



The metaverse: Helping manufacturers do what matters

Early adopters are there now. Do you have a strategy?

The metaverse: Helping manufacturers do what matters

Make time for the metaverse

Do you even have time for the metaverse?

Avanade's view is that you should make the time. Far from a sci-fi future, the metaverse is the next big tech revolution in manufacturing. It will boost productivity and efficiency, cut costs, enable entirely new manufacturing processes and market approaches, and change how employees work and customers buy.

Momentum is building. Gartner projects that by 2025, at least 40% of manufacturers will use virtual experiences to increase workforce productivity and customer reach, and enhance customer experience. By 2026, 25% of people will spend at least one hour a day in the metaverse and 30% of organizations will have products and services for it.

True, the metaverse may be years away from achieving its full potential. But its enabling technologies are quite real right now. You likely use some of them already, such as immersive technologies, collaboration platforms, IoT and AI. Early adopters of the metaverse are seeing business benefits today. **Why shouldn't you?**

What, exactly, is the metaverse?

There are many definitions of the metaverse out there and those definitions continue to evolve as the concept itself continues to take shape. When we think about the metaverse, we focus on its business value. It may represent an evolution of the Internet, but it's a revolution-in-the-making for manufacturers and businesses generally.

The metaverse doesn't exist solely in cyberspace; it spans physical places and digital spaces, enabling people to collaborate and exchange value through shared interactions and experiences. The metaverse represents a new approach to building and delivering products and services, furthering the shift from web to mobile.

Most importantly, the metaverse is changing the way we explore, understand and relate to data. It's supercharging data visualization and the collaborations based on that data. The metaverse is far more than the attractive animations you can see on websites and in trade show booths. It's about the faster, deeper, business insights that are possible by applying AI to the metaverse's data.

Avanade is helping ABB Turbocharging to ensure that when any of its turbochargers needs specialized service, anywhere in the world, the service engineer has the right skills at the right time in the right place. Using HoloLens 2 headsets, AI and cloud services, ABB now delivers real-time intelligence to its service engineers for accelerated decision-making that helps reduce downtime, speed time to repair, and improve SLA compliance. [Learn more.](#)



Your approach can **determine your success**

How you approach the metaverse has a lot to do with how successful you'll be in gaining business value from it.

Don't sweat the technologies. Yes, a great many technologies will contribute to the metaverse – but not all at once and certainly not now. Trying to integrate too much too soon can only disappoint. Simplify your approach to the metaverse, starting with just incremental additions to your technology portfolio and focusing on key technologies appropriate for your business objective.

Focus on business outcomes. Another reason not to get distracted by technology: it's just a means to an end. Your goal is better business outcomes. Think about what that means to your company in particular. Keep your eye on that ball and you're more likely to win in the metaverse.

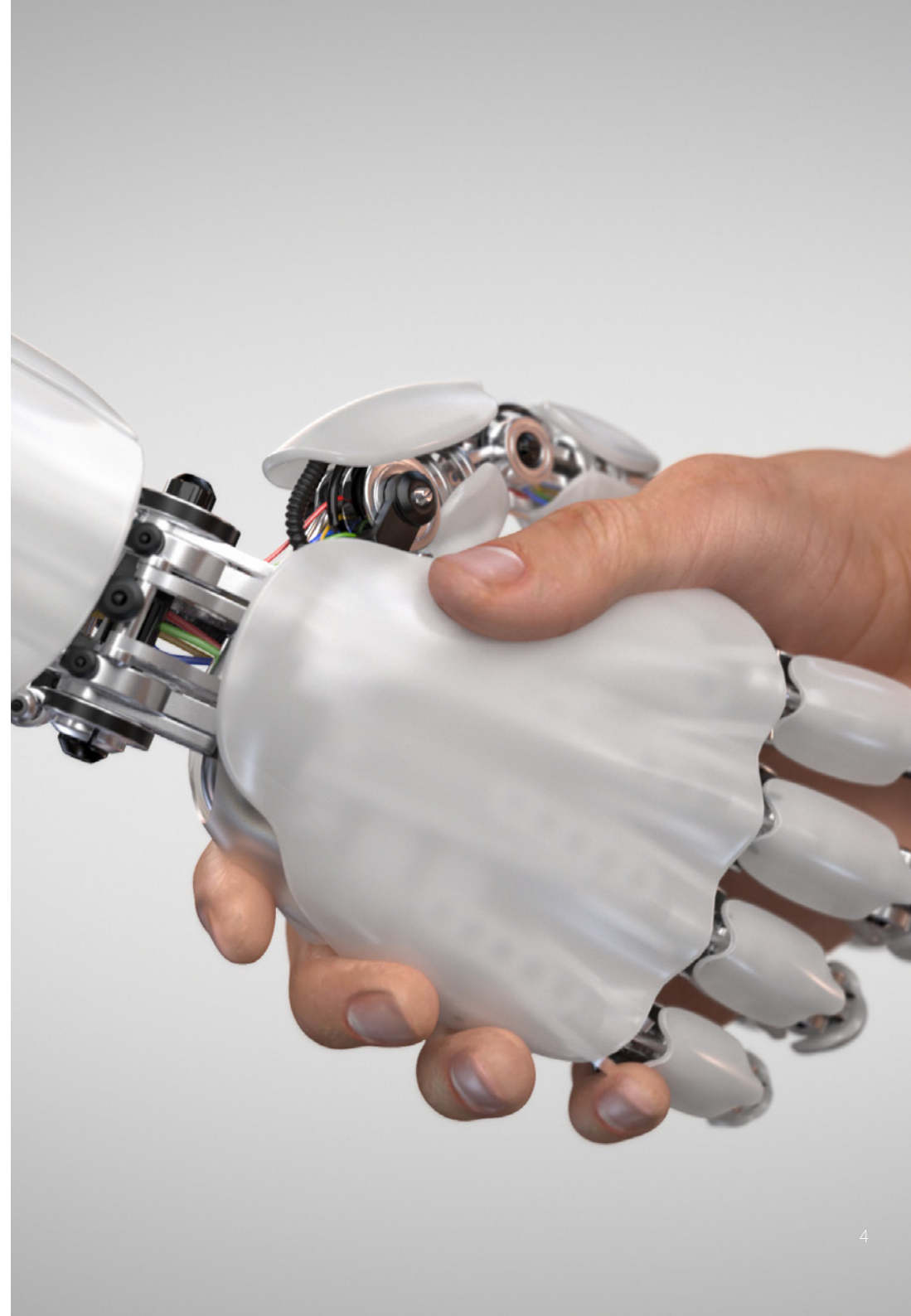
Keep key activities in mind. Some metaverse explorers might get lost among the seemingly limitless options available to them. To avoid that fate, organize your metaverse activities into these key categories:

- Collaborations
- Training, branding and content delivery
- Conducting business

Balance your metaverse POCs and implementations among these categories. It's another way to help ensure optimum business value and ROI.

Top 5 technologies for the metaverse

1. Internet of Things and edge computing
2. Blockchain
3. Next-generation connectivity
4. Digital twins
5. Extended reality



Use the metaverse for connected operations and products

Manufacturing operations continue to become more complex, more technologically sophisticated and more geographically dispersed – making them more challenging to operate, maintain, and optimize. They generate increasing volumes of data – but much of it is ignored or underused.

You can use the metaverse to help change that. Investing now in IoT, edge and digital twin technologies will provide a data foundation that supports agility and ongoing innovation. You'll be able to optimize manufacturing workflows and automated processes. For example, digital twins and IoT data will enable predictive maintenance and remote-assisted support powered by augmented reality.

More than a solution, digital twins are a platform on which you can build solutions to understand the impact on manufacturing if you modify parts specifications, change QA processes, or adopt or drop vendors. The physical factory can't tell you the impact of these changes, but its digital twin can.

Extend the digital twin to include suppliers, partners and distributors. This expanded metaverse can show you how changing supply chain options impact on-time deliveries to your factory and your customers, supply-chain needs, and risk. You can better predict slowdowns, disruptions and prepare for spikes in demand and reroute or make changes accordingly. It should be noted that there needs to be interoperability across internal and external parties to do this, and role-based access/permissions and security considerations necessary to do this in a wider ecosystem.

Extending the digital twin to include your products can enable proactive product design and after-sales maintenance and services that keeps customers happy by keeping products operational and more safe and secure.



By 2025, manufacturers will [lower operational costs by 10%](#) by combining hyper automation technologies enabled by AI and new operational processes, according to Gartner.

Avanade is helping a major steel producer to increase situational awareness of – and insights into – its manufacturing process by representing operational data visually. We're creating models of production lines at one of its plants to build a 3D representation of the steel-making process.

The solution will enable workers to collaborate remotely to solve issues within the plant. For example, they'll be able to see status and operational data embedded and highlighted in a digital twin-based 3D visual app. They'll gain near-real-time insights into operational status.

Use the metaverse for responsible manufacturing

The metaverse offers another important platform on which companies can expand their commitment to manufacturing that responds to environmental, social, and governance (ESG) concerns. For manufacturers, that means using the metaverse to help ensure that their products and processes reflect greater sustainability, data privacy and security for individuals, and diversity and inclusion.

For example, virtual events and training predate the metaverse – but the metaverse makes them more experiential and, thus, more effective. That in turn makes metaverse meetings more popular choices.

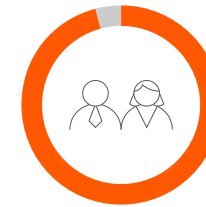
Think of a heavy equipment manufacturer launching a new product. Instead of the energy and resource consumption associated with flying retail dealers from throughout a country, or the world, to a launch event site, the manufacturer can hold its event in the metaverse.

With digital twins of the new product, and extended reality interfaces for the dealers to interact with those twins, every dealer can have a hands-on experience with the product. That's not always possible at on-site events.

Besides providing a better experience with less energy consumption, metaverse events and training also open up opportunities for more people at less cost, supporting diversity and inclusion goals as well.

Just about every generation of new technology makes more data accessible to more people in more ways – and creates new challenges to keep data private and secure. The metaverse is no exception. The rise of smart products gives manufacturers a responsibility to ensure that only authorized users can access them. Think of the need to keep automated steering systems in cars free from outside interference. The use of the metaverse to enable highly customized, even personalized, manufacturing necessitates protections for the personal data used to make those products.

Trust in the metaverse – by both workers and customers – is essential. Cybersecurity technologies, governance and best practices can help achieve that trust. Manufacturers need to invest in these and to “bake” them into their earliest strategies and POCs for the metaverse.



96%

of executives say their organizations are committed to [authenticating the origin of their data](#) and genuine use of AI.

To meet the [VentilatorChallengeUK](#), thousands of companies – many of them competitors – came together at the start of the COVID-19 pandemic to produce more than 13,000 ventilators in 12 weeks, an amount it traditionally would have taken 20 years to produce. The unprecedented program met high ESG standards and rapidly trained workers, using a range of immersive skilling solutions, such as mixed reality training across the consortium. And it did this without the carbon impact of bringing tens of thousands of people to a centralized location.

Avanade was honored to be a key participant in this life-saving endeavor.

Use the metaverse to enable “manufacturing of the future”

As manufacturers think about how to exploit the metaverse, they should keep their thinking broad. With augmented-reality glasses and digital twins, any physical environment can become a digital experience. So companies can use the metaverse to help achieve a “manufacturing of the future” vision that extends across the product lifecycle: from product design and engineering to shop-floor manufacturing, sales, and after-sales service.

Product teams can use the metaverse to improve collaboration, insights, and anticipate customer needs through voice-of-the-customer data and AI-projected service scenarios. With greater agility, they can make on-demand and hyper-customized products a reality (think “lot size: 1”).

With the metaverse, any floor can be the shop floor. Manufacturers can use industrial automation, robotics, digital twins and AR glasses to enable shop floor workers to work safely – in the metaverse – while they operate remote industrial equipment at pressures, temperatures, in locations or with materials that would otherwise be unsafe for them. Kawasaki, Heinz and Boeing are among the manufacturers now using or planning to use Microsoft’s industrial metaverse solutions, centered on HoloLens and Azure, to achieve “manufacturing of the future.”

For customer service agents and technicians, the metaverse offers opportunities to better meet customer needs. Today, manufacturers can use Microsoft Dynamics 365 Guides and HoloLens for remote assistance in 3D, in-person-like experiences. Tomorrow, they’ll analyze customer data to personalize experiences, improve fix rates and service-call resolution, and increase efficiencies while improving customer satisfaction.



98%

[of global executives](#) agree that emerging technologies are enabling their organizations to have a broader and more ambitious vision.

When global candymaker Mars wanted to reduce the amount of “giveaway” extra candy it sometimes put, inadvertently, into packaging, Avanade and Accenture came up with a solution based on a digital twin of the production line. This solution significantly cut both the amount of giveaways and costs.

Use the metaverse to further **worker and customer evolution**

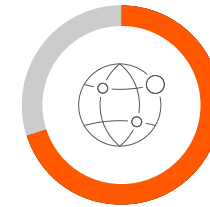
Companies are now exploring what the metaverse means to the two groups of people they interact with the most: their employees and their customers. While customer interaction in the metaverse sometimes gets more sizzle in the news media, we see employee use cases gaining momentum first, because they can demonstrate clear ROI, particularly around the crucial areas of talent attraction, training and retention. Enabling technologies are a combination of HoloLens, digital twins, and the evolving Microsoft Teams collaboration platform.

The metaverse has the potential to shape compelling moments that matter across the employee experience lifecycle, for every type of worker in the manufacturing enterprise: on the factory floor, in a warehouse or a delivery vehicle, in an office or in the field.

From onboarding to learning and career development, collaboration and eventual offboarding, the metaverse can bring fuller, richer employee experiences to the virtual or hybrid environment. Accenture's Nth Floor concept is an example, elevating the onboarding experience in the hybrid era, with tens of thousands of recruits gaining a more immersive first experience of their new jobs.

While customer engagement in the metaverse may take longer to take off, the appeal to better engage with customers across every aspect of the customer experience – pre-sales, sales, and after-sales service – is real.

Already, Tesla customers can go to a virtual showroom to design their cars. Why not also take them to a virtual shop floor to observe their cars being built? How about gathering customers in the metaverse for feedback to inform product design? For the growing number of manufacturers adopting consumer-facing business models, the metaverse is ideal for bringing them and their customers together for hyper-customized or personalized products.



70%
[of Global 2000 companies by 2024 will gain twice as much](#), in terms of meaningful returns, on tech investments that augment employee/customer activities compared with ones that automate individual processes.

Avanade partners with the University of Wales Trinity Saint David to help the latter's engineering students take advantage of the latest technologies. Holographic teaching and learning aids, based on Dynamics 365 Guides, focus on advanced machining skills and equipment in the university's Robotics and Automation Lab. [Learn more.](#)

The right approach to the metaverse is **a pragmatic one**

Tech giants will continue to make huge investments in the metaverse, but most companies need to take a more measured view regarding resources and risk. That doesn't mean the metaverse should be ignored. This moment presents an enormous opportunity.

At Avanade, we're helping our clients become metaverse ready. We're guiding them on a journey that takes advantage of the most significant investments and strategic trends in the enterprise metaverse. Using our expertise in data and experiences and our privileged access to Microsoft, we're helping clients build proofs of concept and pilots that realize the opportunity of the metaverse — for businesses to be and do more, and to find value in all the new ways that we'll relate to places, data and each other.



Whatever your goals and timeline, we can help you get started on your journey to the metaverse

1 hour

Let's chat over lunch or set up a meeting in the metaverse.

1 day

Let's get together with a few of your colleagues and explore the potential of the metaverse for your organizational needs.

1 week

Let's build a metaverse roadmap and strategic plan together.

[Learn how](#) we can help you become metaverse ready

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About Avanade

Avanade is the leading provider of innovative digital, cloud and advisory services, industry solutions and design-led experiences across the Microsoft ecosystem. Every day, our 58,000 professionals in 26 countries make a genuine human impact for our clients, their employees and their customers. Avanade was founded in 2000 by Accenture LLP and Microsoft Corporation. Learn more at www.avanade.com.

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