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İŞLETME VE DENEYİM EKONOMİSİ KAPSAMINDA METAVERSE'E BAKIŞ

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Özet

Zuckerberg 'Horizon' projesini duyurduğu andan itibaren, metaverse hakkında en çok konuşulan konu oldu. Metaverse görece yeni bir kavram olması sebebiyle, işletme literatüründe halihazırda çalışma bulunmamaktadır. Bu çalışmanın amacı, metaverse evreninin işletmelere sunabileceklerinin bir analizini sunmaktadır. Metaverse, DNA'sında XR, yapay zekâ, 5G, kriptopara ve NFT bulundurmaktadır. Metaverse kavramını detaylı bir şekilde kavramak için, bu bileşenlere kavramsal çerçeve bölümünde değinilecek ve ardından metaverse fikrinin tarihi ve ardındaki motivasyon ele alınacaktır. Çalışmada, inovasyon, yayılım ve Mavi Okyanus stratejileri açısından metaverse endüstrisi değerlendirilecektir. Metaverse'in yeni bir işletme alanı olduğu dikkate alınırsa, bu alandaki ana oyuncuların, potansiyel endüstri olarak sahip olduğu güçlü ve zayıf yönlerinin, sunduğu fırsatların ve teşkil ettiği tehditlerin tanıtıldığı ve potansiyel pazarlama stratejileri ile deneyim ekonomisindeki rolüne değinildiği bir çalışma işletme literatürünün faydasına olacaktır. Metaverse, sunduğu değer önerisi ile bilgi çağını sanal çağa dönüştürmek üzere hazır bulunmaktadır. Bu nedenle, bu çalışma literatürdeki talebi karşılamanın yanı sıra metaverse ekosistemi için nöro-deneyim pazarlaması denilen yeni bir pazarlama kavramı da öne sürmektedir.

Anahtar Kelimeler: Metaverse, deneyim ekonomisi, nöro-deneyim pazarlama

JEL Kodu: Z30, Z33

AN INSIGHT INTO METAVERSE IN TERMS OF BUSINESS AND EXPERIENCE ECONOMY

Abstract

Since Zuckerberg's announced his project 'Horizon', the word 'metaverse' has been trending. Metaverse is a relatively new concept and hence, business literature currently lacks study on metaverse. This work plans to contribute to business literature through an analysis of metaverse business and what it offers. The DNA of the metaverse is composed of XR, artificial intelligence, 5G, cryptocurrency and NFT. To provide a thorough perception of metaverse concept, its components are introduced in the conceptual framework following an introduction into metaverse's history and the motivation behind the concept. This study will evaluate the metaverse industry in terms of innovation, diffusion, and Blue Ocean strategies. Considering metaverse is an emerging business field, business literature will benefit from a study introducing the key players in the business as well as this potential industry's strengths, weaknesses, opportunities, and threats in addition to potential marketing strategies and its role in experience economy. Metaverse is here to transform the information age into virtual age with its value proposal. Therefore, this study will meet the demand on metaverse in literature and suggests a new marketing concept for metaverse ecosystem called neuro-experience marketing.

Keywords: Metaverse, experience economy, neuro-experience marketing

JEL Code: Z30, Z33

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1. INTRODUCTION

The 20th century had been through a radical change when the internet was introduced to the world as the product of a considerable research development project. It transformed not just the physical world but also the world of business and finance. Since then, it has been playing a major role in any industry varying from defence to foreign trade.

Now, the first quarter of the 21st century is about to expand that technology to create a more immersive experience called "metaverse". This ground-breaking technology will have a similar impact to that of internet; yet even greater. It offers to be the next step in human knowledge in the information age. With the advent of metaverses, humans will not only access to information but also will live in information systems.

Metaverse and its key components will help humanity to step out of information age but into a new age. This new age might be called virtual age, an age of technology in which AR, VR, XR tools will peak thanks to 5G and artificial intelligence.

In order to understand this new age better, one must comprehend what metaverse is and what it offers for the future of business. Following chapters will handle the concept of metaverse within that respect.

1. Conceptual Framework

This section focuses on introducing the concept of 'metaverse' as well as the technologies it relies on. For a proper evaluation of its market potential, it is important to understand how and why the concept of metaverse emerges.

Metaverse is a virtual universe bringing several cutting-edge technologies together to create an immersive experience for the users. Its DNA is consisted of XR, artificial intelligence and 5G for virtual experience and NFT and Cryptocurrency for exchanging goods. A familiarity with these concepts and their market size will enable a better comprehension of metaverse market. As a result, the section will also provide a briefing on these key components.

1.1. Metaverse

Throughout history, humanity has been interested in recording and collecting knowledge since knowledge has always been regarded as the greatest power. The oldest known library in the world was created around 7th century BC in Koyuncuk by Ashurbanipal, the ruler of Assyria and Babylonia and it is assumed to have at least more than 26.000 tablets (Fincke, 2003).

Centuries later, when Alexander the Great wanted to be a world-leader and build a city at the heart of the world; he filled his capital with books to attract scientists all over the world. He designed a city of learning and culture, home to one of the most well-known libraries in history – the Library of Alexandria (Trumble, 2003). Access to knowledge became so important and reputable that the competition soon

started. The library of Pergamum emerged as a rival and suddenly, there was a larger market for papyrus and data. Libraries meant branding for these nations, so the competition became truly fierce when Cleopatra was given 200.000 scrolls from the library of Pergamum by Mark Antony (Canfora & Coleman,1999). Since scrolls from libraries were considered as politically important and valuable gifts, libraries started to play even a larger role in nations as a sign of civilization and growth.

Humanity's desire to know-it-all and to have-it-all eventually gave birth to its first unique creation: a network surrounding the seven continents. Thanks to this new technology, information has been no longer bound to geographical borders. It has now been accessible anytime anywhere. This is the world's first 'global information universe' (Berners-Lee, Cailliau, Groff & Pollermann, 2010: 461) – the worldwide web. This network soon spread its webs everywhere in the physical world. So far, it has helped building the most comprehensive data source ever known and it has been the crown jewel of human civilization.

The worldwide web started a new era in our history, triggering a digital revolution called Industry 4.0 where internet technologies are brought together with future technologies through smart objects to create more efficient production line and manufacturing process (Lasi, Fettke, Kemper, Feld & Hoffmann, 2014).

This trend was followed by another digital breakthrough: the Internet of Things. With digital age creating new opportunities for the smart objects, physical objects were integrated into information technologies so that everyday objects could communicate with one another (Weber & Weber, 2010).

Once man discovered that he is able to design information universes between objects, he wondered whether it would be possible to design more immersive universes for humans, as well. Thanks to improvements on XR, artificial intelligence and 5G technologies, scientists were able to create more realistic small worlds for humans to interact. Soon, they wanted to merge all these virtually realistic worlds into a universe: A universe that is similar to ours in terms of immersiveness but the one that is beyond the physical universe. The term 'metaverse' refers to this ambition to go beyond the physical universe. And this is how the information age is about to transform into virtual age.

Although it is a relatively popular term, it has been on the market as an idea for more than decades. The concept was first coined in 1992 by the science fiction author Neal Stephenson's Snow Crash with its own branding name "Street" (Stephenson, 2003) and later as the "Oasis" in the dystopian novel Ready Player One by Ernest Cline (Nordstrom, 2016). The idea found its true awakening when Hollywood launched such movies as Matrix, the 13th Floor and Vanilla Sky. Ever since, designing a life-like world has been one of the challenging dreams computer engineers and scientists felt obliged to realize.

Gaming industry has had its efforts to design virtual worlds for some Massively Multiplayer Online Roleplaying Games where the players can also socially interact with one another and do not hesitate to spend real money on virtual goods, tools, and devices either for their avatars or for moving onto the next level in the game. Second Life and Project Entropia are some of the finest examples (Schermer, 2007).

Nevertheless, it was the Mark Zuckerberg who placed the term at the top of every meeting agenda when he announced his project "Horizon" during Facebook's virtual Connect conference in 2021 (Roose, 2021).

Metaverse can be described as the virtual internet experience combining XR, artificial intelligence, 5G, NFT and cryptocurrency to create a more immersive experience for the users. This next generation internet technology not only removes the geographical boundaries for experiences but makes the information more accessible than ever. In layman's terms, it can be defined as an information technology system enabling the exchange of information between multiple virtual worlds within a larger virtual system, the universe. It is a universe with its own laws of physics, its own currency, and its own non-physical existence. This project of mimicking our universe in a virtual platform will certainly be widely used, not just by individuals but also by commercial users. Therefore, it is wise to assume that any business enterprise with a website address right now will feel obliged to exist in the metaverse. They will be opening stores, establishing virtual headquarters, having new branches, holding trade events and exhibitions, exchanging products, doing advertisement campaigns, and having business meetings within the non-physical virtual universe.

In a foreseeable future, existence in metaverse will offer competitive advantage as knowledge is still the greatest power. The companies interested in stepping into the metaverse has no choice but to invest in knowledge because it is the research and development that will enable the creation of humanity's next library of Alexandria.

Just like libraries and internet, metaverse will offer power to those who seek for it. It will add value to not just companies but also human interaction. It will be the ultimate signature product of civilization. And if it becomes successful, it will have destructive impact on the industries and change the way people do business.

According to Christensen (2013), in order to launch a destructive innovation, one must find a market to which it can add value. Thus, it might be safe to estimate that metaverse has a potential to transform into a destructive innovation if it ever reaches the same level of diffusion as the internet.

However, in Facebook case, metaverse might also be evaluated as a value innovation following Blue Ocean Strategy. The strategic approach to value innovation suggests sailing in the untapped waters when it is impossible to exist in the competitive market (Kim & Mauborgne, 2005). Considering Facebook's multiple failure to ensure user security, it might be possible to assume that the brand was no longer capable of competing in the competitive waters and it was time to set sail for the untapped waters. According to a report from Edison Research and Triton Digital (2019), Facebook lost its users to Instagram and Snapchat. While 58% of 12- to 34-year-old users preferred Facebook in 2015, this figure dropped to 29% within mere four years.

The brand also had several data breach, which initially cost the customer loyalty for the Zuckerberg's company – especially when 533 million Facebook users' data from 106 different countries was breached (Stokel-Walker, 2021).

However, there are others in the metaverse business who have already adopted the idea and even started to pave the way for it as the innovators and early adopters such as Second Life and Decentraland- each of which is currently a major player.

As an innovation, metaverse's success depends on its diffusion strategy for the future. Like any other innovation, its success will be determined by five criteria set by Rogers (2010). First of all, metaverse needs to be relatively advantageous over its competitor. In other words, it needs to create a relative advantage with its predecessor, the world wide web. It also needs to offer a relative advantage to users such as the idea of a virtual life better than the real one. It also must be compatible with current technologies and information systems. This will enable a smoother operation and contribute to its diffusion. Yet, it also needs to be compatible with universal values so that it can be adopted by a larger number of users soon. Complexity is also crucial. It needs complexity both to enhance immersive experience for the users and not to be imitated by the competitors very easily. However, it should balance this complexity in such a fine tuning that it remains user-friendly. It needs to be triable and observable since creating an immersive model of the physical universe will require expensive research and development studies. If potential users could experience the metaverse themselves or if they could see others experience it successfully, this will enhance its diffusion.

1.2. DNA of Metaverse

Just as the origin of life depends on the formation of co-dependent biological molecules in the form a three-dimensional helix (Pray, 2008); Metaverse relies on the co-existence of some technologies to operate as a three-dimensional life-like database. Its existence is dependent on such technologies as XR, NFT, artificial intelligence and cryptocurrency to operate. In the biological database DNA, hydrogen bonds are used to keep the molecules intact (Pray, 2008). In metaverse, 5G fills in that role by connecting the technologies in a virtual environment.

Technologies playing a role in formation of metaverse's DNA are introduced below to clarify how the building blocks of metaverse works.

1.2.1. XR

XR stands for extended realities offering immersive experiences. It is a term comprising a wide range of technologies such as virtual reality, augmented reality, mixed reality, augmented virtuality (Kwok & Moh, 2020). It is almost a decade-old technology introduced to the world with Oculus Rift VR headset prototype, followed by Microsoft's HoloLens headset. However, it became truly immersive and popular when Pokémon GO was brought into game. Because of game's success, business enterprises decided to adapt the mainstream technology into their marketing strategies such as IKEA Place app (Marr, 2021). When Covid-19 hit the world, XR technology helped the tourism enterprises survive the pandemic with its innovation through creative destruction (Kwok & Moh, 2020). With a market size of $26.05 billion in 2020; the XR market will have already be around $905.71 billion by 2027; which accounts for a compound annual growth rate of 66.02% from 2021 to 2027 (Businesswire, 2021).

1.2.2. 5G

5G is a fifth-generation wireless cellular communication network which will enable data transfer fast enough to support the use of previously unavailable applications such as virtual reality and driverless cars (Childres, 2021). Since its value chain is estimated to reach $3.5 trillion dollar in 2035, with $12.3 trillion of global economic output; its contribution to global GDP will match that of Indian economy (Campbell et al., 2017).

1.2.3. NFT

NFT stands for non-fungible tokens which can be used to trade with the rights for digital or physical assets via unique certificates of authenticity; therefore, it can be defined as technology based on blockchain and smart Ethereum contracts for creating not currencies but assets with unique values (Ante, 2021). This emerging technology is expected to make breakthroughs in gaming industry, virtual events, and protection of digital collectibles (Wang, Wang & Chen, 2021). Currently, it has a quite active market. The sales volume for this crypto asset reached to $10.7 billion from July to September 2021 (Howcroft, 2021).

1.2.4. Artificial Intelligence

Artificial intelligence is a technology enabling computers think, act, learn, reason and self-correct like humans would. The technology aims at creating computers capable of learning from and adapting to the environment so as to function more effectively. For a computer to be considered artificially intelligent, it must learn from its surroundings, store that information, reason through it while communicating with a human in a natural use of language (Kok, Boers, Kosters, Van der Putten & Poel, 2009). According to Grand View Research report (2021), the current market size of AI technology is $93.53 billion in 2021 and it is forecasted to have an income of some $997.77 billion by 2028.

1.2.5. Cryptocurrency

Cryptocurrency has a controversial definition due to its complex nature. It concurs with real money in terms of function. Yet, it differs in flexibility. It is not bound to either geographical or political borders. The European Banking Authority (EBA, 2014) emphasizes its independence from a central bank whereas FinCEN (2013) underlines its lack of monetary attributes. Even the way it is obtained is unusual to any monetary fund. Unique to its own nature, it is computed and manufactured.

Despite the lack of consensus on the definition, cryptocurrency is fine example of Christensen's disruptive innovation as it is a game changer with a potential to shift the balance and to trigger the emergence of new markets (Christensen, 2001). It has a market over $3 trillion now and is expected to grow even more (Ossinger, 2021).

2. Metaverse in Business

Since Mark Zuckerberg announced his metaverse project "Horizon" (Roose, 2021); there has been some significant business activities.

- Nike, the famous sportswear brand, created a metaverse world called NIKELAND where participants can play miniplays such as speed runs or long jumps designed by the creators using NIKELAND tool kit so that visitors will be physically active. Players can visit NIKELAND free of charge and are able to select sportswear from NIKE's collection for their avatars (NIKE, 2021)
- Microsoft launched a metaverse museum for the 20th anniversary of its Xbox consoles where visitors can explore the museum by selecting an Xbox console and learn Xbox's history (Warren, 2021).
- Pokemon Go creator Niantic stated that the company raised $300 million to build a real world metaverse (Adebajo, 2021).

These investments point out that more companies from technology and fashion industry will be flocking into the metaverse soon.

To exist in a metaverse, companies usually seek help from the more experienced metaverse creators. These Californian technology tycoons are current players and leaders in the industry: Roblox Corporation, Unity Software Incorporated, Fastly Incorporated, Autodesk Incorporated, NVIDIA Corporation. Although there are other metaverses available at the market such as Gather.town, Loom.ai, Teeoh, Virbela; Second Life, Roblox and Decentraland are the most notable ones.

Founded by Linden Lab – a San Francisco based company, Second Life is 'the world's biggest programming environment' offering a social environment as defined by Purbrick and Lentczner (2007). Established in 2003, Second Life had some 256k residents just in 4 years (Purbrick & Lentczner, 2007). It created a registered money service called Tilia in its 16th year and started its own virtual economy. Its value proposition is to make a difference in the world through respect, good intent, team building, diversity, and experimentation. Its CEO is Brad Oberwager who graduated from the MBA programme of the reputable business school Wharton in the United States (LindenLab, 2021).

The origin of Roblox dates to a page called Interactive Physics launched by David Baszucki – a Stanford engineering graduate- in 1989. The webpage's initial goal was to enable students learn Physics through experience. Baszucki decided to enhance the learner experience by creating a virtual platform where people can learn and share through experience, and he started Roblox in 2006 with a vision to connect people through shared experience (Roblox, 2021).

Founded by Argentine coders Esteban Ordano and Ari Meilich (The Irish Times, 2018), Decentraland is a virtual reality platform based on Ethereum blockchain. Its currency called MANA was almost about 1 billion dollars in 2021 and it can be described as virtual real estate market where users buy and sell lands over cryptocurrencies with an average land price of 1311 dollars (Dowling, 2021). Its concept is likely to be transformed into the real estate business in the metaverse future.

2.1. Strengths and opportunities

The market is already strong in the gaming industry. The Sandbox, Somnium Space and Cryptovoxels are some of the other platforms with their own cryptocurrencies (Morgan Stanley Research, 2021).

Metaverse offers innumerable opportunities to all industries from gaming to real estate, social networks to fashion. With Nike's entrance into the metaverse ecosystem, it is likely that more fashion companies, Nike's competitors, will be willing to be a part of that ecosystem. Sportswear aside, the metaverse business is an ideal marketplace particularly for luxury brands. First, since some luxury brands are not affordable to everyone, a segment of society will be willing to be engaged with the brand through a relatively more affordable metaverse products or lands. Secondly, luxury brands have customers with such a strong brand loyalty. Considering that 9 NFTs by the famous luxury brand Dolce & Gabbana were sold for almost $6 million, it is possible to foresee that luxury brand customers would be eager to shop in the metaverse ecosystem if offered collectibles. A report by Morgan Stanley (2021) forecasts that luxury groups participating in the metaverse ecosystem will have the opportunity to expand their market size more than 10 per cent.

So far, there have been several luxury brands who stepped into the metaverse ecosystem (Morgan Stanley Research, 2021): (1) Gucci's cooperation with a South Korean metaverse platform Zepeto to create a virtual villa selling products for avatar fashion, (2) Balenciaga's clothing line in Fornite, (3) Ralph Lauren's digital design sales with Zepeto and Bitmoji.

The music industry is also one of the potential markets for metaverse ecosystem. Ariana Grande and Muse are some of the artists whose concerts have been held in a metaverse platform (Morgan Stanley, 2021). These virtual celebrity events offer not only a great environment for advertising and product placement for the event sponsors but also a larger ticket sale since there is no travel restriction.

Metaverses may also open its doors to tourism activities. Those who are anxious to travel to undiscovered worlds or those who are physically or financially incapable of travelling to holiday destinations will be an ideal target audience for the virtual tourism companies in metaverse ecosystem. Space tourism, travelling to Mars are only for a small group of elitists who can physically and economically afford travelling. However, within a metaverse system, travelling to space, to the Moon or Mars will soon be available for everyone at the comfort of their home.

2.2. Weaknesses and Threats

Currently, the number of people who have comprehensive data on how to trade with NFTs and cryptocurrencies is limited. Therefore, it needs more time as a technology to transform into a business environment for small enterprises. Morgan Stanley Research report (2021) also suggests that this is currently a marketplace for luxury brands and since interoperability is years away, it will continue to remain as a marketplace for luxury goods for some time, as well.

As a platform, metaverse will probably be too difficult to comprehend for some generations. It is highly likely that baby boomers and generation X will not adopt the technology very quickly. Even, the

millennials might be late followers. Zoomers and Alphas is expected to be the early adopters. This could lower the market size for some brands unless they target the Alphas and Zoomers initially in virtual advertisement process. However, even the Zoomers may not be ready for a complete digital experience. This is also referred in a study by Wunderman Thompson Intelligence. Since the transition into metaverse ecosystem will still need some time, Wunderman Thompson Intelligence (2021) report suggest that shoppers are not ready to have completely digital shopping experience. According to the quantitative survey carried on 3,011 respondents from the UK, the US, and China in July 2021, 52% of Gen Z, 54% of Millennials, 54% of Gen X and 62% of Baby Boomers prefer to shop in person. Although the statistics point out to a correlation between older age and willingness to shop in person; the unwillingness to shop digitally is still more than 50 percent in all age groups.

Privacy laws and regulatory risks will also remain as a concern (Roose, 2021). Second Life has a contract recognizing user's property right for the avatar and virtual items. However, it is the only one (Roquilly, 2011). Metaverse companies may be facing with serious legal charges if their virtual properties or avatars are stolen or hacked. As the number of platform users increase, metaverse companies may need to expand their legal team in order to avoid financial losses. Ensuring the safety of cryptocurrency wallets may lead to extra costs. Therefore, financial strategies must be planned carefully.

Second Life has a contract recognizing user's property right for the avatar and virtual items. However, it is the only one. More metaverse platforms needs to embrace such contracts for a successful diffusion strategy.

3. Metaverse and The Experience Economy

Although there is no consensus on its definition, experience can be called a recollection of memories with an influence on people's decisions, thoughts, reactions, and identity. Therefore, it is necessary to define what memory is if the experience economy is to be defined.

Memory formation is a biological process. When exposed to a certain stimulus, neurons form new connections to store information and after remaining silent for some time, the information consolidated is stored for a longer period. This is how the experiences are formed in our brain. The hippocampus and neocortex in the brain are thought to oversee the process (Gravitz, 2019). Ekstrom and Ranganath (2018) put forward those experiences are classified into certain contextual categories thanks to space and time and hippocampus evaluates on its relevance. However, there are also engram networks all over the brain. Engrams are the memory tags, biochemical modifications in stimuli product that work like barcodes to trace memory (Semon, 1921). They are active or dormant but stable experience-induced long-term modifications resulting in retrieving the memory and adaptive behaviour when triggered (Josselyn, Kohler & Frankland, 2015). Consequently, memories are formed due to a complex systematic organization.

Despite not being completely understood, these complex memory-making mechanisms in our brain somehow cooperate to recollect all our memories to create experiences which have a deep impact on conscious and unconscious decision-making process. Therefore, in terms of experience economy, the word 'experience' refers to this cognitive reaction or impact triggered by an external stimulus (Pine &

Gilmore, 2011).

Coined by Joseph Pine and James Gilmore in 1999, the experience economy was put forward to suggest that companies can offer and sell more than mere goods and services and that experience is also something marketable and it has a financial value (Pine & Gilmore, 2011).

In the 21st century, experience can be more important to customers than goods and services. With the diffusion of social networking platforms, selfie museums opened in several metropolitan cities and many cafés and restaurants add selfie corners to attract more customers. A study by Mkwizu & Mtae (2018) refers to the correlation between selfie use and domestic tourism. Their research results reveal that selfies are used to promote domestic tourism and contributes to the diffusion of service and tourism industries. Exchanging travelling and dining experience on social media platform is the key reason that attracts the customers to the location in the first place. Experience can be marketed in any form varying from Disneyland to VR museums or from a book reading event to a music concert. Any industry can benefit from experience marketing. Yet, metaverse industry will certainly benefit more since it is all about experience.

Users do not hesitate to pay in cryptocurrencies to enhance their virtual experience in Second Life and Entropia (Schermer, 2007) or to log into a virtual Ariana Grande concert in Fortnite (Morgan Stanley, 2021). It will have massive contributions to experience economy through virtual concerts, museums, tourism activities and even avatar fashion.

Metaverse's success will also depend on its marketing strategies. Experience marketing will have a key role since it enables customers to interact through cross channel exposure and it creates value together with the customer (Petkus, 2004). Pine and Gilmore (1999) refers to experience marketing as a form of entertainment with an escape from the real world, which is directly what metaverse is and will be about.

Nevertheless, metaverse companies should not underestimate the power of neuromarketing, as well. Metaverses are designed to create a life-like world by evoking real life experience through AR, VR and XR technologies targeting five senses. Therefore, monitoring the neural activity of the users benefiting from the platforms will be decisive for the marketing campaigns.

Players will be wearing VR globes and hence, measuring heart rate variability over these gloves will provide data on the user's reaction throughout the platform. Other biometric measurement techniques such as measuring the user's breathing frequency, monitoring facial expressions or galvanic skin reactions (Massaro & Pecchia, 2019) can also give clues to the platform creators about the users' preferences.

Metaverse companies are designing VR headsets for the platform users to enhance the experience. These headsets can be quite beneficial to track the eye movement of the users. Eye tracking data from the headsets can be used to persuade and convince the platform users (Dooley, 2011).

As the concept of metaverse is relatively new in business world, the literature is lacking a marketing model for the metaverse industry. This work recommends a marketing strategy unique to metaverses: Neuro-experience marketing - a combination of experience marketing and neuromarketing techniques to express a unique marketing strategy model for metaverses.

With this combined marketing model, it will be possible to measure the level of user experience through monitoring cognitive and neural activity in live digital content.

Conclusion and Discussion

Metaverse is a relatively new concept in business world. The motivation behind the metaverse concept derives from the man's desire to know-it all and have-it-all. It is the man's utmost goal to store knowledge in a life-like environment. It is a technology which will transform information age into virtual age. Metaverse requires artificial intelligence and XR technologies for designing a universe beyond the physical one, cryptocurrency and NFT technologies for its financial transactions and 5G to keep all these technologies in operation. Therefore, it will be a new business industry with its own currency and trading activity, which will contribute significantly to the experience economy. Although it will be able to provide various industries with many opportunities, baby boomers and generation X will likely struggle to adapt, which would mean losing some potential customers. Moreover, consumers have second doubts about a100 % digital experience. One must also not ignore that cryptocurrency and NFT trading cannot be understood clearly by the public due to their complex nature. In addition to these challenges, creating metaverses is also costly for small enterprises. As a result, the metaverses may remain the zones for luxury brands for some time more. However, this would slow down the diffusion process. On the other hand, this potential drawback can be used as an opportunity. The metaverse platform is ideal for luxury brands who are interested in creating collectibles and will remain so as these brands have dedicated customers.

With a potential to become the future's largest industry, metaverse business needs its own unique marketing strategy called neuro-experience marketing, a combination of neuromarketing and experience marketing methods. With this marketing model, metaverse companies will be able to measure their user's reaction through such gadgets as headsets and gloves the platform users will already be wearing during their visit. This data will help the metaverse companies to create more engaging and immersive experiences for the users. This is how they might be able to fulfil their diffusion strategies, thrive as a new technology and start the virtual age.

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