



It's time for value

How to build your business case
for smart digital manufacturing

Do what matters

Bring speed to operational impact. Starting now.

In today's climate, you need digital solutions that make a difference to your daily operations in the here and now. It's time to invest in transforming your business. You need to prioritize secure digital technology that helps reduce errors, costs, and waste from day one. And focus on the productivity challenges that matter now, so you can get to value sooner.



That's why **72%**
of manufacturers are
advancing their efforts
to build smart factories,¹
using intelligent,
connected machinery to
monitor, automate and
streamline processes.

¹ Microsoft. IoT Signals: Manufacturing Spotlight. Available from: <https://info.microsoft.com/ww-landing-iot-signals-manufacturing-spotlight.html?cid=en-us>

Digital twin solutions drive rapid ROI

When investing in your own smart factory, nothing is more important than time to value – accelerating the ROI on your digital solutions, with **manufacturing impact you can see in weeks, not years.**

Digital twin solutions offer a whole new perspective on how to deliver the fast, value-driven results you're looking for. Using digital twin solutions, manufacturers can test and experiment across virtual scenarios to **become more effective in every aspect of their business.** From reducing unplanned downtime to improving product quality and supply chain management, a significant impact can be seen right away.

Make your business case

With Avanade's expertise by your side, you can use digital twin solutions to fast-track your smart manufacturing transformation, achieving better business outcomes and operational efficiency.

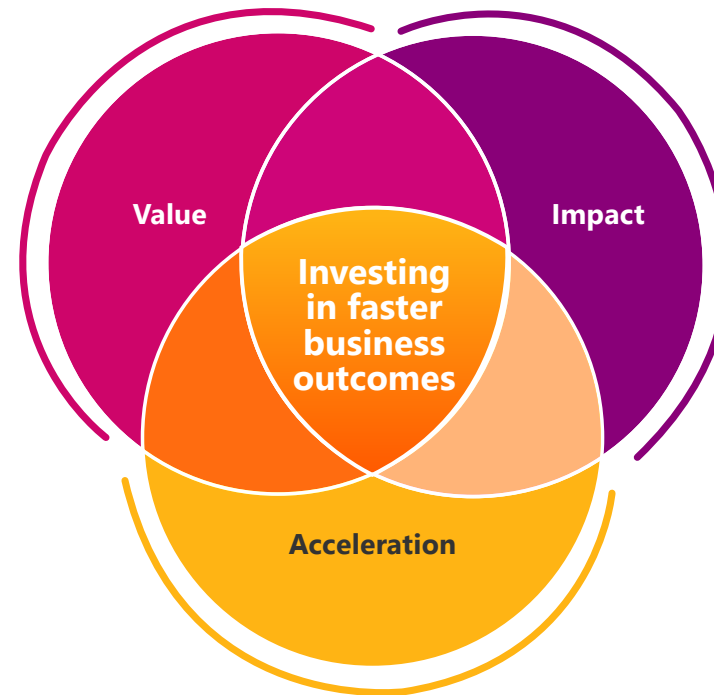
This guide will help you make your internal business case for **Intelligent Digital Twin solutions from Avanade**, so you can unlock value sooner and get straight to the operational impact you need to see.

We've written the rest of this guide from your point of view so it's ready for you to share with your CIO.



Investing in faster business outcomes

Unpredictability is a constant reality for us right now, but we can get to a steady state sooner. Digital twin solutions will help us add value where we need it and help us conserve resources where we can afford to. Using digital twin solutions to guide our smart manufacturing transformation, we can optimize production through real-time visibility and monitoring, and improve our energy and resource efficiency. All enabling us to implement changes at speed and positively impact our bottom line.



Value

- Reduce errors, costs and waste to optimize production with real-time visibility
- Discover improvements before making any physical changes
- Bring transparency to daily processes through real-time asset health and efficiency monitoring
- Build a secure foundation that addresses our output, supply chain, and operational challenges
- **See real results within 12 weeks**

Acceleration

- Focus on the challenges that matter right now
- See exactly where efficiencies can be found
- Benefit from immersive Microsoft technologies (data and AI)
- Stay on track with a roadmap and strategic plan, driven by Avanade's Microsoft technology and industry expertise
- **Drive sustainable efficiencies faster**

Impact

- Make a difference to our bottom-line right now
- Meet new customer expectations for customization
- Make real progress as a responsible manufacturer
- Build on our digital foundation for future scalability
- **Boost ROI and deliver what matters**

Accelerate time to value

Digital twin solutions can help us reduce inefficiencies and increase value where we need it most. Using the latest digital twin and AI technologies to help us accelerate transformation, we can focus on production optimization, energy efficiency and quality improvement at scale. Then, we can take these findings to the factory floor, rolling them out across production lines and plants to turn our immediate savings into ongoing value and ROI.



Outcomes in numbers

Adding value where it will have the most impact

Accenture client research shows that digital twin solutions will add value in the areas that matter most to our business.

- **3–5%**
increase in yield and quality improvement
- **10–15%**
increase in production volume
- **10–15%**
improvement in asset utilization
- **10–20%**
reduction in operating costs

Reducing waste and driving sustainability

Digital twin solutions can also help us to tackle rising energy costs and meet new regulations head on. By bringing transparency to our processes, we can cut down waste and reduce energy consumption.

- **10–20%**
lower greenhouse gas emissions¹
- **10–20%**
reduction in material waste¹

Accelerating ROI in the real world

Based on previous clients' successes with Avanade's Intelligent Digital Twin solutions, we can expect to see significant impact on our own revenue.

- One equipment manufacturer achieved **\$200 million per year** in increased profits by growing its profit margins
- One petrochemical producer boosted its revenue by **\$100 million per year** by increasing its plant output by 2%
- One large, global equipment manufacturer saved **\$100,000 per month** by achieving 98% accuracy in predicting machine failure

¹Accenture Client Research, 2020

Seeing real world results

Avanade is Microsoft's Manufacturing Partner of the Year, with expertise in technology consulting and innovation, it can help us accelerate the delivery of our digital twin solution. It has a strong foundation in our sector with over 1,000 manufacturing clients worldwide. Here's how the company has helped four of those clients gain real world value with smart digital manufacturing.

Automotive

Saving costs with AI quality inspection



Business situation

As part of a wider project, the client wanted to develop an AI platform that would improve quality control and automate manual inspection work on its vehicles.

Solution

Avanade developed an AI Quality platform that used picture, video, laser and acoustics to carry out mass visual inspections on vehicles, as an alternative to spot test methods. Avanade could train the AI for new use cases in a very short timeframe, for example, teaching it to check the engine is running correctly based on the acoustics.

Results

The new solution minimized the amount of rework needed on vehicles at the final stage of production and is expected to deliver multi-million euro savings for the company.

Utilities

Improving operations with IoT and Edge



Business situation

The client wanted to deploy AI in its production line to optimize day-to-day activities, so that its employees could focus on more strategic activities.

Solution

Part of the solution involved using Microsoft Edge to gather data from the company's sorting belts and monitor them in real time. This data was then used to train new algorithms and extract insights to make improvements to operations.

Results

Now the company can support its workers with AI and automation to aid decision making, reduce errors and deliver better outcomes for the business.



Seeing real world results

Food Manufacturing

Ensuring consistency with IoT and digital models



Business situation

Due to a drift in the accuracy of its weighing equipment, the client was giving away too much of its candy product in each package.

Solution

During a 12-week pilot, Avanade designed and retrofitted IoT hardware to existing production equipment so the manufacturer could stream data in real-time. This real-time, as well as historical, data was fed into a digital twin of the production line to predict multiple issues contributing to the production drift.

Results

Using insight from the digital twin study, the company could address issues before they impacted the accuracy of the weighing equipment. The company expects to achieve significant savings once the solution is scaled.

Consumer Goods

Improving part quality with digital twin visualization



Business situation

The client was dealing with expensive defects in plastic parts that it produced through molding.

Solution

For one element of this project, Avanade used 3D digital twin visualization of the plastic injection molding machines to gain new insights. Based on these findings, Avanade deployed a visibility and monitoring solution for the plastic injection molding process.

Results

The visibility and monitoring solution helped to reduce part failure and improve product quality and yield. It is projected to save the company between \$15–20 million by 2025.



Better business outcomes in just 12–15 weeks

Ongoing support and scale

The MVP is in production, but Avanade will continue to support us moving onward, starting with additional use cases on the same line, then on new lines, and then expanding into additional factories. End-user support and solution enhancements continue, too.

Developing a value-based MVP

The project will follow four steps to take us from initial assessment to a proven, value based MVP in just 12 to 15 weeks.

Step 1

Explore, inspire and discover

Avanade will help us to understand our value opportunities, define use cases, identify readiness gaps, and design solution architecture.

2–3 weeks

Step 2

Acquire and connect

MVP creation starts here, with the installation of the solution's digital foundation, including digital twin, sensors, industrial gateways, data platforms and more.

4–5 weeks

Step 3

Analytics and insights

This step includes development of the digital twin and analytics model, testing and validation of analytical insights, and creation of dashboards and visualization. It results in a machine learning model that produces recommendations to address the pilot solution's use case.

4–5 weeks

Step 4

Deploy and train

Avanade provides user training and support to enable plant users to adopt the solution, and can help put it into production use.

2 weeks

Better business outcomes in just 12–15 weeks

Project challenges

Every project has its challenges. Whether it's to do with structural limitations, data visibility or access to stakeholders – thinking about these challenges in advance of our project helps to ensure things run smoothly.

- Do we have industrial constraints such as cost, heat, size, safety and security?
- Will legacy technology make data collection more complex and limit our access to real-time data?
- Do contract manufacturers reduce our visibility over certain production elements?
- Are there only a few knowledge holders that understand our production process?
- Will key stakeholders be available to participate and approve essential project milestones?

Any questions?

What can we gain from a digital twin project?

Digital twins can be used to replicate, simulate, test, alter or even destroy to uncover hidden insights that the physical twin could never reveal and at far less cost. These insights can then be applied in the real world to reduce waste, prevent downtime, increase yield or optimize energy consumption.

How long will the project take?

Avanade can design and deliver a value-based MVP with Intelligent Digital Twin solutions in as little as 12 weeks to get us direct to the results we need.

How much value can we expect from a digital twin project?

One equipment manufacturer saw a \$200 million per year increase in profits following its digital twin project. And on average, manufacturers can expect a 10–15% increase in production volume after using a digital twin solution.

How can digital twins optimize our productivity and efficiency?

Digital twins enable workers with accurate and real-time data to reduce errors, enforce continuous production and improve safety, which ultimately enhances through-put and yield.

How can Avanade help us fulfill today's fragmented market demand?

Avanade's solutions aim to reduce the burden of mass customization and personalization that cause high operating costs. It can also update, and in some cases re-invent, legacy operational infrastructures designed for high-volume runners.

How can smart manufacturing help us become more responsible and sustainable?

Avanade's smart manufacturing solutions are designed to address changing market priorities driven by consumer preferences for sustainable goods and services. Avanade's ESG-focused offers enable us to reduce waste and meet legally mandated emissions requirements, while managing rising energy costs.

Can we use smart manufacturing to synchronize disconnected systems?

Avanade looks to connect standalone IT and OT systems and integrate workflows to address functional silos and irregular processes. Avanade aims to provide solutions that improve visibility with better access to plant KPIs and unit performance dashboards.

Why should we do this now?

We know times are tough for our industry, and we know things won't be easing up for a while. Margins are tighter, costs are higher, supply chains less certain – that's why we need to be smarter about how we use digital technologies. We need to steady our business today, without compromising our ability to innovate through an uncertain future. That means moving quickly to drive measurable savings now, rather than planning too far out. Another benefit of Avanade is that we can do all of this with a secure digital foundation that delivers right now – and, when we're ready to progress, build on it for ongoing scalability and value.

Delivering real results, right away

Avanade makes operational transformation realistic for today's fragmented market, so we can speed up and scale daily efficiencies for better business outcomes. As Avanade designs and delivers a value-based MVP with Intelligent Digital Twin solutions in weeks, we can expect fast, revenue-driving results – from exploring immediate ROI opportunities to creating a ripple-effect across use cases. As Microsoft Manufacturing Partner of the Year, Avanade's industry expertise is applied to the latest Microsoft technologies, so our business gains the proven, secure and value-based impact we want to see.

Avanade in numbers



Microsoft Alliance
Partner of the Year
for **17 years**



2022 Microsoft
Manufacturing
Partner of the Year
and finalist for
Automotive Partner
of the Year



3,500+
manufacturing
industry delivery
professionals



1,000+
manufacturing
clients worldwide

Let's discover smart manufacturing, tailored to our business

We can learn exactly how digital twins and smart manufacturing will benefit our business by signing up for a 1:1 Art of the Possible Workshop with Avanade. We can choose the format that best suits our availability and requirements. We can take...

One hour to talk to Avanade about our challenges.

One day to meet with Avanade as a team and discuss our business in further detail.

One week to identify ways to drive maximum business value, determine an MVP, choose a relevant Avanade solution, conduct factory and operational assessments, and build a roadmap and strategic plan.

YES, we want a 1:1 workshop



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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 60,000 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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