments and collaborations • Team members have diverse (technological) backgrounds • "Learning by doing" is a method to introduce team members without Metaverse experience
<p>Question 11</p> <ul style="list-style-type: none"> • No internal use of the Metaverse • Metaverse technology is situated in a similar phase to the iPhone 1 • Apple's entry into the market with a new headset indicator for the future • Improvements of hardware in resolution and wearing comfort as well as price reductions are necessary, Metaverse will be strongly established in five years
<p>Question 13</p> <ul style="list-style-type: none"> • Onboarding includes an introduction into the Metaverse for all new employees of all departments (get to know the company culture and its products)
<p>Question 14</p> <ul style="list-style-type: none"> • First mover and ahead of than competition with over 2000 use cases • Building on training courses, being a “platform”, winning global awards • Position yourself however you want, otherwise be left behind
<p>Question 15</p> <ul style="list-style-type: none"> • The broad consulting industry is an early adopters
<p>Question 16</p> <ul style="list-style-type: none"> • Metaverse still in its infancy, comparable to the iPhone 1 • Hype promotes investment in research and development, accelerates progress
<p>Question 17</p> <ul style="list-style-type: none"> • Necessary improvements: data protection (in the use of VR/AR), global logistics for hardware, expert knowledge on customer side, reduction of costs • Customer estimations of project costs of 5,000 -70,000 euros are not realistic • Actual offers for the development of a platform are in the millions • Unity developers are rare which is why they often can charge very high prices

Appendix K: Expert 10

<p>Question 1</p> <ul style="list-style-type: none"> • Metaverse consultant at a big technology consultancy in Finland, middle aged woman
<p>Question 2</p> <ul style="list-style-type: none"> • Dependent on the geopolitical situation which might not be a weakness • Tailored solutions for customers are a sign of high qualitative consultancy
<p>Question 3</p> <ul style="list-style-type: none"> • The Metaverse is the evolution of the internet, a three-dimensional internet experience that combines physical and virtual realities (technologies such as AI, XR, VR, edge computing, digital assets, blockchain, Web 3, and cloud-computing are important)
<p>Question 4</p> <ul style="list-style-type: none"> • The complexity of the Metaverse depends on the specific application and design • Swap of definitions: Metaverse applications now often called spatial computing • Examples such as Starbucks are showing how an extensive Metaverse experience can look like (including community building and usage of NFTs) • The acceptance of the Metaverse varies between generations • Acceptance of online events found especially through the pandemic more acceptance (Fortnight 45 million visitors in one day): scalability of events • VR headsets and hardware are in an early phase of acceptance
<p>Question 5</p> <ul style="list-style-type: none"> • The company can create specific softwares, platforms, or hardware • Enormous experience: already hundreds and hundreds of projects done, have patents, research, and development, and is one of the biggest creative companies in the world
<p>Question 6</p> <ul style="list-style-type: none"> • Use cases can include the visualization of complex data such as cash-flow analysis or supply-chain-scenarios in real-time, digital twins, control towers, interactive gaming experiences, training, onboarding in Metaverse platforms, NFTs
<p>Question 7</p> <ul style="list-style-type: none"> • The consultancy is a technology integrator that works with various hardware manufacturers and platforms • Collaborations with platforms for immersive collaborations such as Microsoft’s Mesh or Arthur (they help clients with those platforms for immersive collaboration) • 200,000 startups from different sectors that the company is evaluating
<p>Question 8</p> <ul style="list-style-type: none"> • Global teams with diverse expertise, collaboration with startups
<p>Question 9</p> <ul style="list-style-type: none"> • Mergers and acquisitions and having creative, diverse employees
<p>Question 10</p> <ul style="list-style-type: none"> • Digital offices of the company, creation of expert teams, virtual onboarding

Question 11

- Metaverse is where the Internet was in the 90s
- Metaverse platforms offer virtual meetings, consulting, training, onboarding
- The usage of the Metaverse requires planning and accessibility of VR headsets
- Often easier to just meet via teams (meetings do not have to be thoroughly planned)
- Specific consulting areas such as architecture and data visualization can profit strongly from the visualization in the Metaverse

Question 12

- Partnership forming, Mergers and Acquisition, forming of specific strategies, acquiring knowledge, training in the Metaverse, informal virtual meeting spaces for employees, acquiring thousands of VR glasses for employees

Question 13

- Digital twin rooms/offices offer possibilities for informal meetings and social interactions next to work, onboarding, workshops
- Events are more engaging in the Metaverse

Question 14

- First mover: positioning as a technology company with extensive technical expertise and skills to develop solutions

Question 15

- There are no innovations in the Metaverse that XXX would not be able to implement, nevertheless, smaller companies are diverse and agile
- Other companies that are involved are innovators themselves

Question 16

- Apple TV might launch their original series in VR
- Other dimensions for concerts in the future e.g. via Fortnite: virtual concerts can already host 12 million people online live, a replay may be more than 40 million users
- There are going to be a lot of Metaverse enterprise platforms where you can have virtual meetings, work, training
- The potential of the Metaverse lays in the integration of further technologies such as APIs and generative AI for interactive user interfaces

Question 17

- The misconception that the Metaverse is just a game or only virtual reality (skepticism and resistance towards new technologies often based on missing understanding)

Appendix L: Expert 11

<p>Question 1</p> <ul style="list-style-type: none"> • Consultant at a strategy consultancy in Germany, 28 years old
<p>Question 2</p> <ul style="list-style-type: none"> • Easy and quick management of projects, needs a collaborative approach • Experience is the greatest strength but consultants leave projects too early
<p>Question 3</p> <ul style="list-style-type: none"> • On a scale of 1-10, a six is given for familiarity • The Metaverse is virtual space with interaction through virtual/augmented reality • Sees no added value through the Metaverse for most projects (as it is also very difficult to implement) but for niche consultancies, it can work out
<p>Question 4</p> <ul style="list-style-type: none"> • Despite highly technical topics, the Metaverse is mainly publicity, customers are price-sensitive and consultancies are struggling (no money for the Metaverse)
<p>Question 5 + 6</p> <ul style="list-style-type: none"> • Digital transformation projects but not with real Metaverse applications
<p>Question 7</p> <ul style="list-style-type: none"> • Invest heavily in AI and finance operations, sustainability
<p>Question 8 + 9 + 10</p> <ul style="list-style-type: none"> • Center for digital transformation (they might scan the Metaverse market), do not transform internally for the Metaverse
<p>Question 11 +12</p> <ul style="list-style-type: none"> • Does not think that the Metaverse can distract from scandals in consultancy, despite USP, mainly publicity but not enough focus on topic; has no Metaverse strategy
<p>Question 14 + 15</p> <ul style="list-style-type: none"> • Company is no first mover • Metaverse currently not on agenda, might be relevant for niche consultancies
<p>Question 16</p> <ul style="list-style-type: none"> • Metaverse consulting will remain separately (as Add-on), for traditional consulting not yet that relevant
<p>Other</p> <ul style="list-style-type: none"> • Question 13, 17 were not discussed since the consultancy is not directly involved with the Metaverse

Appendix M: Expert 12

<p>Question 1</p> <ul style="list-style-type: none"> • Consultant at a strategy consultancy in Germany, 27 years old
<p>Question 2</p> <ul style="list-style-type: none"> • Handling complex technological topics requires specialized skills • The cyclical character of the branch and its vulnerability to economic recessions
<p>Question 3</p> <ul style="list-style-type: none"> • The Metaverse is a digital playground for collaboration and product development
<p>Question 4</p> <ul style="list-style-type: none"> • It could bring operative challenges and chances for the consulting sector, especially in areas such as co-creation and improvement of user experience
<p>Question 5</p> <ul style="list-style-type: none"> • Not directly involved in the Metaverse, the focus is more on imminent and practical questions such as data governance and process standardization
<p>Question 6</p> <ul style="list-style-type: none"> • None
<p>Question 7 + 8 + 9 + 10</p> <ul style="list-style-type: none"> • None about the Metaverse
<p>Question 11</p> <ul style="list-style-type: none"> • Currently, the Metaverse is perceived as a niche application • The usability and acceptance depend on the development of convincing use cases • Skepticism towards a broad acceptance in the near future
<p>Question 14</p> <ul style="list-style-type: none"> • No First Mover • The focus is more on established areas such as finances, IT, risk and sustainability
<p>Question 16</p> <ul style="list-style-type: none"> • Not directly discussed but the general assessment indicates of focus on niche areas such as digital twins and simulations, and acceptance depends on use cases
<p>Other</p> <ul style="list-style-type: none"> • Question 9, 10, 12, 13, 17 were not discussed since the consultancy is not active in the Metaverse

Appendix N: Survey Questions

Q6. Technology Acceptance: Please answer 1 (not at all) ... 5 (very much).

Performance Expectancy (Perceived Usefulness)

- Using the Metaverse could help me complete tasks more quickly in my current or future roles.
- The use of the Metaverse would likely increase my productivity in academic or professional contexts.
- I believe that mastering the Metaverse would improve my performance in study-related or work-related tasks.

Effort Expectancy (Perceived Ease of Use):

- Interacting with the Metaverse is something I find clear and understandable.
- I feel confident that I could learn to use the Metaverse effectively without much difficulty.
- Operating within the Metaverse could be achieved with ease.

Attitude Toward Using Technology:

- Adopting the Metaverse for academic or professional purposes is a good idea.
- The integration of the Metaverse would make my work or study routine more interesting.
- It would be fun to use the Metaverse in my academic or professional work.

Social Influence:

- Mentors, peers, industry leaders influence me to learn and use the Metaverse.
- The opinions of my professors, mentors, or colleagues regarding the Metaverse impact my intention to use it.

Facilitating Conditions:

- I have access to the necessary support and resources to use and understand the Metaverse effectively.
- I am confident in my capability to acquire the knowledge and skills for using the Metaverse.

Self-Efficacy:

- I could figure out how to use the Metaverse for completing tasks if there was no immediate assistance.
- I would feel capable of using the Metaverse effectively if I had to fix issues on my own.

Anxiety:

- I feel anxious about using the Metaverse for your studies or work.

- I worry about the possibility of making significant, non-reversible errors when using the Metaverse.

Behavioral Intention:

- I intend to use the Metaverse in the upcoming year.
- I plan to incorporate the Metaverse into my career or academic practices in the upcoming year if it is seen as an important tool within my field.

Q7. Dynamic Capabilities. Please answer 1 (not at all) ... 5 (very much)

- I stay informed about the latest developments and trends in Metaverse technologies.
- I actively seek out information on how the Metaverse is being used in my field of study or industry.
- I am quick to notice and understand the implications of new Metaverse technologies or features.
- I can effectively implement new information about the Metaverse into my academic or consulting work.
- When I learn about new Metaverse technologies, I think about how they can be applied to create innovative solutions.
- I am prepared to adapt my skill set to leverage new opportunities arising from the Metaverse.
- I am confident in my (or my company's) ability to implement changes based on Metaverse technology advancements.
- Even when faced with setbacks, I (or we) consistently pursue the incorporation of the Metaverse into my (our) work.

Q8. Diffusion of Innovation. Please answer 1 (not at all) ... 5 (very much)

- I perceive the Metaverse to significantly enhance my productivity and offer distinct benefits over existing alternatives.
- The Metaverse aligns with my current systems, needs, and personal values, making it a suitable addition to my existing practices.
- The ease of understanding and using the Metaverse makes it accessible without being hindered by its complexity.
- There are sufficient opportunities for me to experiment with the Metaverse on a trial basis, allowing for a gradual and informed adoption decision.
- The benefits of the Metaverse are evident and observable through my own experience and the successful use cases of others.

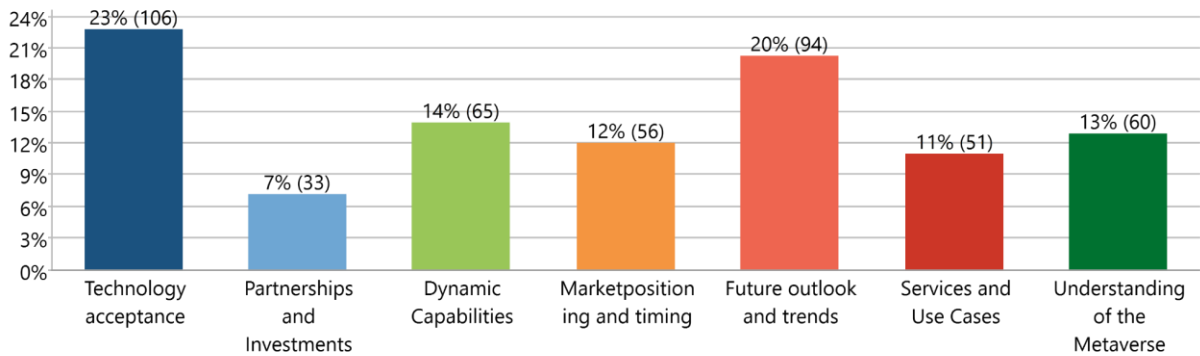
Q9. First Mover Advantage: Please answer 1 (not at all) ... 5 (very much).

- Being among the first students/consultants to master Metaverse technologies will provide a competitive edge in the job market/business environment.
- Early engagement with Metaverse technologies will likely lead to better academic/career opportunities.

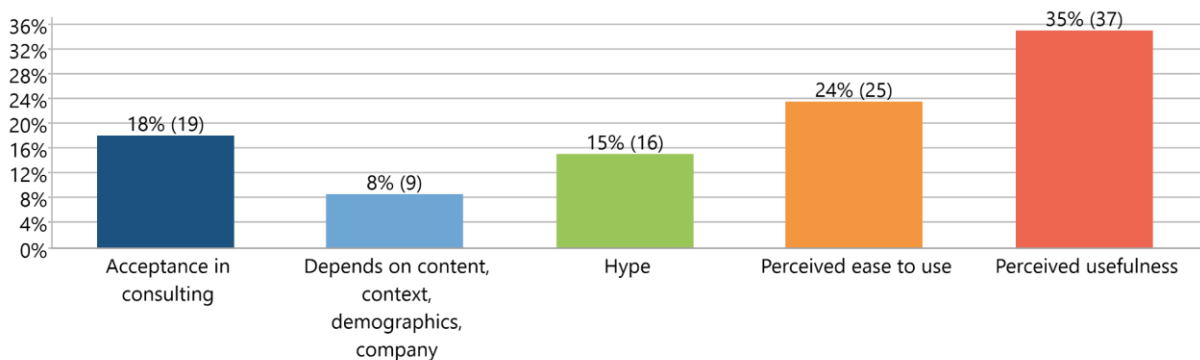
- Engaging with the Metaverse ahead of others will enhance my ability to innovate and contribute to future projects or research in my field.
- For consultants, being a first mover in advising on Metaverse technologies will be critical for client satisfaction and retention. For students, it will be critical for academic recognition and success.
- The risks of adopting Metaverse technologies early are acceptable considering the potential academic advantages/career growth it offers.
- The knowledge and experience gained from being an early adopter of the Metaverse will be beneficial for my long-term academic and professional goals.
- What is your age?
- What is your gender? (male/female/other)
- What is your current occupation? (Student/Consultant)
- If you are a student, please specify your degree level. (Bachelor/Master)
- If you are a consultant, please specify your field of expertise.
- Have you ever worked in consultancy? (Yes /No)

Appendix O: Graphs and Figures

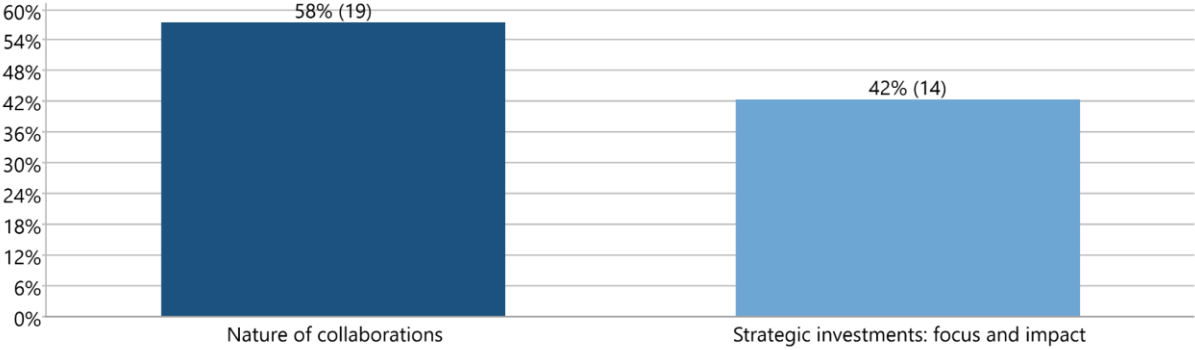
Codesystem



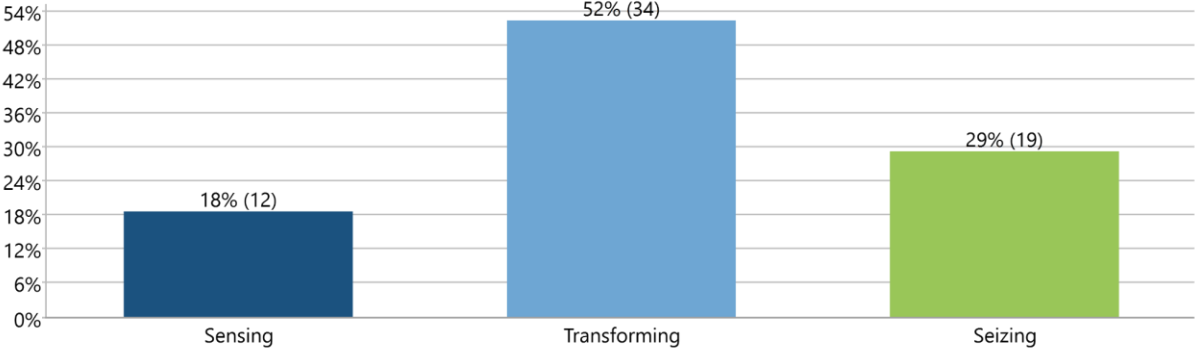
Technology acceptance



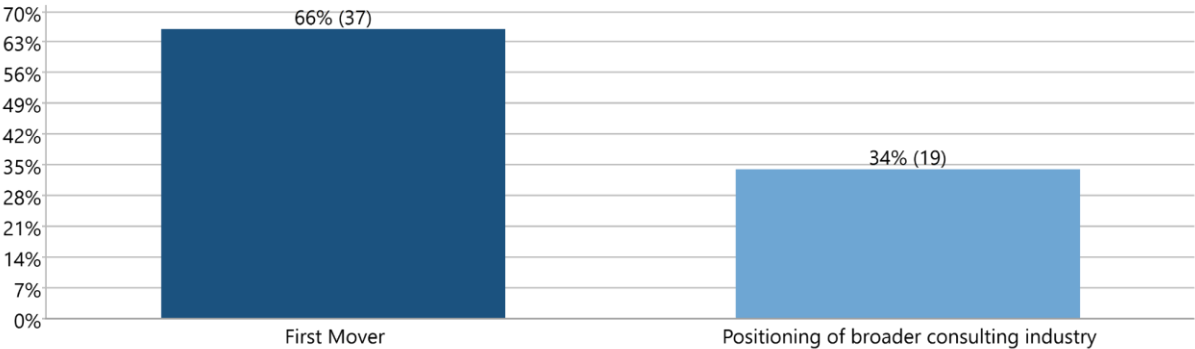
Partnerships and Investments



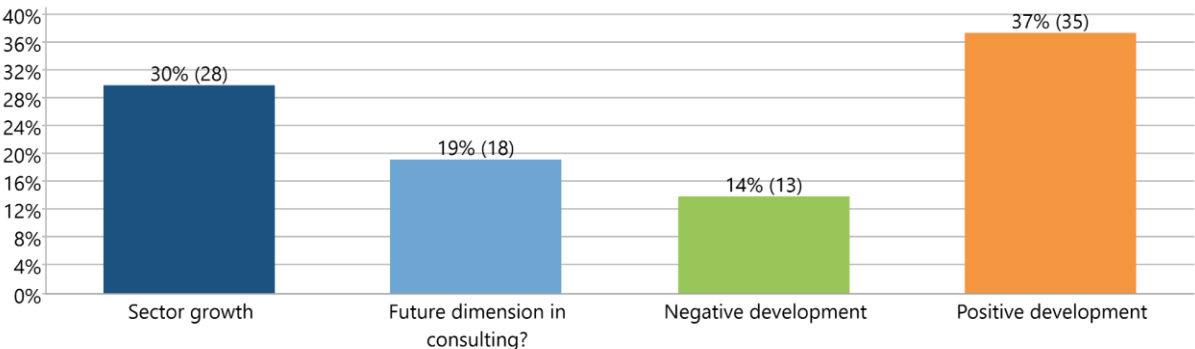
Dynamic Capabilities



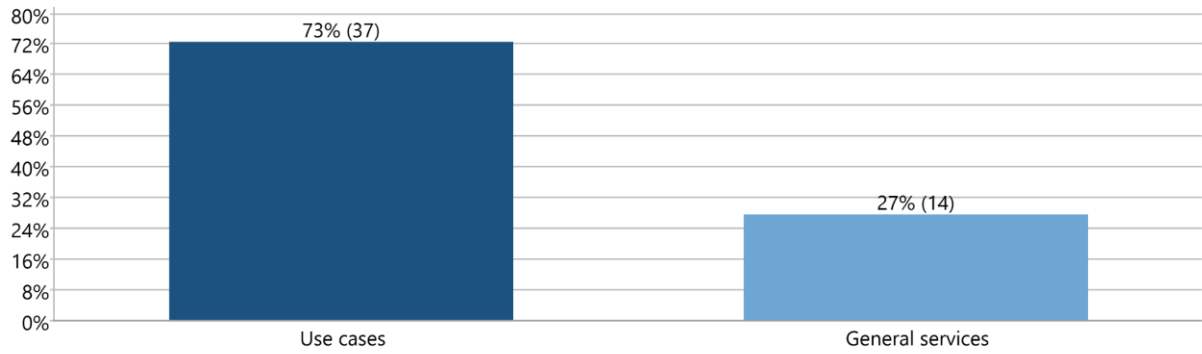
Marketpositioning and timing



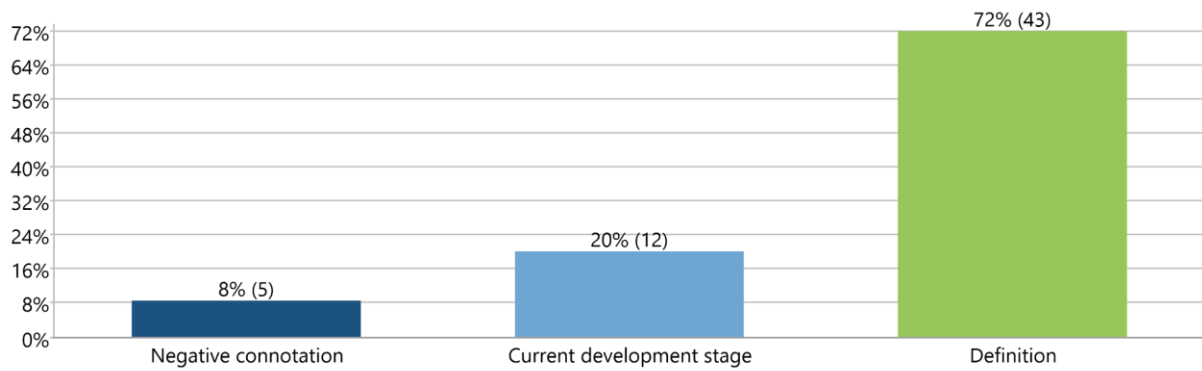
Future outlook and trends



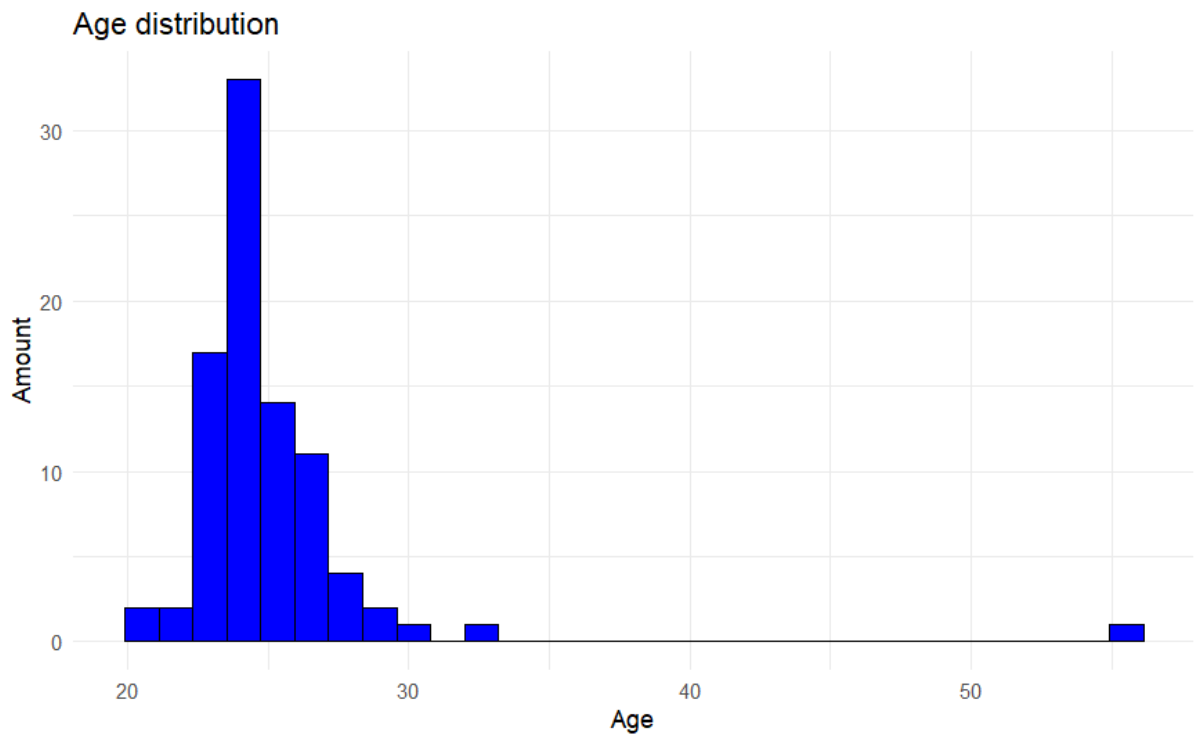
Services and Use Cases



Understanding of the Metaverse



Statistics of the Qualitative Analysis



Summary Statistics

Variable	Statistic	N	Mean	St. Dev.	Min	Median	Max
Technology Acceptance	Q6_mean	88	3.061	0.569	1.316	3.143	4.286
Dynamic Capabilities	Q7_mean	88	2.773	0.921	1.000	2.812	4.625
Diffusion of Innovation	Q8_mean	88	2.732	0.901	1.000	2.800	4.600
First Mover Advantage	Q9_mean	88	3.508	0.929	1.000	3.667	5.00

Regression results

Dependent variable Technology Acceptance (Q6_mean)	
Dynamic Capabilities (Q7_mean)	0.090 (0.059)
Diffusion of Innovation (Q8_mean)	0.373*** (0.061)
First Mover Advantage (Q9_mean)	0.151*** (0.046)
Gender (Q12_Male)	0.041 (0.073)
Consulting experience (Q17_Yes)	-0.004 (0.076)
Age (Q14...47)	-0.003 (0.009)
Constant	1.337*** (0.263)
Observations	88
Residual Std. Error	0.274 (df=79)

Note: *p<0.1; **p<0.05; ***p<0.01