Metaverse – the new marketing universe

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Introduction

The Metaverse will not fundamentally replace the internet or the "social media" framework, but instead build upon and iteratively transform it into an online 3D social media world, full of many new exciting user experiences.

Basically, as illustrated in Figure 1, Metaverse is representing an extra 3D layer on the traditional 2D internet. It is a 3D world where business, information and communication tools are immersive and interoperable. Somehow the Metaverse is a digital facsimile of how we are working in the physical world. In this 3D digital space the users can come together via avatars that resemble them and mimic their movements, so that they can interact with each other and the surroundings, which also replicates the physical world (Figure 1).

For companies that exist primarily in the physical world, the metaverse concept is first and foremost a giant laboratory with direct access to especially the younger demographic target groups. The metaverse is mostly well-known for virtual gaming through online worlds such as Fortnite or Roblox. It would be shortsighted to think the metaverse ends with gaming. The metaverse can have an all-encompassing impact. We estimate that it will revolutionize nearly every industry and "value functions" of companies in the future, from health care, consumer products, entertainment and business-to-business technical solutions to payments. In addition, altogether new industries, marketplaces and resources will be created to enable this future, as will novel types of skills, professions and certifications. The collective financial value of these changes will be in the billions and trillions of dollars.

For brands that want to try out this metaverse, creating an experience that enhances the functionality of their product or service, is a smart way to go. Augmented reality (AR), in particular, is excellent for this. For example, it has the capability to help beauty customers mix custom foundation colors. Also for example, Adidas has deployed AR to let shoppers virtually try on shoes, whereas Ikea has been integrating it for years to let people visualize furniture in their own homes.

Our paper explores the key building blocks which in interaction create value on the metaverse. We show how the consumer-oriented "building blocks" are functioning in the metaverse in a specific case study about the Nike–Roblox alliance.

Metaverse – origin and definition

The word "metaverse" is often traced to Neal Stephenson's 1992 dystopic, cyberpunk novel *Snow Crash*. However, the metaverse is far from the stuff of science fiction. In 2003, software developers inspired by *Snow Crash* created the online "Second Life" through which anyone could create a cartoon avatar of himself and interact with others in a variety of virtual spaces. The word "meta" comes from the Greek language and it means "beyond," i.e. that there is more to be built and experienced. However, the metaverse will not reach its full potential without ultrafast internet. Case in point is again the online world "Second Life," which came out before smartphones caught on and lost its appeal in part because it could not provide real-time,

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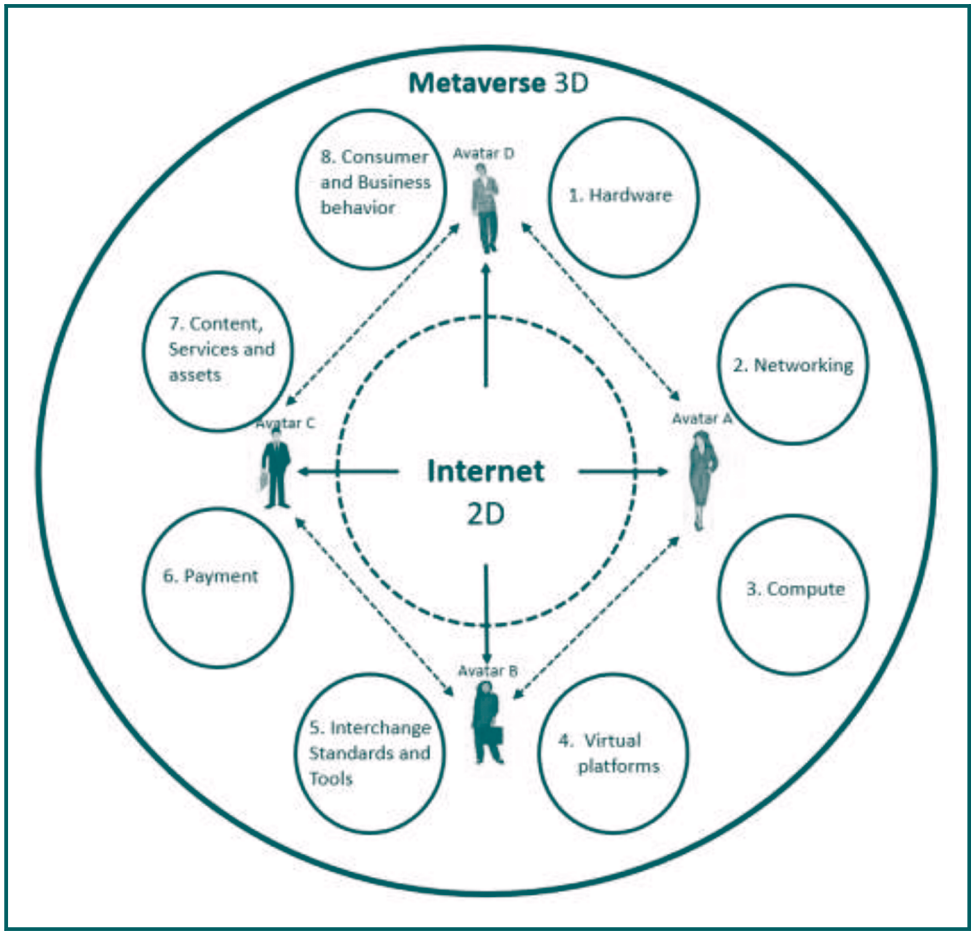
Figure 1 Metaverse building blocks and acting avatars



on-the-go interactions. Today's fourth-generation (4G) connections can just about support multiplayer apps such as Fortnite, but they cannot handle hundreds of concurrent streams of time-sensitive data. This is why mobile carriers around the world are spending billions of dollars to build 5G networks. They may need even 6G to take it further into the future.

This metaverse refers to a series of interconnected virtual worlds where users can leverage virtual and augmented reality, navigating these spaces using personal avatars who interact with each other (see four avatars in Figure 1 interacting with each other). Metaverse iterates further by placing everyone inside a "virtual" or "3D" version of the internet and on a nearly unending basis. In other words, we will constantly be "within" the internet, rather than have access to it.

Ball (2022) offers the following definition for the term "metaverse":

> The Metaverse is a massively scaled and interoperable network of real-time rendered 3 D virtual worlds which can be experienced synchronously and persistently by an effectively unlimited number of users with an individual sense of presence and with continuity of data, such as identity, history, entitlements, objects, communications and payments. (https://www.matthewball.vc/all/forwardtothemetaverseprimer)

Meta Platforms, Inc. (Bosworth and Clegg, 2021) describes it more simply:

> The 'metaverse' is a set of virtual spaces where you can create and explore with other people who aren't in the same physical space as you. (https://about.fb.com/news/2021/09/building-the-metaverse-responsibly/)

Metaverse – the building blocks

Meta is *Facebook*'s new name, and it is the tech company with probably the biggest stake in the metaverse. It is helping to build the metaverse, a place where we in future will play, connect and do business in 3D. The emergence of the metaverse can be shown around eight major "building blocks" (Figure 1), which function as enablers with symbiotic effects on development (Ball, 2022):

1. *Hardware*. It is through the software that the actual experience or "magic" is delivered, but nothing happens without the hardware (physical technologies), which interacts with and develops the metaverse. This building block includes, but is not limited to, consumer-facing hardware (such as virtual reality [VR]) headsets, mobile phones and haptic gloves, as well as enterprise hardware, such as those used to operate or create virtual or AR-based environments, e.g. industrial cameras, projection and tracking systems and scanning sensors). This category does not include computer-specific hardware, such as graphic processing unit chips and servers, as well as networking-specific hardware, such as fiber optic cabling or wireless chipsets. Every year, consumer hardware benefits from better and more capable sensors, longer battery life, more sophisticated/diverse haptics, richer screens and sharper cameras. VR headsets offer another great example of both progress and outstanding needs in hardware. The first consumer VR headset, Oculus, which came out in 2016 had a resolution of 1080 × 1200 per eye, while the Oculus Quest 2, released in 2020 had 1832 × 1920 per eye (roughly equivalent to 4K). Palmer Luckey, one of Oculus's founders, believes more than twice this resolution is required for VR to overcome pixilation and become a mainstream device.

2. *Networking*. In this area, these three key performance indicators are the most important to consider:

    - *Bandwidth* is commonly thought of as "speed," but it is actually how much data can be transmitted over a unit of time. The requirements for the metaverse are much higher than most internet applications and games and beyond many modern connections.

    - *Latency* refers to the time it takes for data to travel from one point to another and back. Compared to network bandwidth (above) and reliability (below), latency is typically considered the least important key performance indicator because most internet traffic is one-way or asynchronous. It does not matter if it takes 100ms or 200ms or even two-second delays between sending a WhatsApp message and receiving a read receipt. To that end, Netflix artificially delays the start of a video stream so that your device can download ahead of the very moment the viewer is watching. In that way, the viewer will never notice if the network should crunch for a moment.

    - *Reliability* is an obvious key performance indicator. The end result is dependent on the quality of the service. For example, non-live video services such as Netflix receive all video files hours to months before they are made available to audiences. This allows them to perform extensive analysis so as to shrink (or "compress") file sizes and determine what information can be discarded. It is all about managing the "last mile" of data to the consumers.

3. *Compute*. The availability and development of computing power will constrain and define the metaverse. This "building block" includes the enablement and supply of computing power to support the metaverse in performing diverse and demanding functions, such as physics calculation, rendering, data reconciliation and synchronization, artificial intelligence, projection, motion capture and translation.

4. *Virtual platforms*. In the future, most users will interact with the metaverse and have an interface via virtual platforms. These will be accessible from a variety of devices, such

as a web browser and VR headset and here the users will hang out, buy things, collaborate and build, learn and perform, work and relax and experience the metaverse. This building block includes the development and operation of immersive digital and often three-dimensional simulations, environments and worlds wherein users and businesses can explore, create, socialize and participate in a wide variety of experiences (e.g. gameplaying, education, shopping, listen to music) and engage in business-to-business and business-to-consumer economic activity. These businesses are differentiated from traditional online experiences and multiplayer video games by the existence of a large ecosystem of developers and content creators who generate the majority of content on and/or collect the majority of revenues built on top of the underlying platform.

5. *Interchange standards and tools*. Before coming to this stage, the metaverse ecosystem first requires hardware (otherwise there's no way to design or access the metaverse), compute (to power and render it), networking (to deliver and share it) and virtual platforms (so there is a place to be and things to do). This building block then includes a broadly defined category with various technical solutions, protocols, formats and services, which enable interoperability. As consumers, we want to integrate into the metaverse as much as possible. This means interconnecting the many devices and platforms around us today, from the car and home-security camera to the employer's productivity software, all by the use of VR and AR headsets, projection cameras and screens, wearables and more. As always, much of the hardware and experiences will require, or at least benefit from, the use of proprietary standards. Facebook is investing heavily into metaverse so that it can establish its own operating system, fight back against mobile operating systems and avoid using a standard created by its direct competitors, such as Snap.

6. *Payments*. For some, the idea of the metaverse is not just intertwined with blockchain, it fundamentally requires it. To others, this is absurd. A blockchain is not needed to prove or manage asset ownership or to safely and quickly transfer money (Alipay and PayPal move billions per day via purely digital networks). But regardless of whether cryptocurrencies and digital currencies become a common form of payment in the metaverse, they are increasingly being used not only in gaming via non fungible tokens (see further explanation below) and blockchain-based studios but also for initial user payments and in-game currencies.

7. *Content, services and assets*. The brand owners (such as Nike, see case below) play a major role in the metaverse as "content provider." This "building block" contains all business and services based on the metaverse. It could also include content independent of virtual platforms. So crucially, the metaverse will also lead to the establishment of many new entertainment franchises and consumer-facing brands, which create new content and consumer experiences.

8. *Consumer and business behaviors*. This building block contains observable changes in consumer and business behaviors which are directly associated with changes in metaverse. For example, today's generation of children express themselves, often learn and constantly socialize through virtual worlds they can touch, change and collaborate in. That is going to continue. The capabilities of these virtual worlds will grow, their ease of use will improve and their significance will expand. These behaviors almost always seem like "trends" or "fads" when they initially appear, but later show enduring global social significance. It is hard to imagine what more rapidly could have changed the perception of the metaverse, than COVID-19. Millions of the digital skeptics have now participated in virtual worlds and activities such as Fortnite, or Roblox, as they sought out things to do with their kids indoors. Further, digital meeting platforms (such as Zoom and Teams) have also increased their popularity rapidly and probably these business and education platforms will also develop their future metaverse presence.

Each of above eight building blocks is critical to the development of the metaverse. In many cases, we have a good sense of how each one needs to develop, or at least where there is a critical threshold (say, VR resolution and frame rates, or network latency).

Companies and users also need to recognize the potential of how communication will evolve in the metaverse, whose most potent value comes when users are given permission to generate content, or interact with a brand's content, in a way that makes the output able to be owned, as an emotional investment or even literally owned by way of non-fungible tokens. These tokens are virtual items that use blockchain technology to validate and assure ownership of each item, or asset, so that it is unique and unchangeable (see also the below case with examples of these tokens). Consequently, businesses must be prepared to let their users make the brand their own by transferring an interactive ownership with the brand (as in the case with non-fungible tokens). For example, a piece of virtual art bought by Company A as a token from Company B could be displayable on the digital wall of a house in a game owned by Company C. By doing this, the owner's stake is higher and there is the chance to build a real relationship that enables measurement by sales, payment or tracked engagement. This is not about just dropping a cookie or being a "follower," it is about planting the seeds of experience, dialogue and trust that turns users into followers, customers and hopefully one day, brand evangelists.

Just as with social media platforms, there will be many upsides to the metaverse. We can imagine it will enrich business, education and entertainment, as well as improve democracy through participation in the new digital public square.

What are the potential downsides? Data is an obvious concern. The story of the social media age has been that we give up more and more data about ourselves and our lives, which enables the providers of services to know us more intimately, so they can better trigger our attention and desires. The metaverse will give companies such as Facebook further access to additional data about us and with it, our status as a product will gain immense value to third parties. The big question is if we should follow the trend and wear VR headsets and haptic gloves. Then Facebook and others will learn even more and in greater detail about our bodily movements, emotional states and biodata such as heartbeat and temperature changes.

Case study – Nike and Roblox are joining forces on the metaverse

In November 2021, Nike announced its own branded virtual world coming to Roblox, called "Nikeland." Roblox, a metaverse-enabled video game platform, has significant market share in the gaming industry, with 47 million daily active users (McDonald, 2021). "Nikeland" transports gamers to a virtual replica of Nike's Global Headquarters in Beaverton, Oregon. It could present an excellent opportunity to grow brand awareness and test ideas for new shoe designs. In Nikeland, Roblox users can hang out with others, play mini-games and create their own experiences using interactive sports materials.

More specifically, here are some cool opportunities in the Nikeland metaverse (Gummer, 2022):

- *Enjoy pre-built or customized games*. Players can choose from a series of pre-built games such as tag, dodgeball and "the floor is lava." However, the platform offers infinite opportunities for customization, enabling users to create interactive sport games of their own using the Nikeland tool kit.
- *Transfer of real-life movements into online play*. Using the accelerometers in mobile devices, players can incorporate real life movements into Nikeland games. Activities such as long jumps and speed runs invite active participation, with movements transferring into in-game results.

- *Gamification element*. Everyone can enter Nikeland for free to introduce more people to sports. Moreover, players earn gold medals and blue ribbons for completing challenges like building their yard and exploring the open world. Gold medals lets players unlock new swag for their avatars, while the blue ribbons lets them buy materials for their yards.
- *Wear virtual Nike products*. Users can browse the Nikeland Showroom and select shoes, apparel and accessories to dress their virtual avatar. For example, Nike allows Roblox avatars to put the hottest Nike products on their characters, such as the Air Force Fontanka and the Air Max 2021.

The Nikeland metaverse also boosts opportunities beyond gaming. Customers from all over the world can experience not only the appearance of the Oregon headquarters, but Nike "products" and sport, free from the cost of product and equipment that could otherwise serve as barriers to participation. While Nike's experience is free (for now), the unveiling of Nikeland runs parallel with Nike's attempt to monetize its metaverse pursuits. In 2019, just prior to launching Nikeland, the company filed applications that suggested it would sell digital versions of its product online in virtual worlds (called "CryptoKicks"). Nike followed up on this strategy on December 13, 2021 when it bought digital sneaker company RTFKT – pronounced "artifact." RTFKT creates "metaverse-ready sneakers and collectibles" with the aim of bringing the scarcity culture of streetwear and limited-edition drops to the digital world. This huge opportunity is the non-fungible token market, where unique collectibles are sold as digital tokens and use blockchain technology to validate ownership. Sales of the tokens has exploded in 2021 (Johnston, 2021).

The sneaker non-fungible tokens are not tangible items that customers can wear in the physical world. Instead, the shoes will go on the feet of an avatar that walks around a virtual world, such as Nikeland. However, the best part is that such a token (CryptoKicks) can be connected to a real-world product, such as a physical pair of sneakers. The owner of such a CryptoKick can mix the digital shoe with another digital shoe to create a new style. Assuming it is feasible to manufacture the new shoe design, the owners could have their CryptoKicks made into custom physical shoes. This could be explosive for Nike's footwear business, which accounts for two-thirds of its total revenue.

The Nike–Roblox case shows that the "visible" building blocks involved in creating brand awareness and engagement among potential Nikeland customers and users are mainly:

- Virtual Platforms (4.)
- Content, Services and assets (7.)
- Consumer and Business behavior (8.)

However, Payment (6.) is also an important part of the business model, illustrated by the non-fungible tokens.

Behind these visible elements are then the rest of the "building blocks" that are necessary to get the complete metaverse to work as a whole, in an interactive 3D relationship perspective.

Keywords:
Marketing,
Virtual reality,
Social media marketing,
Avatar,
Nike

However, the fact that Nike and other big business-to-consumer brands are increasingly appearing in the metaverse is only the early beginning. The metaverse will expand very fast when development will hit the huge layer of regional and local brands below the big global brands. The sky is the limit!

References

Ball, M. (2022), "The metaverse: and how it will revolutionize everything", Liveright Publishing Corporation, available at: www.matthewball.vc/all/forwardtothemetaverseprimer (accessed 7 January 2022).

Bosworth, A. and Clegg, N. (2021), "Building the metaverse responsibly", available at: https://about.fb.com/news/2021/09/building-the-metaverse-responsibly/ (accessed 18 January 2022).

Gummer, M. (2022), "What opportunities does the metaverse hold for luxury brands in 2022", 12th January 2022, available at: https://jingdaily.com/metaverse-2022-china-5g-baidu/ (accessed 18 January 2022).

Johnston, L. (2021), "Nike's next metaverse move is RTFKT pickup", 14th Dec. 2021, available at: https://consumergoods.com/nikes-next-metaverse-move-rtfkt-pickup (accessed 18 January 2022).

McDonald, J. (2021), "Roblox's metaverse is already here and it's wildly popular", available at: www.morningbrew.com/emerging-tech/stories/2021/12/10/roblox-s-metaverse-is-already-here-and-it-s-wildly-popular (accessed 7 January 2022).

Further reading

Balis, J. (2022), "How brands can enter the metaverse", Published on HBR.org, 3rd January 2022, available at: https://hbr.org/2022/01/how-brands-can-enter-the-metaverse (accessed 18 January 2022).

Hollensen, S., Kotler, P. and Opresnik, M.O. (2022), *Social Media Marketing – A Practitioners Guide*, 5th ed., Opresnik Management Consulting, Lübeck, Germany (available on Amazon, worldwide).

Roberts, F. (2022), "The metaverse is a second chance to right the wrongs of social media", Here's how, Fast Company, 4th January, available at: www.fastcompany.com/90710082/the-metaverse-is-a-second-chance-to-right-the-wrongs-of-social-media-heres-how (accessed 6 January 2022).

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