

THE METAVERSE.



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What Is the Metaverse, and How Does It Work?

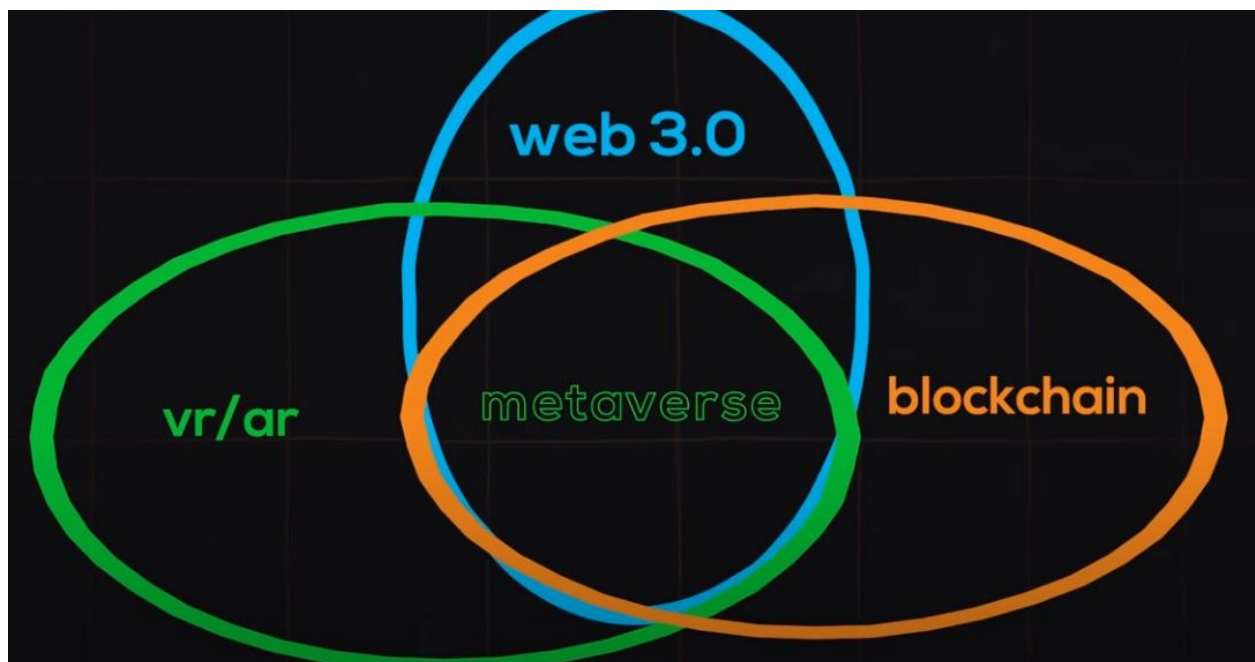
Throughout history, technology has helped create and jumpstart entirely new industries. A very good example is the internet, but as we speak, another jump is happening, and it is known as the Metaverse. The term metaverse is derived from two separate words of separate origin, the Greek word “Meta,” which means beyond, and the English word “verse,” depicting reality or the universe. Going by this, the metaverse simply means beyond reality or beyond the universe that we know. The term was first used in Neal Stephenson's dystopian sci-fi novel Snow Crash, published in 1992. The Metaverse, according to the novel, is a collection of virtual and augmented realities centered around a super-long "Street" that individuals can stroll across as avatars and access via goggles and computers. Users of public terminals are depicted as fuzzy black and white avatars, whereas users of private terminals are depicted in full color and detail. Since then, the term "metaverse" has come to refer to a wide range of activities aimed at building a more permanent virtual world that permeates our daily lives. The metaverse will be accessible via phones, laptops, wearable technology, and headsets (or a



combination of these). It will be where you work, shop, exercise, socialize, watch movies, and play video games.

Going for a more technical definition, the metaverse is a virtual world that integrates social networking, online gaming, augmented reality (AR), virtual reality (VR), and blockchain technology to allow people to connect digitally. The metaverse is a persistent shared 3D virtual space linked into the perceived virtual world.

Giving an exact definition for the metaverse now is like defining the internet in the early stages of the internet. There is still so much room for growth any definition given now would seem obsolete in a matter of time. However, to get an idea of the concept of The Metaverse, it's safe to break it down into a combination of three different technologies: Virtual reality/Augmented reality, Blockchain, and Web 3.0.



The combined application of these three technologies is what makes the Metaverse possible and to properly understand what the metaverse is, we need to thoroughly examine the individual components and the part they play in creating the metaverse;



I. **WEB 3.0:** The term, coined by the reporter John Markoff of The New York Times in 2006, refers to a new evolution of the web, its third generation, and includes specific innovations and practices. The first version of the web, popularly known as WEB1.0, is described as the first "iteration" of what grew into a growing, developing medium that eventually evolved into a platform with a wide range of applications. The early Internet consisted primarily of web pages linked together by hyperlinks, with few of the images, controls, or forms that we encounter now when we log in. It's known as the "read-only" web because it's a website that isn't interactive in any way. For the most part, the web user was a passive observer, and much of the user interaction took place offline. Individual webpages were often made up of static pages housed on an internet service provider's (ISP) web server or free web hosting services. This version of the web simply connected users to information, and a typical example is Wikipedia. Then came along WEB2.0, which is currently in place. Web 2.0 Websites allow users to do more than just retrieve information. Now users can build on the interactive facilities of Web 1.0 to provide "network as platform" computing, allowing users to run software applications entirely through a browser. Users can co-author the data on a Web 2.0 site and exercise control over it. These sites have an "architecture of participation" that encourages users to add value to the application as they use it. This stands in contrast to traditional Websites, which limit visitors to passive viewing and whose content only the site owners can modify. The most popular version of web2.0 are social media apps like Facebook, Whatsapp, Twitter, etc. WEB 2.0 basically started to blur the boundaries between users and the internet. WEB3.0 seeks to eliminate the boundaries between the internet and its users completely. It is a leap forward to open, trustless and permissionless networks.

- ‘Open’ in that they are built from open-source software built by an open and accessible community of developers and executed in full view of the world.
- ‘Trustless’ in that the network itself allows participants to interact publicly or privately without a trusted third party.
- ‘Permissionless’ in that both users and suppliers, can participate without authorization from a governing body.

Web 3.0 brings exciting new features that neither of the previous iterations of the web has been able to. As advanced as web2.0 is, the only thing users can truly own on the internet is domain names. They are the only things capable of ownership, and once a person owns a domain name, nobody else in the world can use that domain name. However, with the introduction of Web3.0, users are capable of owning “parts of the internet.” With Web3.0, everything you make, buy or sell on the internet is entirely yours, and you have full rights over it. The ability to have ownership over an item that only exists virtually is made possible by the Metaverse’s next important component, Blockchain Technology.

II. **Blockchain Technology:** Blockchain technology has paved the way for some brilliant inventions, one of which is NFTs. A non-fungible token (NFT) is a unique identifier that can cryptographically assign and prove ownership of digital goods. NFTs can be considered modern-day collectibles. They're bought and sold online and represent digital proof of ownership of any given item. NFTs are securely recorded on a blockchain - the same technology behind cryptocurrencies - ensuring the asset is one-of-a-kind. The technology can also make it difficult to alter or counterfeit NFTs. By creating an NFT, creators can verify scarcity and authenticity to just about anything digital. From digital art, music, videos,

collectibles, in-game assets, tokenized real-world assets, etc. NFTs are units of data stored on a blockchain digital ledger. Each non-fungible token acts as a certificate of authenticity, showing that a digital asset is unique and not interchangeable.

An NFT can never be changed, never be adjusted, and never be stolen, thanks to the principles of cryptography that make the blockchain unique. NFTs provides the ability to truly own a digital asset and to use it in the context of WEB3.0.

- III. **Virtual Reality/Augmented reality:** Virtual Reality (VR) is a computer-generated environment with realistic-looking images and objects that give the user the feeling of being completely immersed in their surroundings. This environment is viewed through the use of a Virtual Reality headset or helmet. Augmented reality takes VR a little bit further and goes on to blur the boundaries between reality and the virtual world. Augmented reality (AR) is an enhanced version of the real physical world that is achieved through the use of digital visual elements, sound, or other sensory stimuli delivered via technology. Where virtual reality creates an entirely new virtual experience, augmented reality combines virtual experiences and physical reality together.

The metaverse is the convergence of virtually-enhanced physical reality and [a] physically persistent virtual space." In other words, it could look like a second world layered over the one we know through the use of augmented reality in addition to a virtual space, and we; and lastly, virtual and augmented reality devices are not yet at the stage where they can be seamlessly integrated into our everyday lives. Even when all these technologies are perfected, the metaverse is not something that would just happen all at once. The metaverse will be gradually developed, and this process has been going on for a long time. People have been

attempting to create immersive virtual worlds since the 1960s, a goal fueled by the film and video game industries' efforts to create worlds. Second Life, an alt-reality computer game where you play through an avatar and may do just about anything like buy a house or get married, was launched in 2003 and is one of the most-cited examples of the metaverse. There's been a lot of discussion in recent years about developing the Metaverse and who will build it first. To appreciate the enthusiasm with which firms rush to fill this new frontier, one just needs to look at Facebook and Google's Internet success now, considering how both companies dominate the digital industry. Observing that quest, there's a good chance that Fortnite, the video game that has converted celebrities into players and players into celebrities, has been laying the groundwork for the Internet's future right in front of our eyes. Fortnite was developed in 2017 as a four-player cooperative game about protecting a base, a popular gaming genre. As the game's global popularity surged, the Battle Royale mode was added later, after the genre acquired traction on the PC market. Throughout 2018, Fortnite gained a reputation for being less of a video game and more of a favored social network for Generation Z. It has hosted live events that have inspired interest both in-game (such as when cataclysmic events changed the game's map) and in the real world when the game made headlines by disappearing into a black hole for two days in October to reset its servers for its second chapter). The game also hosted concerts for Travis Scott and Ariana Grande in 2020 and 2021, respectively. All of these factors have led to players spending hundreds of millions of dollars on V-Bucks, Fortnite's in-game currency, bringing Epic hundreds of millions of dollars in real-world revenue. Of course, Fortnite isn't the only instance of a game displaying key traits of the Metaverse. Some investors believe Roblox, which allows users to create their games, will build the Metaverse.





Even more recently, the founder of Facebook, now known as Meta, Mark Zuckerberg, announced a change of name for his company, formerly known as Facebook, to better represent what the company is working toward. The move was seen as a nod to the metaverse, as the company declared its aspirations to go beyond just social media. The name change was announced at the Facebook Connect augmented and virtual reality conference. The company has indicated that

augmented and virtual reality will be a key part of its strategy in the coming years. The move by Facebook started about seven years ago when they first acquired Oculus in 2014 (Oculus is a branch of Meta Platforms (formerly Facebook Inc.), which makes virtual reality headsets such as the Oculus Rift and Oculus Quest). Meta believes the metaverse will be the successor to the mobile internet. To start with, Meta has developed a virtual reality platform known as Horizon. It allows users to interact in a virtual environment as if they were in the same physical vicinity. The platform requires an Oculus Rift (S) or Oculus Quest (2) virtual reality headset to operate and employs complete 3D motion via the headset's motion capture technology and two hand-held motion controllers to interact with game elements. Within the limitations of their actual floor space, players may explore the environment around them while wandering further by utilizing controller buttons to teleport a short distance or travel constantly across the virtual space. Portals to prominent user-generated worlds, which are produced by users utilizing an integrated experience development system, may be found in the hub world (also known as "plaza").



In August 2021, Facebook released the open beta of Horizon Workrooms, a collaboration app targeted at teams managing remote-work environments. The app offers virtual meeting rooms, whiteboards, and video call integration for up to 50 people.

Other than Facebook(now Meta), there are many other big companies currently working on creating several experiences or infrastructures for the metaverse;

- Microsoft also announced a platform known as Microsoft Mesh, and it's a Mixed Reality platform that aims to simplify app development and collaboration. The solution is compatible with a variety of virtual and augmented reality headsets, allowing users to cooperate more efficiently in both physical and virtual settings.



- **ROBLOX:** Roblox is trying to build a virtual world that rivals our own. It is a virtual universe that lets you create, share experiences with friends, and be anything you can imagine. Getting players to interact is critical to Roblox's long-term success, and voice chat is an incredible feature that the platform

provides. And not just any party chat, but physical voice conversation based on proximity. Roblox seems like a bustling, live virtual environment where



users are motivated to seek out and connect with one another thanks to this technology. Players will be able to hear each other better through proximity voice chat based on how near they are to each other. This can help to create friendships that are similar to those found in the actual world. This feeling of realism contributes to a genuine sense of immersion and world-building. And it is the combination of these factors that will result in a more immersive metaverse.

- **The Sandbox:** The Sandbox is a virtual Metaverse where players can play, build, own, and monetize their virtual experiences. The Sandbox is an Ethereum-based platform where players can “play, create, own, and govern a virtual world,” its site states. Players can own in-game assets in the form of non-fungible tokens (NFTs), such as plots of land that they can build on. The Sandbox token, SAND, has a \$2.46 billion market cap, according to data from intelligence platform CoinMarketCap. The startup’s majority stakeholder is Hong Kong-based gaming firm Animoca Brands, an early metaverse and GameFi backer that was valued at \$2.2 billion after raising \$65 million in October.





The sandbox takes a slightly different approach from the other metaverses listed in the sense that it introduces play to earn mechanics into its game infrastructure.

HOW LONG UNTIL THE METAVERSE?

NEWS FLASH!!! It is already here! No matter how little, the iterations of the Metaverse that we have today are the foundations of the Metaverse, just like the Web1.0 of the Metaverse. However, the full version of the Metaverse is likely not going to be here for another decade. Various tech and business moguls have made their predictions on when the metaverse will be “ready.”

- "The full vision of the Metaverse is decades away. It requires extraordinary technical advancements ... and perhaps regulatory involvement too. In addition, it will require overhauls in business policies and changes to consumer behavior. But the term has become so recently popular because we can feel it beginning." — Hollywood-exec-turned-metaverse-expert

Matthew Ball in the foreword to his upcoming book "The Metaverse."
According to Matthew Ball, the Metaverse, we think, will...

- Be persistent – which is to say, it never “resets” or “pauses” or “ends,” it just continues indefinitely.
- Be synchronous and live – even though pre-scheduled and self-contained events will happen, just as they do in “real life,” the Metaverse will be a living experience that exists consistently for everyone and in real-time.
- Be without any cap to concurrent users while also providing each user with an individual sense of “presence” – everyone can be a part of the Metaverse and participate in a specific event/place/activity together, at the same time and with individual agency.
- Be a fully functioning economy – individuals and businesses will be able to create, own, invest, sell, and be rewarded for an incredibly wide range of “work” that produces “value” recognized by others.
- Be an experience that spans both the digital and physical worlds, private and public networks/experiences, and open and closed platforms.
- Offer unprecedented interoperability of data, digital items/assets, content, and so on across each of these experiences – your Counter-Strike gun skin, for example, could also be used to decorate a gun in Fortnite or be gifted to a friend on/through Facebook. Similarly, a car designed for Rocket League (or even for

Porsche's website) could be brought over to work in Roblox. Today, the digital world basically acts as though it were a mall where every store uses its own currency, requires proprietary ID cards, has proprietary units of measurement for things like shoes or calories, and different dress codes, etc.

- Be populated by “content” and “experiences” created and operated by an incredibly wide range of contributors, some of whom are independent individuals, while others might be informally organized groups or commercially-focused enterprises.

There are a few other ideas that may be core to the Metaverse but are not widely agreed upon. One of these concerns is whether participants will have a single consistent digital identity (or “avatar”) that they will use across all experiences. This would have practical value but is probably unlikely as each of the leaders in the “Metaverse era” will still want their own identity systems. Today, for example, there are a few dominant account systems – but none have exhaustive coverage of the web, and they often stack atop one another with only limited data sharing/access (e.g., your iPhone is based around an iOS account, then you might log into an app using your Facebook ID, which itself is your Gmail account). There is also disagreement on how much interoperability is required for the Metaverse to really be “the Metaverse,” rather than just an evolution of today's Internet. Many also debate whether a true Metaverse can have a single operator (as is the case in Ready Player One). Some believe the definition (and success) of a Metaverse requires it to be a heavily decentralized platform built mostly upon community-based standards and protocols (like the open web) and an “open source” Metaverse OS or platform (this doesn't mean there won't be dominant closed platforms in the Metaverse).



- "Our hope is that within the next decade, the metaverse will reach a billion people, host hundreds of billions of dollars of digital commerce, and support jobs for millions of creators and developers." — Meta CEO Mark Zuckerberg, laying out a more ambitious timeline in Meta's founder's letter.
- "What the internet is for information, the metaverse is going to do for social connections. I'm no longer bound by physical distance or all these constraints in terms of who I interact with or how I represent who I am. All these things are suddenly unleashed. It's insanely disruptive." — Roblox CBO Craig Donato told Protocol last year why he thinks his company is well-positioned for the metaverse.
- "I would hope that the Metaverse as a future medium can be a much greater engine for economic efficiency than any of the closed systems that exist today. And that we'd ultimately get to a point where a much higher percentage of the profits go to creators than with any of these other platforms that currently exist." — Epic Games CEO Tim Sweeney on the economy of the metaverse.

WHAT RISK DOES THE METAVERSE POSE TOWARD CONSUMER PRIVACY?

Facebook, YouTube, and other social networks have rightfully been scrutinized for their bungling of misinformation and privacy issues and the effect they're having on the mental health of their users. These issues don't disappear in the metaverse, but they will likely play out very differently. Hiring tens of thousands of moderators may not be the right approach to prevent hate and harassment in real-time environments, and spatial data gathered by headsets surveying people's living rooms raises all sorts of new privacy questions. Paying attention to these issues from the get-go will be important for both industry insiders and regulators

alike. Although the metaverse seems like it's built to replace the internet, it is important to remember that it does not hold the promise of solving the current issues plaguing the internet today. However, if the concept of decentralization is permitted to flourish in the metaverse, a reality free of privacy issues is possible.

WHO IS BUILDING THE METaverse?

As mentioned several times above, various companies are building various experiences and infrastructures for the metaverse. From hardware companies building VR and AR devices to software developers working on experiences, for example, Horizons by Meta, to the blockchain developers creating blockchain platforms that will host the metaverse.

WHY IS THE METaverse IMPORTANT?

The metaverse is anticipated to have a strong connection with the real-world economy, eventually becoming an extension of it. In other words, corporations and individuals will be able to engage in economic activity in the metaverse in the same manner they do now. Simply said, this entails the ability to create, trade, and invest in goods, services, and products.



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