

# What Is the Metaverse, Exactly?

Everything you never wanted to know about the future of talking about the future.

**TO HEAR TECH** CEOs like Mark Zuckerberg or Satya Nadella talk about it, the metaverse is the future of the internet. Or it's a video game. Or maybe it's a deeply uncomfortable, worse version of Zoom? It's hard to say.

It's been a year and a half since Facebook announced it was rebranding to Meta and would focus its future on the upcoming “metaverse.” In the time since, the term itself has eroded into near meaninglessness. Meta is building a VR social platform, Roblox is facilitating user-generated video games, and some companies are offering up little more than broken game worlds that happen to have NFTs attached.

Advocates from niche startups to tech giants have argued that this lack of coherence is because the metaverse is still being built, and it's too new to define what it means. The internet existed in the 1970s, for example, but not every idea of what that would eventually look like was true.

On the other hand, while the big tech money has started moving into generative AI, a lot of marketing hype (and money) has already been wrapped up in selling the idea of “the metaverse.” Facebook, in particular, is in an especially vulnerable place after Apple's move to limit ad tracking hit the company's bottom line. It's impossible to separate Facebook's vision of a future in which everyone has a digital wardrobe to swipe through from the fact that Facebook really wants to make money selling virtual clothes. But Facebook isn't the only company that stands to financially benefit from metaverse hype.

So, with all that in mind ...

## Seriously, What Does “Metaverse” Mean?

To help you get a sense of how vague the term “the metaverse” can be, here's an exercise: Mentally replace the phrase “the metaverse” in a sentence with “cyberspace.” Ninety percent of the time, the meaning won't substantially change. That's because the term doesn't really refer to any one specific type of technology, but rather a broad (and often speculative) shift in how we interact with technology. And it's entirely possible that the term itself will eventually become just as antiquated, even as the specific technology it once described becomes commonplace.

Broadly speaking, the technologies companies refer to when they talk about “the metaverse” can include virtual reality—characterized by persistent virtual worlds that continue to exist even when you're not playing—as well as augmented reality that combines aspects of the digital and physical worlds. However, it doesn't require that those spaces be exclusively accessed via VR or AR. Virtual worlds—such as aspects of *Fortnite* that can be accessed through PCs, game consoles, and even phones—have started referring to themselves as “the metaverse.”

Many companies that have hopped on board the metaverse bandwagon also envision some sort of new digital economy, where users can create, buy, and sell goods. In the more idealistic visions of the metaverse, it's interoperable, allowing you to take virtual items like clothes or cars from one platform to another, though this is harder than it sounds. While some advocates claim new technologies like NFTs can enable portable digital assets, this simply isn't true, and bringing items from one video game or virtual world to another is an enormously complex task that no one company can solve.

It's difficult to parse what all this means because when you hear descriptions like those above, an understandable response is, “Wait, doesn't that exist already?” *World of Warcraft*, for example, is a persistent virtual world where players can buy and sell goods. *Fortnite* has virtual experiences like concerts and an exhibit where Rick Sanchez can learn about MLK Jr. You can strap on an Oculus headset and be in your own personal virtual home. Is that

really what “the metaverse” means? Just some new kinds of video games?

Well, yes and no. Saying that *Fortnite* is “the metaverse” would be a bit like saying Google is “the internet.” Even if you spend large chunks of time in *Fortnite*, socializing, buying things, learning, and playing games, that doesn't necessarily mean it encompasses the entire scope of what people and companies mean when they say “the metaverse.” Just as Google, which builds parts of the internet—from physical data centers to security layers—isn't the entire internet.

Tech giants like Microsoft and Meta are working on building tech related to interacting with virtual worlds, but they're not the only ones. Many other large companies, including Nvidia, Unity, Roblox, and even Snap—as well as a variety of smaller companies and startups—are building the infrastructure to create better virtual worlds that more closely mimic our physical life.

For example, Epic has acquired a number of companies that help create or distribute digital assets, in part to bolster its powerful Unreal Engine 5 platform. And while Unreal may be a video game platform, it's also being used in the film industry and could make it easier for anyone to create virtual experiences. There are tangible and exciting developments in the realm of building digital worlds.

Despite this, the idea of a *Ready Player One*-like single unified place called “*the metaverse*” is still largely impossible. That is in part because such a world requires companies to cooperate in a way that simply isn't profitable or desirable—*Fortnite* doesn't have much motivation to give players a portal to jump straight over to *World of Warcraft*, even if it were easy to do so, for example—and partially because the raw computing power needed for such a concept could be much further away than we think.

This inconvenient fact has given rise to slightly different terminology. Now many companies or advocates instead refer to any single game or platform as “a metaverse.” By this definition, anything from a VR concert app to a video game would count as a “metaverse.” Some take it further, calling the collection of various metaverses a “multiverse of metaverses.” Or maybe we're living in a “hybrid-verse.”

Or these words can mean anything at all. Coca-Cola launched a “flavor born in the metaverse” alongside a Fortnite tie-in mini-game. There are no rules.

It's at this point that most discussions of what the metaverse entails start to stall. We have a vague sense of what things currently exist that we could *kind of* call the metaverse if we massage the definition of words the right way. And we know which companies are investing in the idea, but there's nothing approaching agreement on what it *is*. Meta thinks it will include fake houses you can invite all your friends to hang out in. Microsoft seems to think it could involve virtual meeting rooms to train new hires or chat with your remote coworkers

Notably, Apple has thrown its hat into the ring of augmented reality computing, but without ever once saying the word “metaverse.” The company's new Vision Pro headset is pitched as a “spatial computing” platform, working similar to how you might expect a Mac or iPad to work, except with AR-powered apps. Its key distinguishing factor is a screen that can be adjusted to make the real world visible with apps visible as an overlay. While it remains to be seen whether this kind of interface will catch on, Apple is explicitly distancing itself from the kind of rhetoric that aligns with \*Ready Player One—\*style immersion in a virtual world.

This stands in relatively grounded contrast with other companies' visions of the future, which range from optimistic to outright fan fiction. At one point during Meta's original presentation on the metaverse, the company showed a scenario in which a young woman is sitting on her couch scrolling through Instagram when she sees a video a friend has posted of a concert that's happening halfway across the world

The video then cuts to the concert, where the woman appears in an Avengers-style hologram. She's able to make eye contact with her friend who is physically there, they're both able to hear the concert, and they can see floating text hovering above the stage. This seems cool, but it's not advertising a real product or even a possible future one. In fact, it brings us to the biggest problem with “the metaverse.”

## **Why Does the Metaverse Involve Holograms?**

When the internet first arrived, it started with a series of technological innovations, like the ability to let computers talk to each other over great distances or the ability to hyperlink from one web page to another. These technical features were the building blocks that were then used to make the abstract structures we know the internet for: websites, apps, social networks, and everything else that relies on those core elements. And that's to say nothing of the convergence of the interface innovations that aren't strictly part of the internet but are still necessary to make it work, such as displays, keyboards, mice, and touchscreens.

With the metaverse, there are *some* new building blocks in place, like the ability to host hundreds of people in a single instance of a server (idealistic metaverse predictions suppose this will grow to thousands or even millions of people at once, but this might be [overly optimistic](#)), or motion-tracking tools that can distinguish where a person is looking or where their hands are. Even Apple's Vision Pro has some breakthrough tech that is genuinely exciting, like controller-free interfaces or pass-through screens that can be very exciting and feel futuristic.

However, there are limitations that may be impossible to overcome. When tech companies like Microsoft or Meta show fictionalized videos of their visions of the future, they frequently tend to gloss over just *how* people will interact with the metaverse. VR headsets are still very clunky, and most people [experience motion sickness](#) or physical pain if they wear them for too long.

Augmented reality glasses face a similar problem, on top of the not-insignificant issue of figuring out how people can wear them around in public without [looking like huge dorks](#). And then there are the accessibility challenges of VR that many companies are [shrugging off for now](#). Meanwhile, Apple's Vision Pro “solves” the problem of users who have to wear glasses by ... [selling prescription lens add-ons](#).

So, how do tech companies show off the *idea* of their technology without showing the reality of bulky headsets and dorky glasses? So far, their primary solution seems to be to simply fabricate technology from whole cloth. The holographic woman from Meta's presentation?

I hate to shatter the illusion, but it's simply not possible with even very advanced versions of existing technology.

Unlike motion-tracked digital avatars, which are kind of janky right now but could be better someday, there's no janky version of making a three-dimensional picture appear in midair without tightly controlled circumstances. No matter what Iron Man tells you.

Perhaps these are meant to be interpreted as images projected via glasses—both women in the demo video are wearing similar glasses, after all—but even that assumes a lot about the physical capabilities of compact glasses, which Snap can tell you isn't a simple problem to solve. And as Apple's demo showed, it's not easy to reconstruct a 3D image of someone in another place without edging close to nightmare fuel.

This kind of glossing over reality occurs frequently in video demos of how the metaverse could work. Another of Meta's demos showed characters floating in space—is this person strapped to an immersive aerial rig or are they just sitting at a desk? A person represented by a hologram—do they have a headset on, and if so how is their face being scanned? And at points, a person grabs virtual items but then holds those objects in what seems to be their physical hands.

This demo raises so many more questions than it answers.

To a limited extent, this is fine. Microsoft, Meta, and every other company that shows wild demos like this are trying to give an artistic impression of what the future could be, not necessarily account for every technical question. It's a time-honored tradition going back to AT&T's demo of a voice-controlled foldable phone that could magically erase people from images and generate 3D models, all of which might've seemed similarly impossible at the time.

However, the past year and a half of metaverse pitches—from tech giants and startups alike—have relied heavily on lofty visions that break from reality. Chipotle's “metaverse” was an ad disguised as a Roblox video game. Stories about scarce “real estate” in “the metaverse” refer to little more than a buggy video game with virtual land tokens (which also glosses over the very real security and privacy issues with most popular NFTs right now).

The confusion and disappointment surrounding most “metaverse” projects are so pervasive that when a video from 2017 of a Walmart VR shopping demo started trending again in January 2022, people immediately thought it was yet another metaverse demo. It also helped demonstrate how much of the current metaverse discussion is built on hype alone. Walmart's VR shopping demo obviously never went anywhere (and for good reason). So why should anyone believe that it's the future when Chipotle does it?

This kind of wishful-thinking-as-tech-demo leaves us in a place where it's hard to pinpoint which aspects of the various visions of the metaverse (if any) will actually be real one day. If VR and AR headsets become comfortable and cheap enough for people to wear on a daily basis—a substantial “if”—then perhaps a virtual poker game with your friends as robots and holograms and floating in space could be somewhat close to reality. If not, well you could always play Tabletop Simulator on a Discord video call.

The flashiness of VR and AR also obscure the more mundane ways that our existing, interconnected digital world could be improved right now. It would be trivial for tech companies to invent, say, an open digital avatar standard, a type of file that includes characteristics you might enter into a character creator—like eye color, hairstyle, or clothing options—and let you take that data everywhere, to be interpreted by a game engine however it chooses. There's no need to build a more comfortable VR headset for that.

But that's not as fun to imagine.

## **What's the Metaverse Like Right Now?**

The paradox of defining the metaverse is that in order for it to be the future, you have to define away the present. We already have MMOs that are essentially entire virtual worlds, digital concerts, video calls with people from all over the world, online avatars, and commerce platforms. So in order to sell these things as a new vision of the world, there has to be some element of it that's new.

Spend enough time having discussions about the metaverse and someone will inevitably (and exhaustingly) reference fictional stories like *Snow Crash*—the 1992 novel that coined the term “metaverse”—

or *Ready Player One*, which depicts a VR world where everyone works, plays, and shops. Combined with the general pop culture idea of holograms and heads-up displays (basically anything Iron Man has used in his last 10 movies) these stories serve as an imaginative reference point for what the metaverse—a metaverse that tech companies might actually sell as something new—could look like.

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That kind of hype is arguably more vital to the idea of the metaverse than any specific technology. It's no wonder, then, that people promoting things like NFTs—cryptographic tokens that can serve as certificates of ownership of a digital item, sort of—are also latching onto the idea of the metaverse. Sure, NFTs are bad for the environment and the public blockchains most are built on come with massive privacy and security problems, but if a tech company can argue that they'll be the digital key to your virtual mansion in *Roblox*, then boom. You've just transformed your hobby of buying memes into a crucial piece of infrastructure for the future of the internet (and possibly raised the value of all that cryptocurrency you're holding.)

It's important to keep all this context in mind because while it's tempting to compare the proto-metaverse ideas we have today to the early internet and assume everything will get better and progress in a linear fashion, that's not a given. There's no guarantee people will even *want* to hang out sans legs in a virtual office or play poker with Dreamworks Mark Zuckerberg, much less that VR and AR tech will ever become seamless enough to be as common as smartphones and computers are today.

In the time since Facebook's rebrand, the concept of “the metaverse” has served as a powerful vehicle for repackaging old tech, overselling the benefits of new tech, and capturing the imagination of speculative investors. A lot of money has also been lost, with little to show for it. Meta itself lost \$13.7 billion in 2022, and then spent the first half of 2023 laying off over 10,000 employees.



But money pouring into a space doesn't necessarily mean a massive paradigm shift is right around the corner, as everything from 3D TVs to Amazon's delivery drones and Google Glass can attest. The history of tech is littered with the skeletons of failed investments.

That doesn't mean there's nothing cool on the horizon. VR headsets like the Quest 2 are cheaper than ever, and Apple's Vision Pro could be really cool if there's ever a version that costs less than a laptop, tablet, and phone combined. Video games and other virtual worlds are getting easier to build and design. And I think the advances in photogrammetry—the process of creating digital 3D objects out of photos or video—make it an incredibly cool tool for digital artists.

But to a certain extent, the tech industry writ large depends on futurism. Selling a phone is fine, but selling *the future* is more profitable. In reality, it may be the case that any real “metaverse” would be little more than some cool VR games and digital avatars in Zoom calls, but mostly just something we still think of as the internet.

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