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**Five Steps for Sustainable Business Modelling
in The Metaverse**

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Abstract

As we start experiencing the 4th industrial revolution, with the rise of the new Internet, people's physical and digital lives blend and new business opportunities arise for the next generation. We are still at an early stage of development for what we call "the metaverse": a real-time immersive world to be populated by avatars, digital twins, and all sorts of digital goods powered by an exponential rise in creators. In this context, all industries will have to redesign their business models to ensure a sustainable transition towards the next-generation engagement. Our paper proposes a framework for innovation consisting of 5 essential steps any company should take when approaching transformation in Web 3.0. In order to sustainably transition, businesses have to find the most suitable place in the digital space, ensure their presence, activate their community, co-create digital artifacts, and connect them with physical products. To deliver our paper we will build our research on qualitative and quantitative study, with the focus on exploring new-gen business case studies and conducting a series of interviews with experts from the international metaverse community.

Keywords: innovation, metaverse, business transformation, road map, sustainable, transition.

JEL Classification: M13, L10, L25, M30, O10, O32.

1. Introduction

“With the global outbreak of the COVID-19 pandemic, many people around the world have to stay at home and lack social interactions, leading to a surging demand for novel applications of social media” (Cheng et al., 2022). In this context, new digital platforms are creating room for more diverse opinions, encouraging peer-to-

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peer interaction, learning, and co-creating. These spaces are mostly shared virtual worlds, providing real-time immersive experiences, developed on gaming platforms.

Virtual worlds have been present in the online space for decades. Second Life, launched in June 2003, recreates the real world and gives its users the possibility to be whatever they want, generating at the same time an economy dependent on real money. Users are called residents, and they inhabit the digital world with their avatars. They meet and interact at social gatherings, experience live concerts, own digital assets, attend press conferences, and college classes. We can say that Second Life is a Web 2.0 metaverse, in the sense that it has three core elements: experience, economy, and community. In comparison, there are other current examples of more evolved versions of these digital worlds which are the closest to what we imagine as the metaverse, like Decentraland and Sandbox: they have their communities, economy, user-generated content and customized experiences, and they run on a blockchain infrastructure.

2. Literature Review

In this section, we explained the main factors standing at the basis of our research. For this scope, we provided the main definitions of the concepts set as a background for our paper.

Metaverse is the new interface that will take human-computer interaction to a new level. We will define it by extracting from the literature the terms that build this ecosystem, especially in technology: blockchain, AI, IOT, Cloud. In relation to the topic addressed in the research we will also introduce the terms crypto currency, gamification, and NFT. Metaverse is a term that does not yet have a universal definition; we know it was first mentioned in 1992 in Neil Stephanson's book *Snow Crash* (Joshua, 2017). On a general level, the metaverse is intended to have the ability to provide users with near-reality experiences and to enrich the quality of the experience, an action that involves advanced technology (Yuheng et al., 2022).

How do we define blockchain, IOT and cryptocurrency? A cryptocurrency is a digital form of exchange that uses encryption technology to develop and transfer funds. A blockchain records all the transactions that occur and is the basis of the trust protocol. At present, the Internet of Things (IoT) represents technologies such as that adopted for smart homes, smart sports activities, or smart transportation, applications developed to improve human life. Even though the IoT is currently undergoing continuous development, it is hampered by security, integrity, and data protection issues. Blockchain was created to help the use of cryptocurrency, but it needs to be integrated with IoT systems to mitigate the challenges it raises. (Ahamad et al., 2022)

Introducing AI. The literature identifies several starting points for the need to adopt AI. In the first phase, we can discuss the ability of AI to process large databases to discover repetitive patterns needed to generate value, increase efficiency and support decision making. From another point of view, AI is a solution to eliminate human errors through automation. We have noted throughout the research the need to integrate all terms into the AI ecosystem, because in the ever-evolving virtual

world, power and dependency are constantly negotiated between interconnected partners. (Keegan et al., 2022)

The term gamification was first developed in 2002, is still developing and should not be confused with other terms such as play, traditional games, or loyalty systems. The unique and differentiating element is the extension of the game term and the involvement of management in solving tasks. (Patricio et al., 2022).

Based on blockchain technology, NFTs have captured the interest of the public by being defined as tradable rights that can be registered as non-fungible tokens based on the aforementioned technology. (Hyungjin et al., 2022). NFTs are in fact cryptographic tokens and determine the ownership of certain objects such as songs, events, art, or other particular items. They can be sold or exchanged like any other cryptocurrency; the difference being that, unlike cryptocurrencies, their value is not equal but depends on the characteristics of the product they represent (Chalmers et al., 2022).

3. Problem Statement

There is still not an established official definition of the term “metaverse”. Matthew Ball, venture capitalist and essayist, explains that the metaverse is a persistent and interconnected network of 3D virtual worlds that will eventually serve as the gateway to most online experiences, and also underpin much of the physical world (Ball, 2022).

However, with all the technology available, we are currently at the level of dial-up Internet phase of the metaverse. It is still very early, we are at peak hype, but the technology takes time to develop. Ultimately, the metaverse is the next evolution of the internet and will converge: IoT, blockchain technology, AI, augmented and virtual reality tools, cloud storage, and 5 and 6 G, which will connect all these innovations to build and maintain the metaverse. According to Tommaso Di Bartolo, entrepreneur and Faculty at the University of California Berkeley, the metaverse provides an immersive experience for consumers, with “self-sustaining, community-driven economy at its centre”, and for companies, it enables them to create a next-generation type of engagement, “that empowers brands to make consumers part of the product versus being sold a product”.

4. Research Questions / Aims of the Research

Becoming a metaverse enterprise is the natural transition that brands should prospect, from all sectors and industry, from media to fashion, travel, and hospitality.

The initial question that founded our research is: How does the metaverse transform businesses and which are the steps companies should consider to successfully pivot and become a metaverse enterprise?

5. Research Methods

The research methods used:

- Documentation in the literature, in order to synthesize the context of scientific research, especially in the field of the new environment dominated by the metaverse;
- Comparative analysis between different types of methods and steps used by companies in order to fulfill the needs of the market;
- One-on-one exploratory interviews, held virtually, on the Zoom platform. Using this qualitative research method, we covered the interlocutor's experience in the field of consulting brands that design products and services for the metaverse; interlocutor's research findings and methodologies in relation to the new business ecosystem; metaverse definitions and the range of tools and platforms which can be used to design and navigate virtual worlds.

6. Findings

Jon Radoff is an American game designer and entrepreneur, considered one of the 30 most influential people in the metaverse. His work revolves around the concept of the metaverse, designing market maps, consulting brands, and creating transformational methodologies. Teddy Pahagbia, from BLVCK PiXEL is currently based in Paris and is known as Mr. Metaverse. He is a keynote metaverse speaker and he supports companies transform through digital innovation in Web 3.0.

In 2021 we interviewed both specialist and worked closely with Teddy in a workshop designed for creative people who want to lead change in the metaverse. Through both experiences we collected notes and observed patterns which we further researched by analysing case studies, in order to propose a framework for transition.

The main finding is the urgency for businesses to transform in the context of the exponential rise in technologies which are shaping up Web 3.0 and the metaverse. According to Jon Radoff, the last 18 months have accelerated this transition. A habit started to be observed where people are getting accustomed to the idea that the Internet is becoming a place they go to participate in activities of all types, whether it is a game, a work collaboration, or an immersive social experience. Therefore, companies started to design strategies to enter the space and deliver to the new needs of the market: experience, community, and economy. Some companies operate at the level of technology, which means they are creating the infrastructure, others are designing tools, worlds, or experiences. Another insight is that games are going to lead the future of the metaverse, dematerialising physical space and building worlds where brands and consumers will live, co-create, share, and earn. Content for the new Internet is designed and proposed in collaboration with consumers, called user generated content.

After analysing the current ecosystem in which different metaverses are being built, and conducting interviews with experts in the field, we noticed that there are 5 important steps to take into consideration when pivoting towards metaverse business modelling.

6.1 Explore the Online Worlds

Online games mostly refer to games that are played over the Internet using PCs and game consoles (Papagiannidis et al., 2008). Web 3.0 evolution generates immersive, tactile, and decentralized Internet, and eventually human augmentation such as digital and augmented reality wearables, and brain-computer interfaces.

There are several metaverse experiences rising in the digital space like Ready Player One, Fortnite Concerts, Gaming, Virtual Real Estate platforms. Axie Infinity is a good example of a Web 3.0 metaverse. With a revenue generation of over 300 million U.S. dollars in August 2021, according to a research published on Statistica by Raynor de Best, the video game is a case in point of how to build decentralized finance protocols running on blockchain that increasingly generate more money and are, therefore, more appealing to users and brands.

Crypto is the currency of the metaverse, and NFTs are its capital. Since live music performances to large crowds disappeared almost overnight with the COVID-19 epidemic, the music industry has been forced to innovate and find new ways to reach their fans (Pryor, 2022). Sectors such as music and fashion are the ones which innovated the most in the space of the metaverse, generating monetizable experiences for their audience such as: Justin Bieber's concert on Wave, Travis Scott's collaboration with Fortnite, Gucci and Roblox cross industry value creation with Gucci Garden and Decentraland platform organizing the first metaverse fashion week where 70 brands among which Estée Lauder, Dolce & Gabbana, Forever 21 showed their style.

Gaming is informing the future of the metaverse. All these examples show the variety of possibilities in designing experiences and which are the typologies of these collaborations: new gaming intersections are remodelling businesses such as fashion, film, fitness, e-commerce and events; meaningful connections are established on new social media platforms; diverse representation by giving users the freedom to digitally embody any type of avatar, from human to animals or tailored characters; immersive escapism and joy is unlocked by performing the act of playing especially with AR or VR tools; seamless brand experiences which encourage co-creation with consumers rather than advertising products.

“Although most companies embrace the Metaverse's concepts and vision, cautions and doubts also emerge. While both Apple and Microsoft have virtual space applications, they consider that seamlessly connecting the Metaverse and the physical world is a key to its success, if not more important than the Metaverse itself.” (Cheng et al., 2022). For the metaverse to really function, developers need to enable technologies which allow seamless interoperability among users and platforms.

In the last years, the Internet has radically changed. Such a pattern cannot pass unnoticed, since both academic and business worlds have shown great interest in such changes (Cagnina, Poian, 2009). We strive to offer a broad vision of the potential benefits which virtual worlds may provide for improving learning and collaboration (Acosta et al., 2013).

6.2 Ensure Brand's Presence in a Metaverse

To sustainably pivot, brands need to develop a metaverse lifelong strategy that suits the needs of their consumers. To generate value for the community, companies are practicing collaborations and are looking for partners that are going to provide for them the right infrastructure or perspective to further develop common worlds and products. To date, the experiments we have seen fall into the following categories: creation of immersive experiences for audiences in the music industry; launching digital coins like in the case of the rock band Portugal The Man; selling virtual assets or NFTs to extend brand experience into online worlds; generating experiences; trading and building on virtual real estate projects on platforms such as Upland.

Finding the right partner in the metaverse is acknowledging that, whereas once customers were only consumers of content, they are now content-creators and content-amplifiers as well. In the metaverse, the community will set the prices, and the value added to a virtual good will not be based on cost or utility but relationship.

“Importantly, high levels of local presence create user perceptions of virtual content as “being here” (i.e., within their physical environment due to high levels of realism or high levels of contextual embedding). Low levels of local presence indicate a more “functional” integration of virtual content, such as textual information. In contrast, telepresence in VR describes the degree to which users perceive themselves as being in the virtual world independent of their actual physical location.” (Rauschnabel et al., 2022). VR is a technology that combines multisensory stimuli to generate the feeling of being present within computer-generated environments (Dozio et al., 2022).

6.3 Activate Brand's Community

Brands need to think of creative ways to build community and content. Because the metaverse is only as interesting as the content inside. If there is nothing to do when users enter the worlds, no one is going to come back.

When Mark Zuckerberg introduced the successor of Facebook, he described Meta as “a set of virtual spaces where you can create and explore with other people who aren't in the same physical space as you.” (Huynh-The, 2022). Meta will build its own metaverse and create for their audience a wide range of experiences, for both business and fun: from virtual meeting rooms like Horizon space, to playing minigames.

This is one example of a company pivoting towards becoming a metaverse enterprise, that will influence the mass adoption of the technology and enable brand collaborations in the space. To activate a community for next-generation engagement, companies will have to revolve around finding partnerships that make the most sense for their audience and provide meaningful and inclusive experiences with the technologies available. Besides this, the content generated by the brand has to be a story of how to live forever by constantly adapting to users' needs and desires and allowing them to contribute. Digital game designers understand this philosophy.

When they develop a character, the basic structure is fixed and the player sees customization options which mix and combine to enable an infinite number of possibilities. Companies develop episodes, events, or movies in the current metaverse space. We see successful collaborations such as Upland and NFLPA Legits, where users collect Football NFTs that represent the most iconic players and trade them in Upland's open marketplace.

Table 1. Understanding NFLPA Legits

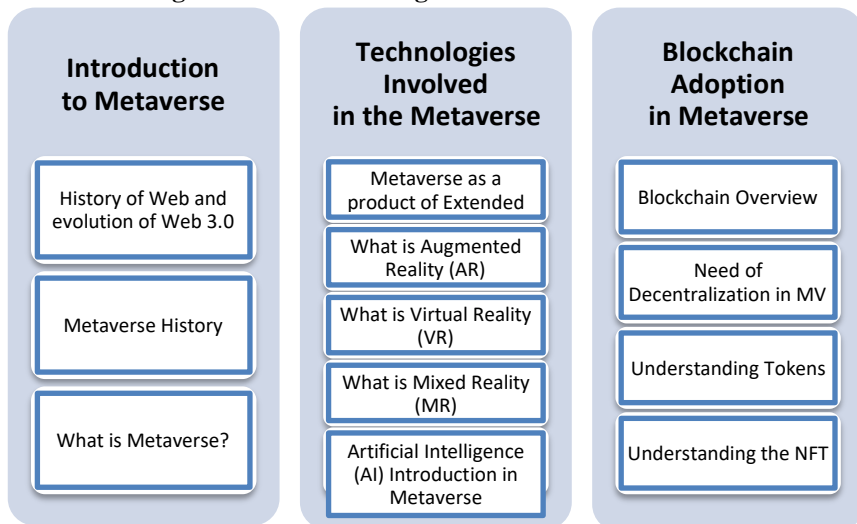
Category	First layer aspect	Second Layer aspect
NFLPA Legits Overview	One of a kind memento	Build Fan Score Collect essentials Trade NFLPA Legits
NFLPA Glossary	Terms and Types General Terms Bundles Mechanism and Features	Essentials, replicas, spotlights Minting, Existing, Total, Ending Bundle Description, Bundle Delivery Fan points, registering for mementos. Stadiums
Upcoming Features: fan shops, trading, registering for spotlights, autographs, Collections, Leader boards		

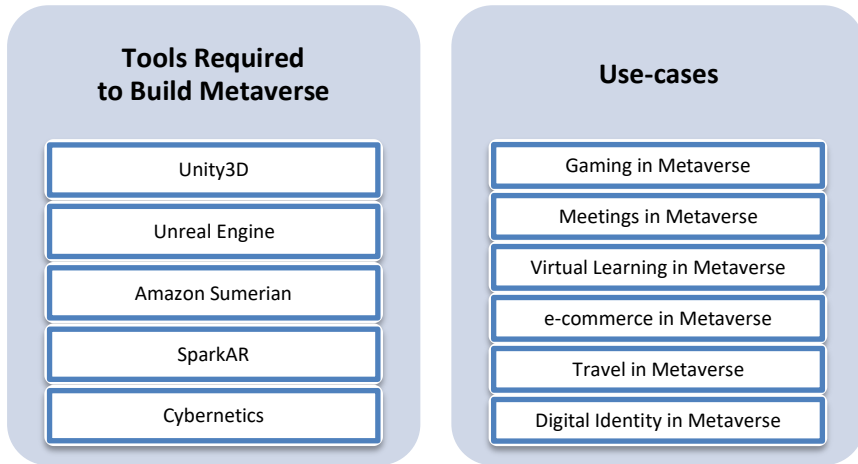
Source: <http://community.upland.me/>.

6.4 Co-create Artefacts

According to recent data from ARK Invest, the percentage of game revenues from selling digital items will rise 95% by 2025. Co-creation, in the context of a business project, is the process in which input from consumers is used to design services and products and plays a central role from beginning to end.

Figure 1. Understanding Co-creation in Metaverse





Source: blockchain-council.org.

In the metaverse, the real value behind a digital product is the opportunity given to users to be involved in the process of creating that particular item or experience. This process of co-creation brings consumers a sense of ownership and belonging, and even financial independence by creating their own personal economy. With games like Axie Infinity, people can support themselves financially only by playing and trading digital goods. Hatsune Miku is a character in a manga series named *Maker Hikōshiki Hatsune Mix*, written by Kei Garō. Hatsune is one example of how communities come together to co-create with their aspirational brands: she has transitioned from vocal synthesizer to adored “collaboratively constructed cyber celebrity with a growing user community across the world”, according to its creators. She is Japan’s beloved virtual superstar. Since her release in 2007, her popularity has escalated, and her image was licensed for all types of goods, games, and products.

6.5 Connect Digital and Physical Worlds to Enhance Experience

Virtual worlds have become an arena for user-generated innovation enabling a new wave of entrepreneurs to extract real-world value from virtual property (Zhou et al., 2018). Brands are generating NFTs or creating virtual retail experiences on gaming platforms to offer both their digital and physical products to a wider target.

However, according to venture beat, “The massive amount of data storage needed to develop the metaverse might undermine sustainability goals, based on the rapid growth required” (Parker, 2022). Brands need to include emerging global issues in their digital strategy. In July 2021, Coca-Cola launched an NFT collection that fetched \$575,000 in an online auction. The company relied on the power of its brand to push forward its collection and raise over \$500,000 for charity within 72 hours. The project *House One Family Forever* proceeds from each NFT purchase and funds

a safe home for one homeless family. Each NFT design is unique and linked to one IRL house that is about to be built for a family in Mexico or El Salvador.

The metaverse is also a societal evolution, not just a new technology or a marketing channel. As the world is undergoing great changes due to the exponential development of new technologies and the humanitarian and planetary crisis we experience, the role of brands is to generate purposeful collaborations with real impact.

7. Conclusions

The metaverse is a visual world that blends the physical world and the digital world (Zhao et al., 2022). The metaverse is expected to turn imagination into reality through the convergence of various technologies and should be considered as a medium for sustainable education, free from the constraints of time and space (Park, Kim, 2022). Driven by experience, community, and digital economy, worlds build as the metaverse have unique attributes depending on how businesses transfer their values, vision, and mission in a digital setting. However, a layer of sustainability needs to be added in order to generate massive adoption from consumers as well as inspire them to collaborate and co-create with brands. From our analysis, we extracted 5 concrete steps companies should consider when looking to pivot and become metaverse enterprises: Explore, Ensure, Activate, Co-create, Connect.

Figure 2. Steps for Sustainable Business Modelling in the Metaverse



Source: Author's personal contribution.

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