Abstract: Digital places that are interactive and creative are a natural extension of how people use technology, and they represent the amount of time that many consumers and clients spend online. Applying social media filters on websites like Instagram and Snapchat is a logical extension of the fashion industry in the digital age (Winsor, 2022). Top Fashion Brands and Businesses are often discussed in the metaverse thanks to their success. Gucci and Ralph Lauren were among the first brands on Metaverse. digital avatars, Balenciaga, and Burberry in the Roblox Metaverse. (Mona, 2022) It's possible to characterise this broadly as highly interactive, artistic digital spaces where people work, play, socialise, and shop. There is a lot of curiosity in the metaverse’s potential, despite the fact that its sti in its infancy. It may present opportunities for businesses and the larger fashion industry, and present new opportunities for firms and the larger fashion sector to connect with Gen Z and other tech-savvy, young customers. It's possible to highlight the Khadi Fashion Brand as a Sustainable Luxury Brand, and NFT on the Metaverse. Creating a New business Model for the fashion Industry and implementing it on the Metaverse would be an ultimate challenge for the Khadi Industry. It is essential for our nation’s economy in addition to being important for fashion and aesthetics. Future plans for Khadi (Businessworld, 2022) We have faith that a lot can happen when employing the digital virtual package CLO 3-D digitally for the Metaverse, as of Khadi’s organic and zero carbon footprint nature, It is possible to create an Avatar specifically with a brilliant modern concept for a wonderful Metaverse shopping experience, example H&M 's Virtual reality on the Metaverse. (Metaverse, Virtual Reality, Mona, 2022)

Keywords: Luxury Fashion Brands, Metaverse innovation, Phygital Transformation, Sustainability

1. Introduction

The Future of Khadi Fashion Digital Transformation Business on the Metaverse

Due to the Covid-19 globally, businesses and organizations are dealing with adjustments, difficulties, disruptions, and transformation. Sustainable Development Goal (SDG) 9 refers to constructing resilient infrastructures, encouraging inclusive and sustainable industrialization, and stimulating innovation. Building resilience in Indian industries is essential to sustainability (Patel, A., 2020). (Anke, 2019). On the Metaverse, this might be utilised to advance technology in the fashion industry.

Virtual fashion brands are currently a popular trend on the Metaverse. As the real and digital worlds continue to merge, the "Metaverse," a new era of the internet, is revolutionizing the fashion sector. Balenciaga is a pash brand that is in the front of the shift. Burberry, Balenciaga, and Louis Vuitton are just a few of the high-end labels laying the foundation for a future of fashion in the Metaverse. Burberry, Balenciaga, and Louis Vuitton are just a few of the high-end labels laying the foundation for a future of fashion in the Metaverse. Executives of luxury brands are beginning to understand the possibilities of augmented reality (AR) and virtual reality (VR) in the new frontier of the Metaverse, and they are acting rapidly to take advantage of this new marketing opportunity. The $300 billion gaming industry, 53% of fashion businesses are reportedly spending while experimenting with Instagram effects, digital avatars, and virtual shops. (Romenoni, 2022)

People work, play, interact, and conduct business primarily in the Metaverse, a creative online environment. Although the Metaverse is still in its infancy, there is a great deal of interest in the potential it offers to businesses, particularly those in the fashion sector. In fact, this is a chance to present the modest Khadi Brand and give it a chance to establish a virtual presence on the Metaverse. With the emphasis on luxury, Khadi cotton can be designed as a smart fabric from the very beginning of the warp and weft, with digital transformation also being a major trend in fashion. This can be done by using a virtual 3-D program called CLO 3-D to even create an Avatar for the Khadi Industry in the future.

A fresh impetus for the economy and marketing of the sector may result from people being more aware of their limitations in the face of pandemics and war-related tragedies in the actual world. The interest of brands in the Metaverse is a relatively new development. The fashion industry was faced with the difficulty of creating solutions for displaying collections and maintaining strong brand narratives in the digital arena just two years ago, at the height of the COVID-19 lockdowns. Since then, some well-known labels have embraced cryptocurrencies and non-fungible tokens (NFTs), leveraging the digital sphere to maintain cultural relevance, curate experiences, and expand influence to a completely new, tech-savvy online audience. (Global legal post, 2020)

Haute Couture or Luxury Brands on the Metaverse

After being born in England in 1825, Charles Frederick Worth launched his fashion store in Paris in 1858. Worth's talent was in adapting 19th-century attire into something more practical for everyday use. He was also the first Haute couturier whose designs could be recognised as his clothing. Worth's financial status was significantly helped by Empress Eugenie when she appointed him as her official couturier. She requested and he produced showy evening wear, masquerade costumes, and court attire. For the opening of the Suez Canal, she ordered 250 Luxury Couture dresses in 1869. 2018 (Omotoso)
The next generation of social networks, according to Forbes, is the Metaverse, a Digital Luxury Store that combines the real world and the virtual one. Real-time 3-D software is employed. This might turn into the luxury items and online department store of your dreams. Cyber couture is the newest trend for luxury and haute couture companies, who design clothes and accessories for your Avatar rather than for you.

People establish their online identities through their apparel, just like in the real world. Limited edition computer-designed clothing (or "skins") and accessories for avatars are already being purchased by certain people for a significant amount of money. Nonfungible tokens, or NFTs, serve as the medium of exchange and as virtual proofs of authenticity. An NFT with the Burberry brand was out of stock this past summer. Leading design brands are producing virtual couture so that anyone can change their appearance online, like Gucci and Balenciaga.

A virtual world where users can communicate in a realistic-looking setting has a lot of potential. Many think that avatars will soon take the role of static profile pictures as people's online portraits. Therefore, people would want a carefully selected selection of virtual clothing for their avatars to wear on different occasions. (Forbes, 2022)

High-end clothing's journey across the Metaverse creates new chances for client connection. According to Morgan Stanley researchers, the market for virtual luxury goods might reach $50 billion by 2030 and has already achieved astonishing success. Given the potential revenue and reach of new and younger consumers, there has never been a better time to start planning your brand's entry into the metaverse. High-end digital marketing company Relevance maintains a careful watch on recent technical advancements. Below is a list of the leading players in the luxury market.

Using the Luxury Archives to Generate New Revenue High-end fashion companies are starting to generate new money from their intellectual property that has been dormant in archives by reissuing things expressly for the Metaverse. The fashion archives of the high-end companies have long been their secret weapon. The brand's particular luxury codes act as a lasting competitive advantage by being upheld in the present, connecting the past with the future. There are five main methods that brands can communicate in the Metaverse.

Data can provide useful insights in the fashion industry. (2022, Marc Bain), the Crucial Finding is Knowing which data sources to focus on can assist organisations in better anticipating consumer behaviour, seeing trends, and deciding what to stock. A strong data set is more useful than any one data point. Depending on the clients, it changes occasionally. Around 30 percent of the predicted $110 billion in global virtual goods spending in 2021—more than double the amount in 2015—was attributable to virtual fashion. Over the next two to five years, fashion companies with a focus on Metaverse innovation and commercialization could bring in more than 5% of their sales from online transactions. The most applicable NFTs or loyalty tokens are probably those used for authentication.(BOF, Mckinsey, 2022)

Metaverse Innovation
A virtual 3D digital design software which can be implemented in the Fashion Industry on the Metaverse is a future trend. The case study was developed in completion of the course History & Interpretation of Innovation with Professor Tom Hardy for they Design Management MA at SCAD: Savannah College of Art and Design.to distinguish innovation from proclaimed innovation in the real world in the study of CLO 3D’s digital fashion design software:

- applying definitions of innovation to highlight the distinction between authentic and claimed innovation in a case study
- conducting secondary research to compile the story of the genesis and evolution of CLO 3D that included how it was successfully or unsuccessfully diffused
- incorporating concepts from the literature including, but not limited to, unintended consequences, heterogeneous engineering, association or disassociation, and recontextualization or reinvention
- creating a narrated presentation that highlights the key features and conclusions of a case study
- ranking the attributes of innovation—which include observability, trialability, complexity, compatibility, and relative advantage—for this innovation.(Kaetz, 2022)

CLO 3D digital design software is a platform enabling fashion and garment designers to work cohesively in a digital environment, allowing for great precision with ease and use. This digital design software has practically
revolutionized the way fashion designers work in in present digital world. It is a great advantage for India as of today, the standard measurements are not of a professional standard, due to the lifestyle, and CLO 3D could also solve this technically. An innovation is anything that in incrementally or radically improves the current process of completing a task. This could be a change in process, thought or concept; a small edit to improve functionality or seed; or even something as small as adding a button to a garment which serves the purpose of comfort for ease creatively. CLO-3D is the future digital design software undoubtedly to be implement virtually by fashion designers on the Metaverse.

According to the author Gartner, the fusion of virtually augmented physical world with digital reality produced the Metaverse, a collective virtual open environment. It offers improved immersive experiences and is physically persistent. The term "metaverse," a combination of “meta” and “universe,” first appeared in the science fiction book Snow Crash in 1992. Many metaverses, including virtual world services like Second Life, have been created for widespread use. To assist business leaders in creating new products, transforming their companies, or reducing risks, technology innovation executives must recognise, analyse, and monitor emerging technologies. One such technology that will have an impact on fostering strategic corporate breakthroughs is the metaverse. (Gupta, 2022) Utilizing digital twins in VStitcher designs clothes design Fashion brands may take use of the most photorealistic visuals available for fit, design, visualisation, and marketing. (Gartner, 2022)

Trapdoor Creative July 2022. Users of VStitcher can now access the full potential of Unreal Engine 5 thanks to Trapdoor's user-friendly and efficient platform. By speeding up processes like rendering and animation, users will be able to study designs, get input, make modifications, and submit updated renderings for approval almost immediately. Brands and manufacturers can showcase collections digitally while being confident that manufactured goods will look exactly like their digital twins do thanks to the ability to perform the entire cycle quickly and on a large scale. This allows them to cut down on material waste and accelerate time to market. (Trapdoocreative, 2022)

Innovation on the Metaverse is definitely happening and advancing with these professional virtual design platforms and this will create an indepth knowledge for the fashion Luxury Brands and Haute Couture on the Metaverse.

Phygital Transformation

Virtual fashion, which has emerged as a popular trend on the Metaverse, can only be achieved through digital transformation. As the real and digital worlds continue to merge, the “Metaverse,” a new era of the internet, is revolutionising the fashion sector. With reference to Flavia Mansur Murad-Schaal and Isadora Schumacher Jeong, “Fashion brands’ expansion into the metaverse brings a number of challenges with trademark use and misuse.” The online, 3D immersive experience that users get is essentially absent from the real world is known as the metaverse. Users can socialise, play games, and shop in the metaverse. (Mansur, 2022)

A new version of the internet called Web3 uses blockchain to "decentralise" management, which lessens the influence of major firms like Google or Meta and makes the internet more democratic. It is defined by open-source software, is permissionless and trustless (does not require the assistance of a trusted intermediary) (it has no governing body). The term "Web3" was first used in 2014 by Gavin Wood, a co-founder of Ethereum, and has been around for more than five years. However, it began to acquire traction in 2021 as a result of the development of blockchain technologies, growing NFT marketplaces, venture money, and continued efforts to limit the influence of big tech. Fashion is more transparent thanks to blockchain technology.

Products are relatively simple to authenticate since NFTs are recorded on the blockchain, an immutable ledger, and contain metadata to demonstrate who the true owner of the item is. Naturally, this significantly contributes to reducing the problem of counterfeit goods. Brands in the fashion industry have long had to cope with the problem of fake goods, and NFTs offer a fantastic opportunity to address it. It is relatively simple to verify things since NFTs are recorded on the blockchain, an immutable ledger, and they contain metadata to demonstrate who the true owner of the item is. (Cimermanaite, 2021)

Naturally, this significantly contributes to reducing the problem of counterfeit goods. Even in the world of fashion, this is hardly a novel idea. The owner of Louis Vuitton, LVMH, began experimenting with blockchain technology in 2019 to establish the legitimacy of high-end goods. More recently, Gucci collaborated with the auction house Christie’s to offer its first NFT, and Nike registered yet another trademark to indicate its intentions to enter the crypto and metaverse markets.

It goes without saying that there are a tonne of retail, clothing, and fashion firms ready to enter the metaverse. They have a tonne of business opportunities in the metaverse. This is particularly relevant given that online identities are a key idea in the metaverse. So it should come as no surprise that individuals will want to dress up their avatars in virtual attire. Several trends show how it was inevitable for fashion firms to penetrate the metaverse. One such example is social commerce, in which merchants (and frequently an influencer) use live streaming to communicate with customers and present their newest goods. By the end of 2020, it was predicted that the trend, which started in 2016, will generate retail commerce sales worth $242 billion. 1.4 million people watched a webcast that Burberry China once hosted.

Social commerce is clearly profitable, which is why so many companies have tried to use it. For instance, Shopify investigated artificial intelligence (AI) to support virtual "try-on" experiences and discovered that their conversion rates for goods using 3D models in augmented reality increased by 250 percent (AR). Social commerce unquestionably demonstrates how swiftly the world of fashion and retail is moving towards internet channels. Similar to how Amazon is doing it, other retailers are beginning to use Mixed Reality (MR) tools to engage
customers and retrain store workers. MR, in its broadest sense, describes the blending of the physical and digital realms to produce fresh settings for humans to occupy. Customers may now visit the MR environment, engage with workers, try on things, and even conduct discussions. According to Devrix the ten trends for digital transformation 2022 is given here:

![The Hottest Digital Transformation Trends for 2022](image)

### The Hottest Digital Transformation Trends for 2022

<table>
<thead>
<tr>
<th>Trend</th>
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<tbody>
<tr>
<td>Creating New Digital Business Models</td>
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<tr>
<td>Data-Driven Business Management</td>
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<tr>
<td>Investing in Predictive Analytics</td>
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<tr>
<td>Cracking the Personalization and Privacy Paradox</td>
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<tr>
<td>Delegating Funds to Cybersecurity</td>
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<tr>
<td>Focus on Employee and Customer Onboarding</td>
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<tr>
<td>Increased CDP and CRM Adoption</td>
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<td>A Shift to Multi-Cloud Solutions</td>
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<tr>
<td>Digital Workplace Tools</td>
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<td>The Rise of Hyperautomation</td>
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*Graphic by: DevriX*

The metaverse is where fashion and clothing will be in the future, and it seems almost inevitable that they will do so at some point. Because of this, businesses will continue to interact with their customers online in the near future. Furthermore, NFTs are still gaining popularity. Virtual clothing is obviously the next natural development in this process. Fashion brands will need to understand the marketing value of digital fashion and NFTs in order NFTs may now be understood, but in order for fashion brands to create reliable revenue streams from the metaverse, they must distinguish between hype and real potential. streams from the metaverse are endless.

But more importantly, given that MR is being used to give customers new purchasing experiences, why would businesses choose not to make use of the metaverse in the same way? Really, all that remains is time. Future retail will take place in the Metaverse.(K3,.2021)

**Sustainability**

In addition to their practical and analytical benefits, digital twins and CLO 3D virtual design software can be used by the fashion industry in a number of ways to promote sustainability. First off, digital twins can significantly cut waste and inefficiencies in the supply chain. And a big part of this is due to the fact that they can conduct countless simulations. If a brand wanted to make a garment in a range of extra colours or sizes, several prototypes would have to be made prior to the invention of digital twin technology. (Nguyen, Dec 2020)

However, the need for prototypes is now entirely unnecessary, and the waste associated with their manufacture is eliminated thanks to simulations employing the digital twin. Simulations can also be used to spot any supply chain defects before they even arise, helping to further reduce waste that would often be produced during the testing stage of production. Another method that producers might encourage sustainability in the fashion industry is by using digital twins or CLO 3D to help to reduce unnecessary waste, and can assist with the sizing problem in fashion. This is sustainable for the Fashion Designers in the Industry and on the Metaverse.

When buying clothing, many buyers struggle with the broad range of sizes. When purchasing three pairs of pants from three separate companies, a customer may require a completely different size. This has the substantial drawback of regularly leading to returns, with ill-fitting apparel being the majority of these returns in 2021. Clothing was the most common item returned in 2021. Furthermore, the prevalence of clothes returns greatly raises the carbon footprint of the fashion business.
To ensure that firms can make garments in compliance with such standards, digital twins enable the generation of worldwide, standardised sizing data. Once more, this would save waste, lower the number of garment returns, and boost consumer confidence when purchasing clothing from businesses who use the universal size data. Given the benefits of data collecting, interpersonal relationships, and sustainability, it is simple to comprehend why digital twins are growing in popularity in the fashion sector. Microsoft and E.ON will actually launch 400 million products online for the first time by 2025! (K3, Blog, 2022)

As the metaverse continues to transform the fashion industry, I thought this was a really interesting innovation at Farfetch, who spoke at the Drapers Future of Fashion conference 2022. Hilsum gave some great insights on how the virtual world is changing the shopping experience, particularly for luxury brands, as well as the importance of being mindful of the challenges this relatively new innovation brings to the sector. At Authena, we aim to help brands tackle some of these obstacles, in particular when it comes to authenticity. Our solution provides a reliable, unique way for organisations and consumers to keep track of their products and ensure they are authentic.

Following their almost immediate sell-out NFT collection in June, Prada is gearing up for an even more exclusive launch this month. For the first 24 hours every Thursday, the luxury brand will release an exclusive item online equipped with a unique serial number and delivered in custom packaging. Limited to 50 pieces, purchasers will also be able to redeem an accompanying gifted NFT with a physical shirt. At Authena, we are always excited to see new ways luxury brands are merging the physical with the digital.

It is understandable why luxury brands are putting more emphasis on digital transformation given a recent report from The Business of Fashion and McKinsey that stated fashion brands' investment in technology is estimated to grow from 1.6 percent and 1.8 percent of sales in 2021 to between 3 percent and 3.5 percent by 2030. The Neiman Marcus Group's chief product and technology officer, Bob Kupbens, is the subject of this incredibly fascinating interview. He explores how his company is utilising cutting-edge technology to transform the premium experience. The source for this is LuxuryFashion and Digital Transformation.

A great look here at new research from Digimarc, which highlights over 70% of consumers think being able to verify the authenticity of a product is very important and two-thirds say transparency into how and where a product is made “is a key part of their purchasing decision.” At Authena - Protect Authenticity we have always seen the importance of authenticity, which is why our solution put this at its core. Our technology is more reliable than QR codes and allows full transparency to both businesses and consumers. (Mckinsey, 2022)

What motivates non-fungible tokens in the beverage sector. With the NFT market reaching $40 billion, it’s not surprising that numerous businesses, including several well-known
wineries, have gone on board in an effort to draw in new customers and stay on top of the most recent trends. I'm interested to see how this develops in the future. We at Authena - Protect Authenticity assist beverage firms in embracing NFTs while also assisting in the fight against counterfeiting and ensuring authenticity.

Gen-Z are very different consumers from their parents, and organisations (especially luxury brands) must recognise these differences and ensure they are appealing to this younger generation. I thought this was a great look at how the metaverse can help businesses evolve and attract new customers. It's great to see more and more companies embracing the metaverse and finding new ways to interact with consumers. As we move online, however, the importance of authenticity should not be left behind. Counterfeiting is a serious problem, both in the physical and the digital worlds, and brands should ensure they are doing all they can to protect themselves, their products, and their customers, with sustainable innovation. (Authena, 2020)

2. Conclusion

The "Metaverse" era of the internet is revolutionising the fashion business as the physical and digital worlds continue to merge with digital transformation. The key conclusion from fashion businesses’ metaverse expansion is that virtual couture is still a niche market and won’t soon take the place of actual clothing. Technology like virtual design softwares are taking over and creating and defining fashion on the blooming Metaverse and as for younger generations who have grown up playing video games, making an investment in their avatar's and online identity's digital image is crucial. It's critical for business owners interested in developing products for the metaverse to comprehend that Gen-Zers' online lives are just as important as their offline ones. They have the flexibility to socially engage without restrictions due to their gender, colour, geography, or other characteristics thanks to the metaverse. Their radical self-expression is empowered by it in ways that aren't feasible in the real world.

Given the prospects that the Metaverse presents for Luxury brands, the fashion industry may find its next goldmine there. Like the Fortnite x Balenciaga collaboration, Burberry, and Louis Vuitton, luxury companies are investigating the Metaverse. With artists showcasing their design illustrations and also selling their NFT at an excessive price, the NFT (Nonfungibletokens) phenomenon is now gaining traction. This could also refer to the current fashion trend of employing hand-spun, environmentally friendly, and sustainable Khadi fabric. This may be created for a Haute-Couture or Luxury Brand, and a Khadi Avatar could be created in line with it to boost sales.

This could be a great chance for KVIC (Khadii Village Industries) to boost sales both domestically and internationally purchasing virtual clothing to put on an avatar industries) both in India and around the world to boost sales. It's quite profitable to purchase clothing virtually to put on an avatar. The metaverse is seeing an increase in these commercial partnerships and the introduction of new brands. The popularity of this virtual environment is rising quickly. The fashion sector will keep making use of the available space to grow as much as it can. With the digital transformation, even more. (Fashion trends, 2022)

Simply said, in a Web 3.0 internet, the metaverse has enormous consequences for brands and independent fashion designers. NFTs (non-fungible tokens) in a Web 3.0 metaverse experience are capable of enabling consumers to fully immerse themselves in the artistic culture promoted by the fashion industry while having true ownership of the fashion and luxury things they buy. This is in addition to the metaverse. Fashion brands will have access to a new source of income by using NFT in a metaverse. Fashion companies will be able to generate income by selling their virtual goods and apparel on a decentralised market rather than just selling actual goods and charging customers for each visit to the virtual showroom. Additionally, they will have access to a to connect with a bigger group of fashion aficionados who can participate without being physically close to the brand.

For instance, a fashion fan in a far-off country will still be able to enjoy the fashion label's showrooms and virtual wearables. In the next look at some of the important takeaways from Carol virtual world as well as in the actual world, notable companies will be able to stand out more with special editions of fashion and luxury goods. In a Web 3.0 internet, fashion brands and fashion designers will also be compensated with royalties for secondary sales of their goods.

Fashion brands may sell their items more affordable and creatively thanks to NFTs and the Web 3.0 metaverse because they won't have to worry about delivering actual inventory or setting up physical stores or showrooms. For their customers, fashion firms will be able to design truly distinctive shopping and entertainment experiences. Brands and designers will be able to provide individualised unique editions and experiences in an NFT-driven virtual environment. While more well-known fashion companies will be able to give their consumers personalised clothing, smaller companies and independent designers will still be able to differentia out by selling limited-edition designs. The fashion industry will continue to be pushed into what is known as "the experience creator economy," where the key value proposition is predicated, by the metaverse through NFTs. Economy," in which providing clients with experiences rather than tangible goods is the primary value proposition.

The ability to design wearable clothing with no material or production expenses and no restrictions is one of digital fashion's capabilities. You can scale indefinitely. A garment can have 1 million prints produced on it for no additional cost. In addition to being sustainable, it allows users to customise their clothing as they please. It's also immortal. NFT apparel will endure for as long as you desire. Today, a wide range of technologies, including blockchains, cryptocurrencies, virtual goods, and more, are all around us. Furthermore, despite the fact that these innovations are still in their infancy, they are advancing our understanding of the "Meta world" and its potential to fundamentally alter how we live on Earth and relate to one another. For today, there is an array of technologies surrounding us, such as
blockchains, cryptocurrencies, virtual goods, and more. And even though these developments are still in their infancy, they are bringing us closer to the "Meta universe" that will fundamentally change the way we live on Earth and how we interact with one another.

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Table of Figures

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Figure no: 2, dated 2022, Devrix. “The Hottest Digital Transformation trends for 2022.”

Figure no: 3, dated 2022, Mckinsey Analysis, “ The Metaverse can offer Sustainable revenue Streams even if achieving a fully alternative world.”