



Do what matters

# Avanade Factory Agents and Analytics

## On Manufacturing Data Solutions

Enable factory workers with ad-hoc insights, recommendations and automation capabilities, unlocked by OT-IT data insights



# Skill shortage and AI driven transformation are major challenge for Manufacturer

44%

of industrial companies see skill shortage as their main challenge in 2025

19.6M

"Babyboomer" will retire until 2036, while only 12.5M younger employees will follow

85%

of manufacturers believe they risk losing competitive edge by not implementing AI quickly enough

74%

of manufacturers say that poor data quality stands in their way of accelerating value with AI

## Sources:

IIoT Study 2025 from CIO, CSO and Computerwoche;  
Institute of the German Economy; 'The Supply Chain Xchange'  
Accenture, rethinking the course of manufacturing's future, 2025



# AI in Manufacturing can create massive impact for your manufacturing business



**5-10%** increase in production volumes



**3-5%** increase in production quality



**10-20%** reduction in operational costs



**20-25%** reduction in high-risk events

Statistics based on Accenture experience

With near real-time intelligence from a combination of IT and OT systems

# BUT: Data silos and missing contextualization of data hinder scalable AI adoption in manufacturing

## Key OT-IT data challenges

### Extensive variability of data across many data silos

#### Factory systems



Maintenance CMMS MES Quality Historian

#### Automation and process control systems



Sensors PLCs DCS SCADA OPC

#### Enterprise systems



PLM MDM ERP SCM

**Highly fractured and spread data estate** and **siloed IT and OT data** across environments

**Unknown meaning** (contextualization) of data complicates use for AI, Agents and analytics

Difficulty to define unified and **standardized data model across factories**

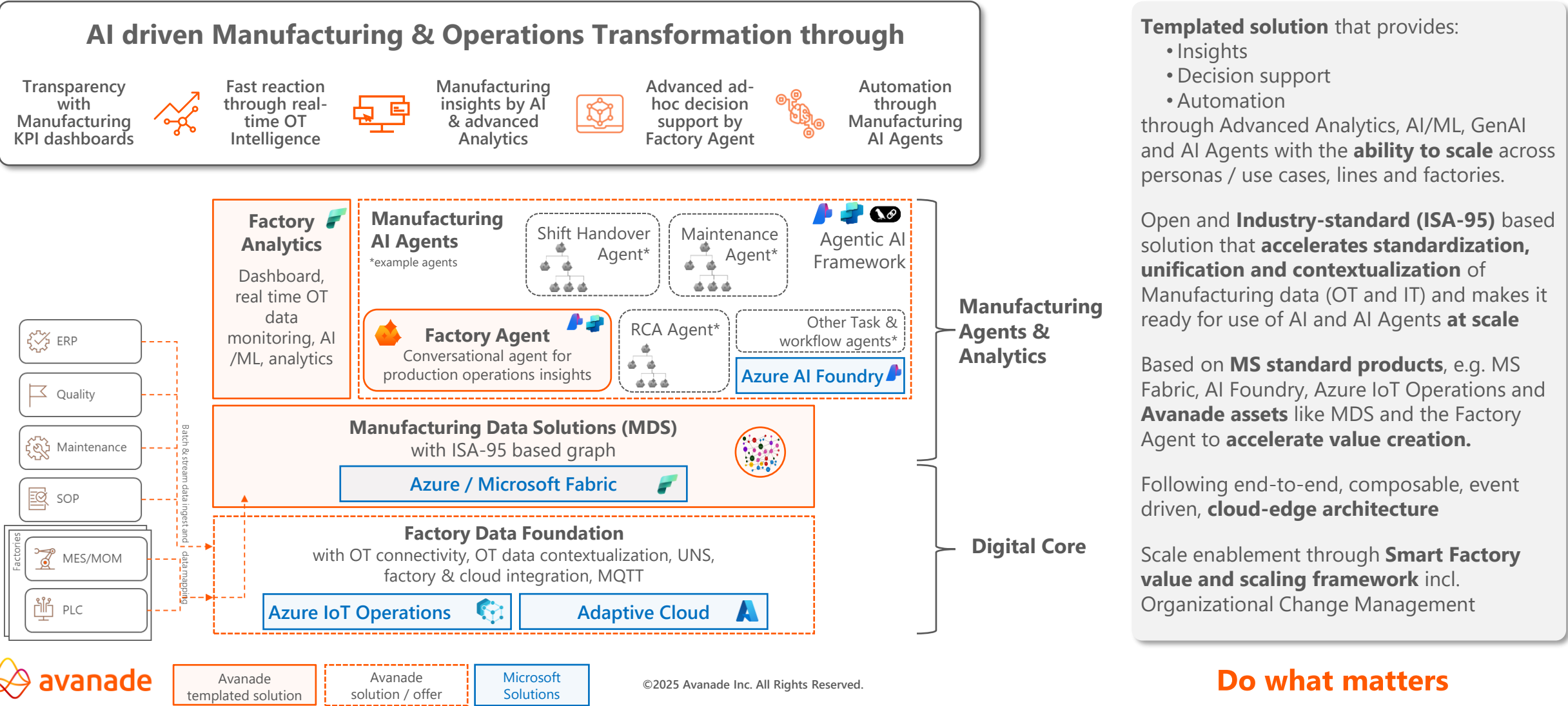
**High frequency** real-time data creates challenges (from 'data in rest' to 'data in motion')

**Inability to scale quickly** results in lengthy time to value

**Creating a central data model and data contextualization use case by use case can work around the challenges. But it's slow, expensive, and doesn't scale.**

# Avanade solutions for AI driven Manufacturing Transformation

End-to-end solution that helps to build the digital core and creates intelligence & value with AI agents



# Our proven accelerated approach to ensure fast value creation and long-term scale and transformation



## Think big Strategy, vision, roadmap

- North Star vision
- Full Potential Plan
- Value Case and Roadmap
- Select use cases (scalable)
- Target Technical Architecture
- Maturity and Fit-Gap Assessment
- Program structure & resources

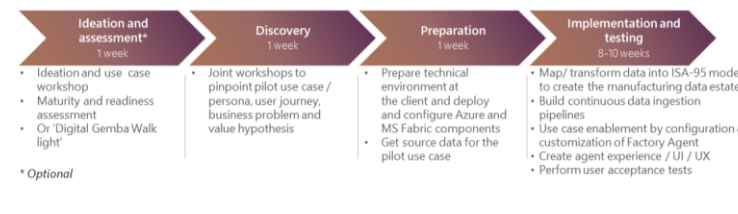
### Long term Vision



## Start small MVP, Scale potential

- MVP: Core use cases and technical architecture implemented on lead-line(s) based on **Avanade Factory Agents & Analytics solution**
- Value demonstrated through the MVP and new ways of working
- Unified manufacturing data estate started
- Extend initial use case and prepare for scale
- Package use cases, technical architecture
- Scaling resources mobilization

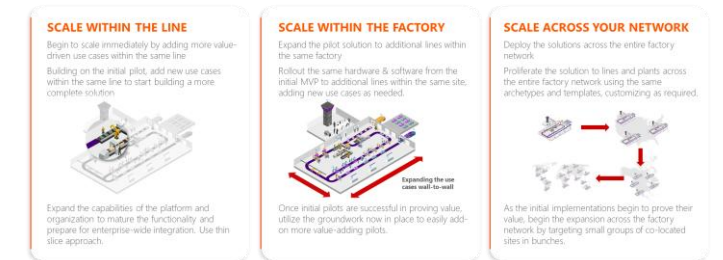
### Start "Lighting Up" one persona at one site / line & focus on AI Agent / analytics that can be scaled



## Scale fast Agile value realization

- Mobilize and scale program resources
- Establish a scaling organization, structure and governance (incl. internal and ecosystem partners)
- Capability development program
- Reporting & Value tracking
- Best practice sharing
- Accelerate value realization

### Scaling approach: three-pronged approach post-pilot



# Start your journey with Avanade Factory Agents & Analytics MVP

Solving the Manufacturing Data challenge to enable data for AI and AI Agents and start reinventing the way work gets done in factories with Factory Agents in **only 8-10 weeks**

## Why?

### Competitive production

Improve production performance and efficiency and empower shopfloor talent

#### Fast time to Value

Create Factory Agents & Analytics MVP with client specific use case in **8-10 weeks**

#### Ready to Scale

MVP includes an ISA-95 graph based data estate that allows to scale to further use cases across production operations

## What?

### Factory Agents & Analytics MVP

Enable factory workers with insights & AI decision support unlocked by OT & IT data

## How?

### Trusted, unified manufacturing

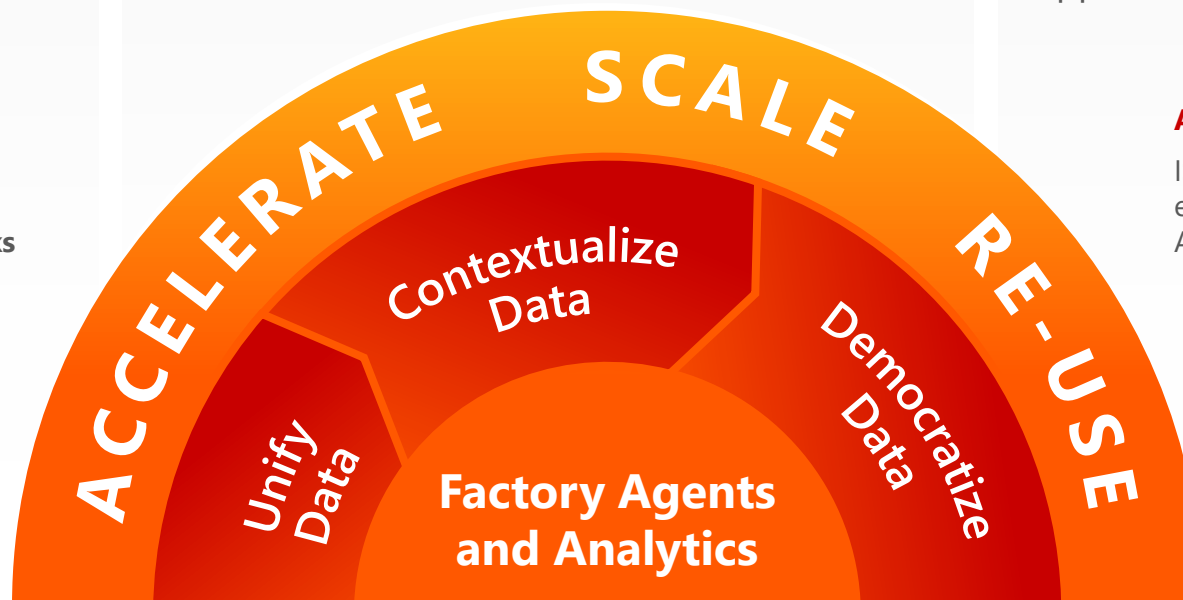
**data estate** based on ISA-95 Industry and pre-packaged templated implementation approach for Factory Agent and Analytics

#### AI ready and enabled

ISA-95 graph based data estate enables AI/ML, AI Agents, Factory Analytics and Dashboarding at scale

#### First steps to create a Cognitive Digital Brain

Creating foundation & first agents for AI driven Manufacturing Transformation by AI enabled production operations and shopfloor workers



# Timeline of the Factory Agents & Analytics MVP project

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
<b>Discovery</b>		<b>Data mapping</b>	<b>Deployment &amp; Customization</b>				<b>Connect &amp; fine tune</b>		<b>Testing / UAT</b>
Joint workshops to pinpoint pilot use case / persona details: <ul style="list-style-type: none"><li>• Business problem and value hypothesis</li><li>• User/operator journey and behavior</li><li>• Relevant questions to be asked</li><li>• Confirm necessary data and source systems</li><li>• Scoping Phase 1 and phase 2</li></ul>									
<b>Preparation</b>		Prepare data mapping into ISA-95 model of MDS (FDD)  Prepare instructions and aliases	Implement data transformation and build pipelines into ISA-95 graph <ul style="list-style-type: none"><li>• Implement instructions and aliases and configuration and customization</li><li>• Deploy suitable User Interface (Standard solution e.g. Copilot Studio based)</li></ul>				Connect source systems and build continuous data ingestion pipelines <ul style="list-style-type: none"><li>• Initial historical data ingestion</li><li>• Fine tune instructions and customizations for Factory Agent specific for client use case / Personas</li><li>• Fine tune UI and Orchestration for functions like rephrase, additional document search agent, etc</li></ul>		Testing <ul style="list-style-type: none"><li>• Testing</li><li>• User acceptance tests</li><li>• Evaluation and planning of scaling, enhancements and next use cases</li></ul>
Prepare Access to client Azure environments and to source systems  Prepare technical components on client tenant: <ul style="list-style-type: none"><li>• Microsoft Fabric configuration</li><li>• Deployment of MDS at client Azure tenant and Fabric workspace</li><li>• MDS Configuration</li></ul>									



# Project success with Avanade Factory Agents

## Use case: **Machine operator support**



**SCHAEFFLER**

**Persona:** Machine Operators in a factory

- Simplify the retrieval of condition-based machinery data on the shop floor
- Provide contextualized analysis giving insights on machinery performance and the effects of changes on the schedule.

## Use case: **Connected valve operations**



**Persona:** Valve analyst

- Insights into performance and telemetry details of valves in operations
- Analysis of failures, anomalies and different configurations of valves and their relationship with performances and operational KPIs

## Use case: **Production loss reduction by digital root cause analysis**



**BRIDGESTONE**

**Personas:** Maintenance Supervisor, Manufacturing Engineering in a factory

- Identify the cause of rate loss (decrease in production speed or ability of equipment to operate due to equipment malfunctions, suboptimal equipment set-up, mechanical wear and tear, or inefficient production processes) to boost OEE (Overall Equipment Effectiveness) and yields

## Use case: **Quality – reduction of production non-conformities**



**Persona:** Reclamation dept., Quality managers, Service Manager

- Analyzing for anomalies during production / installation for claimed product, what quality checks were done, and if there are any similar claims
- Validate subsequent implications and inform stakeholders pro-actively
- If repair /replacement needed, check on availability of material & personnel

## Use case: **Continuous Improvement Engineering Acceleration**



**Personas:** CI Engineers, Manufacturing Engineer,

- Perform trouble shooting for Continuous Improvement
- Accelerate the process to get information about the manufacturing production performances and KPIs from different sources to help the CI Engineering team to identify root cause and take corrective actions.

## Use case: **Shift reporting – reduce production waste**



**Persona:** Waste Manager in a factory

- Summarize production output and issues from the last shift into an easy-to-use report
- Highlight waste reduction and quality intervention and improvement possibilities



# Get ahead with 2x2x2 approach for Factory Agents & Analytics

## Learn | Explore | Test

Work together with Avanade SMEs to understand and realize the business value of Manufacturing Data Solutions (MDS) & Factory Agents, reinventing the way work gets done in your factories.

Avanade will join your team on-site (or remote) to envision how Factory Agents & Analytics will enhance the way you operate. With our MVP approach – we deploy the solution on your environment with your data and use case.

You will quickly experience and prove the business value for your plant Operation, and we can prepare your Roadmap together.

We'll dive into scaling factors (from Technical architecture to People) to prepare value creation at scale through AI driven Manufacturing Transformation.

### Potential Roles & Personas to focus on:

Plant Manager, Shift Manager, Line Operator, Maintenance Manager, Process Engineer, Quality Manager, Waste Manager...

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### 2 Hours Learn & Discuss

Introduction and demo of Avanade Factory Agents & Analytics, highlighting out of the box capabilities, extendibility and how it supports scaling & acceleration of the AI Journey in Production Operations. Identify client questions and brainstorm scenarios.

2

### 2 Days 'Digital Gemba Walk light'

Workshop for joint view of situation in the client's factory, major challenges & improvement areas. Identification and collection of use Cases - How to improve your business with data and AI (Agents)

### Quick Readiness Assessment

Assessment to review system and data readiness, as well as data mapping and contextualization needs for onboarding. If applicable, define connectivity needs. Create an architecture overview, including MDS & Factory Agents

3

### Implementation of Pilot / MVP (8-10 weeks)

Get Manufacturing Data Solutions & Factory Agent deployed on your tenant, implemented in your environment, preferably with continuous data access. Test the solutions against your scenarios / use cases, prove the value and jointly generate a roadmap and scaling scenario and business case

# Why choose Avanade for Microsoft?



1,000+ manufacturing clients worldwide  
50% of the world's largest manufacturers are our clients  
3,500 manufacturing-focused professionals



**Partnership:**  
Avanade is a joint venture between Accenture and Microsoft with over 25 years of history



**Industry scale:**  
We bring industry depth and breadth to differentiate your transformation journey



**Scale, capability and compatibility:**  
We drive and deliver value creation through the Microsoft ecosystem



# Let's get started

The journey begins with a conversation. Connect with us to schedule a discussion of your unique situation. Together, we can identify use cases valuable to your firm, and chart a course forward to value and increased security for your organization.

To get started, contact:

**[Factory\\_Agents@avanade.com](mailto:Factory_Agents@avanade.com)**



