



Center for Board Effectiveness

On the board's agenda | US

What's all the buzz about the metaverse?

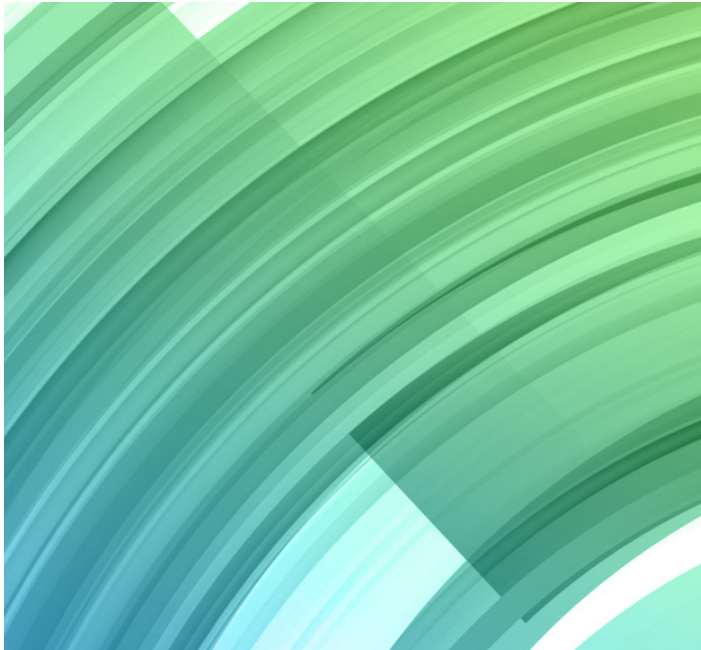
In the next evolutionary step of digital technology, interactions are expected to get more virtual

Concepts once limited to science fiction and video gaming are transcending the bounds of reality and coming to life in the physical world, offering the potential to transform many aspects of business and personal interactions. Welcome to the metaverse.

The metaverse is a hot topic of discussion in technology circles, and a growing number of consumers and consumer brands are getting on board. Some major companies are placing big bets on the metaverse, or [unlimited reality](#), to fundamentally change the way people interact. As a result, the metaverse is escalating quickly to a topic for boards to address as they consider their companies' growth and talent strategies, opportunities, and risk profiles.

What is the metaverse? It is a next-generation internet, where content has evolved from text, to graphics, to video—and now, to immersive digital interactions. The metaverse is a form of digital interaction where connected, virtual experiences simulate those of the physical world.

Unlimited reality integrates digital and physical experiences to enable immersive interactions that move people beyond the glass screens on traditional devices. This vision of the internet is rapidly gaining traction as a platform for a wide variety of human interactions. Two significant drivers have catapulted recent interest and discussion: [➤](#)



- Advancing technology is driving increased connectivity, enabling communication and immersion experiences that were not possible until recently. Information sharing, sensing, and simulation are all advancing rapidly and becoming more interconnected thanks to newfound ubiquity of high-speed advanced networking and the availability and affordability of technology to render convincing three-dimensional worlds.
- People are spending more time engaging with digital systems and socializing in digital spaces than ever before. Some people are beginning to see their virtual lives as equivalent to their physical lives.¹ Think, for example, of Gen X, Gen Z, and millennials who were raised on the internet and 3D gaming. The pandemic may have helped further accelerate a movement to virtual worlds by giving people an environment they may find preferable to the limitations of phone calls and videoconferencing.

Some observers of recent trends are circumspect about the potential opportunities related to the metaverse, casting recent startup activity as tantamount to the dot-com surge of the late 1990s, which was followed by numerous business failures and market declines in the early 2000s. It's apparent, however, that digital spaces are already popular for socializing and entertaining, and they are beginning to turn the corner toward productivity-oriented use cases such as presentations, collaboration, and even research and development.

Many technology, media, and telecommunications companies are active in this area, with gaming, social media, and entertainment applications. Many consumers, brands, and creators are engaging in a variety of ways to produce concerts in gaming platforms

and sell branded digital goods in virtual worlds. Many people are personalizing their "avatars," or their digital personas, and they are buying and selling virtual real estate and art.

Not all uses are focused on gaming or consumer interactions, however. Enterprises can also leverage virtual worlds. Digital twins of physical environments can be made hyper-realistic and physically accurate. The physical environment to be replicated may be natural, or it may be something that was constructed, such as a building or other type of structure, an industrial operation, or a transportation network. Humans, robots, and AI agents can work together inside these digital twins to plan, design, and test—accelerating innovation and planning cycles for a variety of business needs.

Applications also exist for training and onboarding new employees. Virtual meetings or events can replace or augment traditional, in-person environments. Colleagues can connect from anywhere in large or small groups to meet and collaborate.

A rising tide in business?

From a business standpoint, unlimited reality represents enormous and rapidly growing opportunities in the marketplace. Metaverse-focused companies raised \$10.4 billion across more than 600 venture capital deals in 2021, nearly double the amount raised in 2020.² A recent Bloomberg analysis estimates global metaverse revenue opportunities could approach \$800 billion in 2024.³ Recent research by AllianceBernstein says the combined annual run-rate of the most relevant markets, which is a predictor of financial performance, is valued at \$2 trillion and is growing.⁴

Established technology companies, independent creators, and startups are taking on varied roles in building the metaverse. Platforms are forming where users can engage with or experience the metaverse, while tools are emerging to enable creators to make and monetize their metaverse content.

The underlying software and computing power necessary to provide a backbone for the metaverse are rapidly developing. The metaverse likely will require edge computing capabilities and faster connectivity, which would, in turn, necessitate investment in next-generation chips, servers, and networking hardware.

A variety of consumer and enterprise hardware will be required to support the metaverse as well. Demand may increase for devices such as headsets, gloves, smart jewelry, improved cameras, sensors, and other peripherals that can enable consumers to access the metaverse. And to help power this ecosystem, longer-lasting, smaller-footprint batteries may also be important.

In the coming few years, the metaverse has the potential to evolve traditional business models in many ways. Consider the scope of applications that can emerge as the metaverse evolves: ➤

1. ["The Metaverse Explained," Deloitte User Friendly](#) podcast series featuring Mic Locker, US telecom, media and entertainment sector leader, Deloitte Consulting LLP, Feb. 4, 2022.
2. Sophia Kunthara, ["VCs will spend billions more to make the metaverse a reality,"](#) Crunchbase News, Nov. 16, 2021.
3. Matthew Kanterman and Nathan Naidu, ["Metaverse may be \\$800 billion market, next tech platform,"](#) Bloomberg, Dec. 1, 2021.
4. Mark Shmulik, et al., ["Bernstein enters the metaverse: A primer on what it is, the size of the prize, and why you should care,"](#) AllianceBernstein, Dec. 7, 2021

Work, collaboration—The metaverse could improve the transition to hybrid working arrangements by providing people with virtual working environments that enhance interactions. Imagine virtual meetings where people show up via their avatars and engage in conversations that are more lifelike than current videoconferencing capabilities allow.

Manufacturing, logistics—Companies can use digital twins to emulate manufacturing and logistics processes within the metaverse, which may enable lower-cost predictive planning and maintenance. Industrial engineers can test product designs in a mixed-reality launch pad, for example.

Education, training—Online experiences combined with avatars could expand the possibilities for learning and collaboration. A single avatar could move fluidly between spaces, from lecture hall to science laboratory to operating room. Medical students might train on a single avatar before using their skills on live patients.

Consumer—Businesses and consumers could operate in a space where people are living, working, and shopping in a virtual world, which could expand the potential scope of interactions and transactions.

Government, public sector—The metaverse offers a platform for civic engagement and for government officials to be more accessible to their constituents. City meetings and public events can be held virtually. Even city halls and embassies can be virtualized. This could lead to broad questions about how organizations can cost-effectively deliver services and where physical structures are even necessary.

Health, well-being—The current focus on telehealth can evolve to virtual care to recreate the in-person experience. The metaverse could unlock health care innovations, from mental health and pain management to surgery, fitness, physical therapy, and patient care. Home gyms can get another significant upgrade.

The board's role in metaverse discussions

As visionary technologists and strategists consider an expanding scope of possible use cases for the metaverse, the board has a role to play in guiding conversations with a vigilant focus on strategy and risk. Boards may even benefit from exploring their own possible uses to get familiar with the technology and better understand its applicability to the broader organization.

For instance, imagine attending a board meeting wearing a pair of glasses that overlays physical surroundings with digital information. Whatever or whomever a director is viewing could be augmented with digitally rendered information. Wearing these glasses, the meeting agenda could be overlaid on the wall or a coffee cup, and board documents could be overlaid with data sources or the recency of



Web 3.0 and the metaverse

Web 3.0 represents a related vision of the next generation of the internet, characterized by opportunities to leverage blockchain, or distributed ledger technologies, as an emerging way to enable multiparty business and consumer interactions. Web 3.0 is an attempt to build independent systems that are based on a technology ecosystem enabled by blockchain. It is characterized by a notion that all participants are equally able to create, own, transact, and monetize digital assets.

Web 3.0 portends new business models that arise by streamlining current complex processes across a range of industries. While initial use cases focused on digital currencies, emerging use cases involve functions other than finance, such as smart contracts, validating certifications, and supply chain transparency. Some core characteristics of Web 3.0 include:

Reconstructed value chain—Web 3.0 economics favor creators (developers, service providers, and artists) and generally disrupt intermediaries and brokers who have historically connected those creators to their customers. Whereas some Web 3.0 experiments envision a completely autonomous and decentralized future, many others are more incremental, focused on streamlining transactions, reducing costs, and providing efficiencies to legacy business processes.

High transparency, visibility—Blockchain-based systems often default to generalized sharing by design. Increased transparency and visibility are often viewed as helpful. The certifiable authenticity that blockchains provide allows for novel ways of representing value through digital goods.

information to provide additional context. At a shareholder meeting a gaze landed on a specific audience member could produce a biographical sketch of the person—background and context that might be important when the person approaches a microphone to speak.

The idea is to provide curated, just-in-time information by augmenting and enriching physical environments, focusing attention on important signals and filtering out noise. Although these ideas may seem far in the future, they are accessible now. Board and committee meetings of any type conducted in a virtual space could overcome some of the challenges of the past few years with hybrid or virtual meetings. ➤





The list of uncertainties, potential risks, and opportunities for boards to understand and explore related to the metaverse is considerable:

Security, privacy—The metaverse likely introduces new cyber vulnerabilities and risks related to digital identity and fraud. Businesses and governments are likely to focus on protecting personal information while also identifying and addressing emerging cyber risks.

Technology investments—The investments in edge computing, next-generation connectivity, software, hardware, and talent to support shifts to virtual reality may be significant.

Taxes, ownership, regulation—A transactional, international virtual universe raises new uncertainties in tax, ownership, and regulatory issues that are traditionally rooted in geographic or jurisdictional boundaries. It also raises questions about policies and practices related to digital assets and digital currencies.

Safety, integrity, responsibility—The metaverse could introduce new challenges in areas such as trust, reputational risk, and even mental health concerns, some of which may not yet have been contemplated.

Talent, skills—The metaverse can enable people to reimagine aspects of how they work, and it can dramatically expand the talent pool for hiring purposes to the extent people can work from literally anywhere. It may also introduce skills gaps in areas such as three-dimensional design and visualization.

Business models—Radical new ways of working and interacting may lead to new business models and opportunities, some of which are yet to be defined.

Ecosystem management—Platform and technology selection in the metaverse may be a complex exercise for many companies, especially in the early stages of evolution.

Inclusivity, social policing—Providing an inclusive experience and managing participants' behaviors is already challenging in some virtual environments, as it can be in physical environments.

Whatever the ultimate trajectory of the metaverse, it's clear that technology is evolving rapidly to make virtual interactions more immersive, more diverse, and more innovative. Boards can bring wisdom and calm to discussions about metaverse opportunities as well as other ideas about next-generation internet technology that may emerge. Directors have a responsibility to help companies remain focused on how this period of transition in the evolution of technology can be leveraged to achieve the company's strategy and mission. ➤



Questions for the board to consider asking:

1. What is our company's business case for pursuing the metaverse? What opportunities does the metaverse present for our company's growth, innovation, and talent experience?
2. Should our organization pursue metaverse adoption and development on its own, or are there any alliances, partnerships, industry associations, or other enterprise relationships that might be leveraged as we consider opportunities?
3. What controls or processes are in place for our company to explore the opportunities and risks associated with new domains such as the metaverse?
4. Should we consider standing up a technology committee to drill into opportunities and risks associated with emerging technologies underpinning our company's performance?
5. What policies or processes do we already have in place with respect to digital assets and digital currencies? Do they need to be reconsidered?
6. What risks might ensue from each potential use case, including the ethical implications of new technology and digital experiences?
7. What risks might ensue from becoming an early adopter versus a follower?
8. Who has regulatory authority over the metaverse, and how might that affect our opportunities to leverage or exploit the metaverse?
9. What are our peers doing with respect to leveraging or investing in the metaverse?
10. What processes do we have in place to monitor the evolving metaverse environment and continually reevaluate opportunities and risks?

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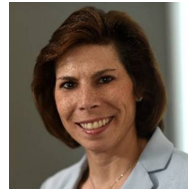


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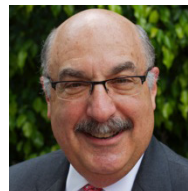
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