



# Metaverse

## State of Play, Trends and Trajectory

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The metaverse is a vision of the next iteration of the internet: a single, shared, immersive, persistent, 3D virtual space where humans and machines interact with one another and with data, enhancing the physical world as much as replacing it. The metaverse meeting this definition does not yet exist, though many of its components do, as does an increasing aspiration to create it.

This report takes a practical look at the state of play in the industrial, enterprise and social spheres of the metaverse from a financial and a technical viewpoint. This report leverages survey data and experience across multiple research agendas and curation of financial data and projections. It also clarifies the relationship between metaverse and emerging technologies such as Web3, blockchain, NFTs, cryptocurrency, AI and IoT.

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### Executive Overview

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# Executive summary

## Introduction

The metaverse is a vision of the next iteration of the internet: a single, shared, immersive, persistent, 3D virtual space where humans and machines interact with one another and with data, enhancing the physical world as much as replacing it. The metaverse meeting this definition does not yet exist, though many of its components do, as does the increasing aspiration to create it.

This report takes a practical look at the state of play in the industrial, enterprise and social spheres of the metaverse from a financial and a technical viewpoint, using our survey data and experience across multiple research agendas and curation of financial data and projections. It also clarifies the relationship between metaverse and emerging technologies such as Web3, blockchain, NFT, cryptocurrency, AI and IoT.

We consider a diverse range of use cases from simulating a factory to producing a community art project. We reflect on their similarities and differences and how they are impacted by the way we engage digitally, such as by incorporating the benefits of spatial, real-time and multi-user approaches to interaction.

With a constellation of use cases in mind, we have qualified and quantified the metaverse's revenue opportunities in segments including video games, hardware, commercial software, e-commerce and advertising.

This report also details the history of investments powering what we consider to be the top 195 companies operationally or strategically focused on building the metaverse and the most active investors behind those companies.

Finally, we examine the potential inhibitors, accelerators and future twists for discrete elements of the metaverse, such as the emergence of AI content generation from basic text descriptions, the impact of new technologies like Wi-Fi 7 and 6G, and the relevance of ESG in the evolution of our digital interactions.

## About this report

This report describes what we know today about the metaverse. It is informed through briefings, events and participation in activity in virtual worlds over many years. It combines 451 Research and Kagan products and survey data to present a unified view of the state of the metaverse.

The revenue estimates and forecasts in this report regarding video games, hardware, and commercial software and services leverage published Kagan data sets based on primary market research, proprietary software and device tracking models, and survey data. Our analysis of advertising, e-commerce and other revenue opportunities are based on third-party research as well as Kagan's historic data sets around similar emerging and disruptive markets.

Our metaverse investment and M&A tracker is based on a hand-picked list of companies that have a clearly articulated business model driving one or more of the technologies or services we outline later in this report. We then used S&P Capital IQ data to establish the investment history for each company.

## Key findings

- Emerging metaverse opportunities in video games, hardware, commercial software and services, e-commerce, advertising and other segments will produce \$52.39 billion in annual revenue by 2027.
- We expect video games will drive 41% of the annual metaverse revenue in our taxonomy by the end of the forecast as publishers and platform holders embrace the potential of persistent digital identities buying virtual goods to use across an array of settings and game modes.
- According to S&P Capital IQ data, metaverse companies have been the target of \$57.41 billion of announced or completed transaction activity in debt capital markets, equity capital markets, rounds of funding, shelf offerings and M&A since 2000. More than 80% of that investment has emerged since the start of 2020.
- More than half (59%) of industrial operational-technology- (OT-) based survey respondents are either already using metaverse-related technology such as AR/VR and digital twins or intend to in the next few years.
- The engineering rigor and financial advantages of designing and managing industrial processes via digital twins and systems are significant drivers for metaverse development in the near term. We believe that the activities and breakthroughs developed for industrial outcomes will influence more fluid and nascent areas such as enterprise collaboration, B2C digital engagement and virtual real estate.

# About the authors



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### Senior Research Analyst

Ian is a Senior Research Analyst for the Internet of Things practice within S&P Global Market Intelligence. He has 30 years of experience in emerging technology as a developer, architect, and consultant through key technology trends. He has 20 years of experience at IBM in cross-industry application development. This included automotive, global sporting events, retail, and telecommunications. Ian was early to the web development space in 1998 and social media in 2004 and was influential in virtual-worlds adoption in 2006-2009. He has spent the past seven years at his own consulting company, where he presented a regular emerging technology feature on a UK Saturday morning children's TV show, built virtual disaster simulators for hospitals, pitched startups to investors, wrote a technology column for a fashion magazine and wrote two sci-fi novels. He was awarded an Honorary Doctorate in Technology from Southampton Solent University in 2018.



## Neil Barbour

### Research Analyst

Neil Barbour is a Research Analyst focusing on video games, connected devices and other emerging metaverse trends. He previously covered the U.S. multichannel industry, and before that worked as a copy editor in print and digital media. Neil has a bachelor's degree in journalism from the Pennsylvania State University.

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