

MES & Edge Data Integration on Azure

Expertise in Manufacturing Vertical

Digital Innovation Partner



4400+

Global Team Members

1500+

Projects Delivered

25+

IP Accelerators

170+

Clients (Long-term Relationships)



INDUSTRY CERTIFIED

ISO

9001:2015

ISO

27001:2013

ISO

27701:2019

CMMI

V2.0 Level 3

PCI DSS

Compliant

HIPAA

Compliant

Backed by Capital Square Partners, TA Associates, True North and CPPI

US-headquartered Tech Services firm with 100% focus on Innovation & Product Engineering

HOW WE WORK?

Data at Heart

Accion Labs reimagines the possibilities for digital transformation from innovation to growth

Digital in Thinking

Scalability, manageability, robustness, and efficiency are always our top priorities

Innovation in Approach

Everything is planned to minute detail, ensuring high-quality deliveries to clients every time

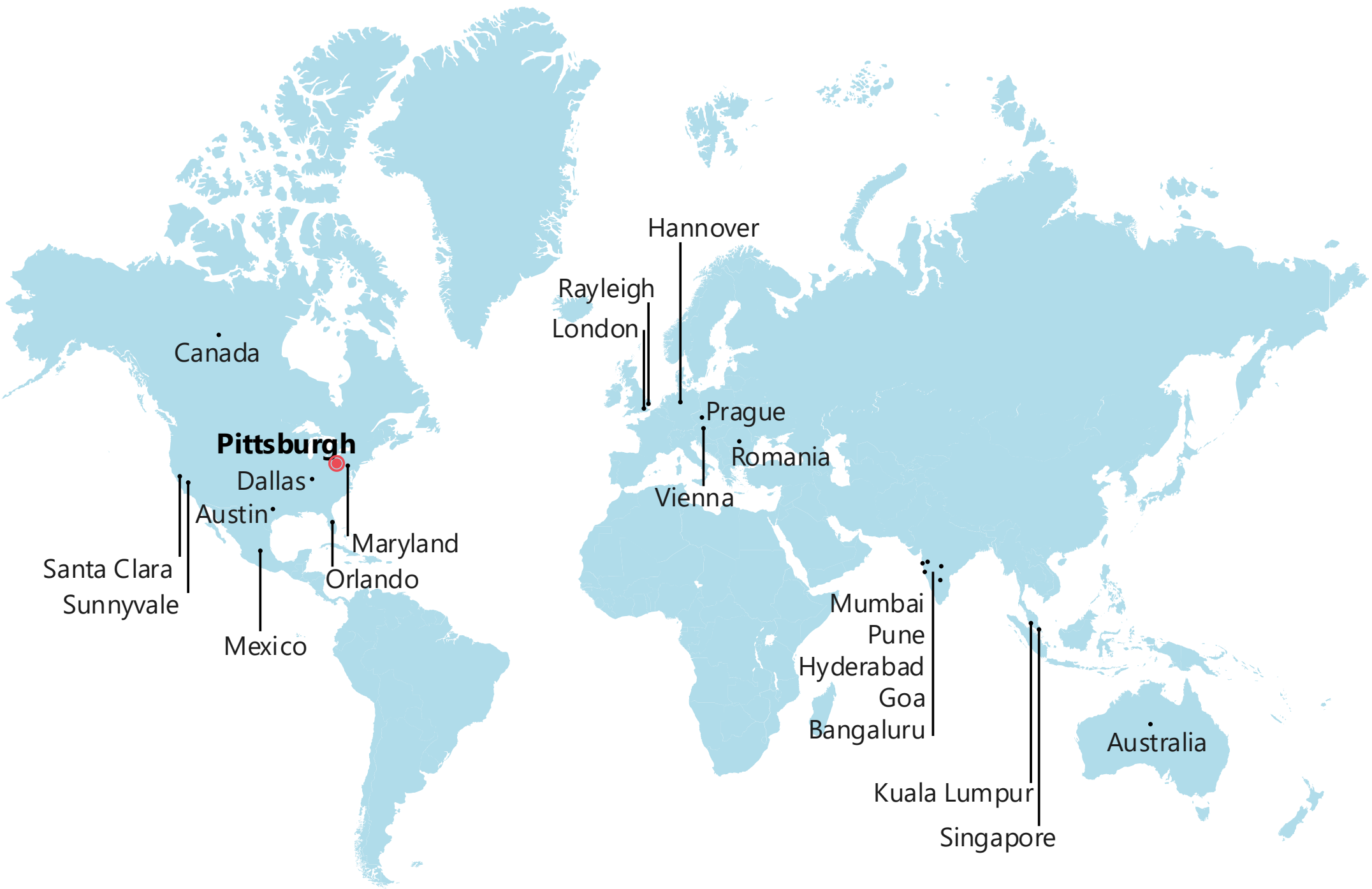
Fastest Growing Tech Services Firm for 5 years in a row. Organic Growth & 9 Capability-centered acquisitions

Emerging Tech first approach - AI/GenAI Applications, investments in IP, Tooling and Innovation

Culture of Outcome, Transparency, Work-life Balance, Innovation & Lifelong Learning

Hands-on Management with Entrepreneurial, Engaged and Value-based Leadership Style

Global Presence and Business Overview



4400+

Global Team Members

23+

Global Delivery Locations

34+

Proprietary IPs Developed

41+

Centers of Excellence Driving Innovation

50+

GenAI Implementation Delivered

Microsoft Practice at Accion Labs



5

Solution Partner Designations

40%

YOY ACR Growth

15+

Marketplace Offers

800+

Microsoft Certified Professionals



Featured Partner for Microsoft Fabric



Access to Microsoft Funding Programs



Now available on
Microsoft Azure
MARKET PLACE





Advanced Specializations

1. AI Platform on Microsoft Azure

2. AI Apps on Microsoft Azure

3. Analytics on Azure

4. Agentic DevOps with Azure GitHub

5. Data Warehouse Migration

6. Infra and Database Migration

7. Kubernetes on Azure

8. Migrate Enterprise Applications

Infrastructure

Azure Landing Zones & Migration

Azure VMware Solution (AVS)

Agentic AI based Modernization

Azure Infrastructure, Network & Security + AKS

Industry workloads on Azure

Data & AI

Microsoft Fabric (OneLake, Lakehouse, Data Engg., Data Factory)

Power BI, Semantic Models

Azure Machine Learning & Azure AI Studio

Microsoft Purview, Fabric Governance

Data Governance

Industry Analytics with Azure Databricks

Business Applications

Dynamics 365 (Sales, Finance, Supply Chain, Customer Service)

Power Apps (Low-code App Development)

Power Automate (Workflow & Process Automation)

Power Platform ALM & DevOps

Digital & App Innovation

Azure AI Foundry & Copilot Studio

Microsoft Copilot (M365, Dynamics)

Azure OpenAI-powered AI assistants

Intelligent Automation & RPA

Industry solutions integrated with copilot



Accion's Manufacturing Expertise

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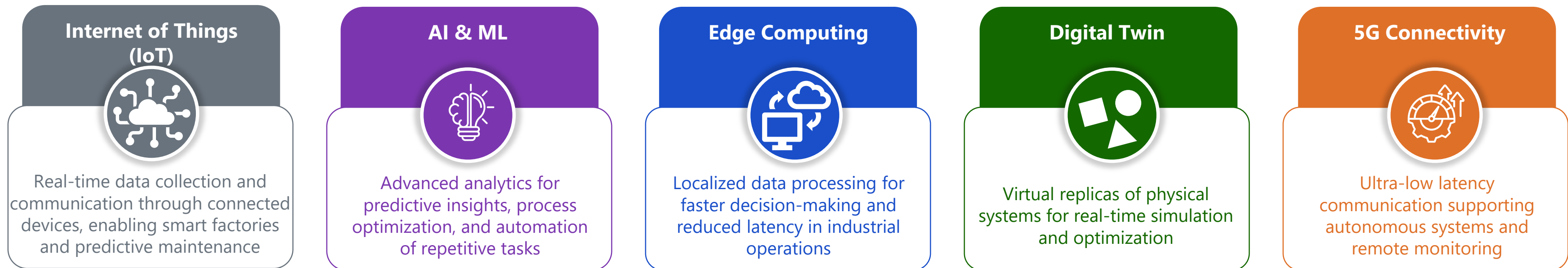
What is Manufacturing 4.0

Manufacturing 4.0 is the application of Industry 4.0 principles specifically within the manufacturing sector, leveraging technologies such as **IoT, AI, machine learning**, and **automation** to create smart, interconnected production systems. It integrates data and feedback loops across supply chains to enhance **efficiency, agility**, and **customization**.

Central to Manufacturing 4.0 are **smart factories**, where machines, devices, and systems collect and analyze data in real time, enabling **predictive maintenance, process optimization**, and **autonomous decision-making**.

This approach allows manufacturers to adapt quickly to market demands, improve product quality, and proactively address potential issues while minimizing waste and downtime.

Manufacturing 4.0 in 2026



Transforming Manufacturing through AI & Innovation Powered by Microsoft Azure

Smart Factory Use Cases

- Automate process and transform factory operations with real-time data access and AI agents
- MES Modernization with connected factory labs
- Empower sales, service, and support teams through AI knowledge assistants
- Securely integrate OT and IT data to inform decision making
- Improve operation visibility using an AI assistant to the factory floor, providing access to data through a natural language interface

Our Offerings

Manufacturing Unified Data Platform Accelerator

An end-to-end, unified data platform that brings together all the data and analytics tools that organizations need using Microsoft Fabric

Agentic AI Automation Framework

Context-aware Agentic AI system that automate business processes, handle exceptions, and coordinate across enterprise functions

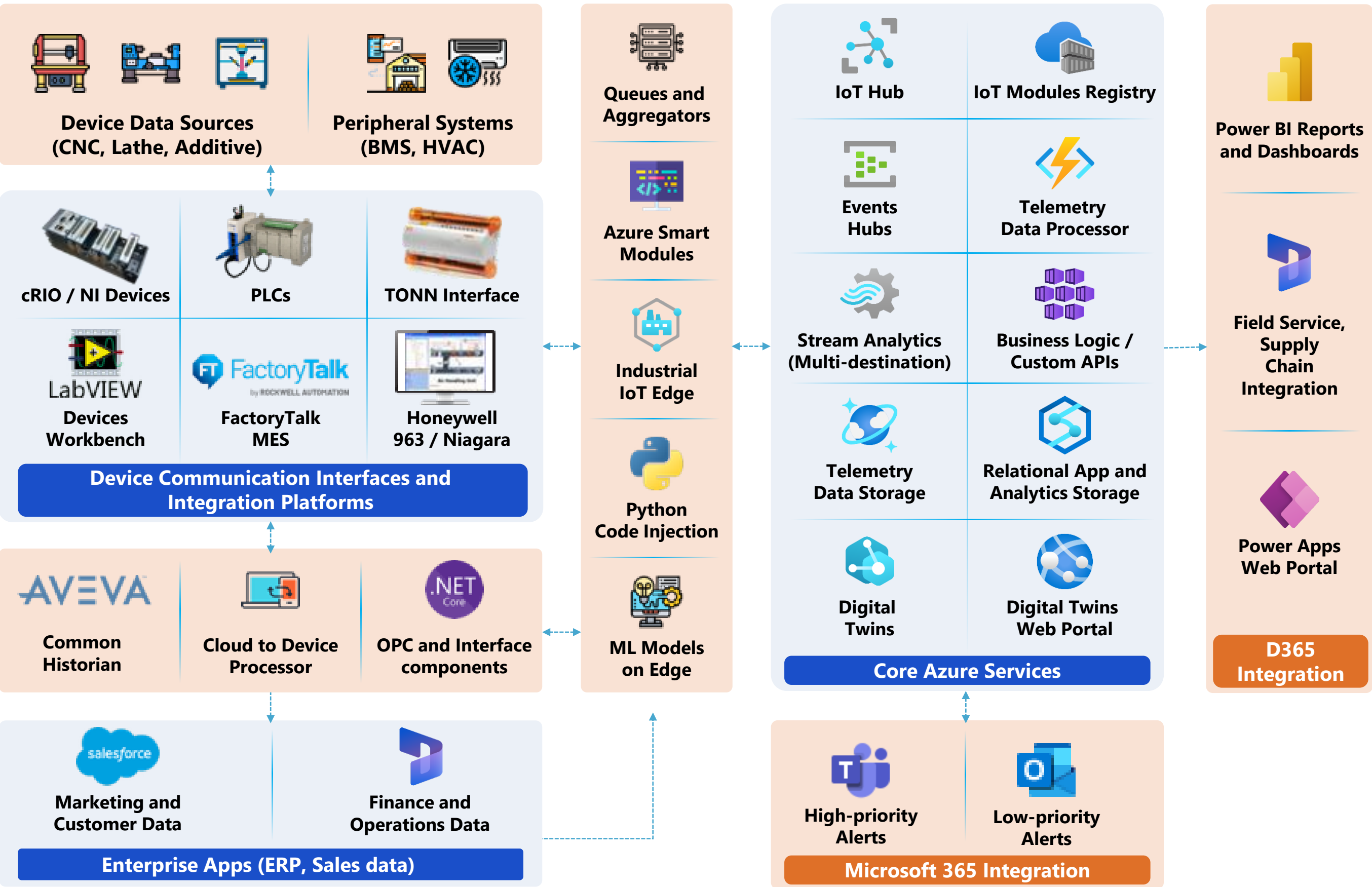
Knowledge Assistant Copilot Accelerator

Analytics AI assistant that integrates and structures knowledge sources with semantic tagging and real-time access APIs

Azure IoT Accelerator

Securely integrate OT & IT data at scale with Azure IoT blueprint that ingest factory data, aggregate it in a unified platform

Industry 4.0 and Accion Labs Expertise



Industrial IoT

Deep experience in pulling telemetry data from devices made by National Instruments, Rockwell Automation (Allen Bradley), peripheral BMS Systems (Honeywell) and others.

Integration with Aveva Historians (OSI PI, InTouch HMI), FactoryTalk MES.

Library of modules to integrate with OPC and manage Digital Twins in Cloud.

Systems Integration

Deep integration with Hardware manufacturer provided platforms, Dynamics 365, Microsoft 365, SaaS Platforms / Apps.

Cloud Computing

Built natively on Azure and integrated with Microsoft 365 and Dynamics 365. Natively storing data in Azure on Cosmos DB, BLOB Storage and Azure Synapse Analytics at core.

Big Data and Analytics

Performing Analytics at scale using Azure Synapse Analytics, Notebooks in Azure Synapse and custom code for known KPIs using Python hosted on Azure Kubernetes Service. Report model data exposed to Power BI through Azure Synapse Analytics.

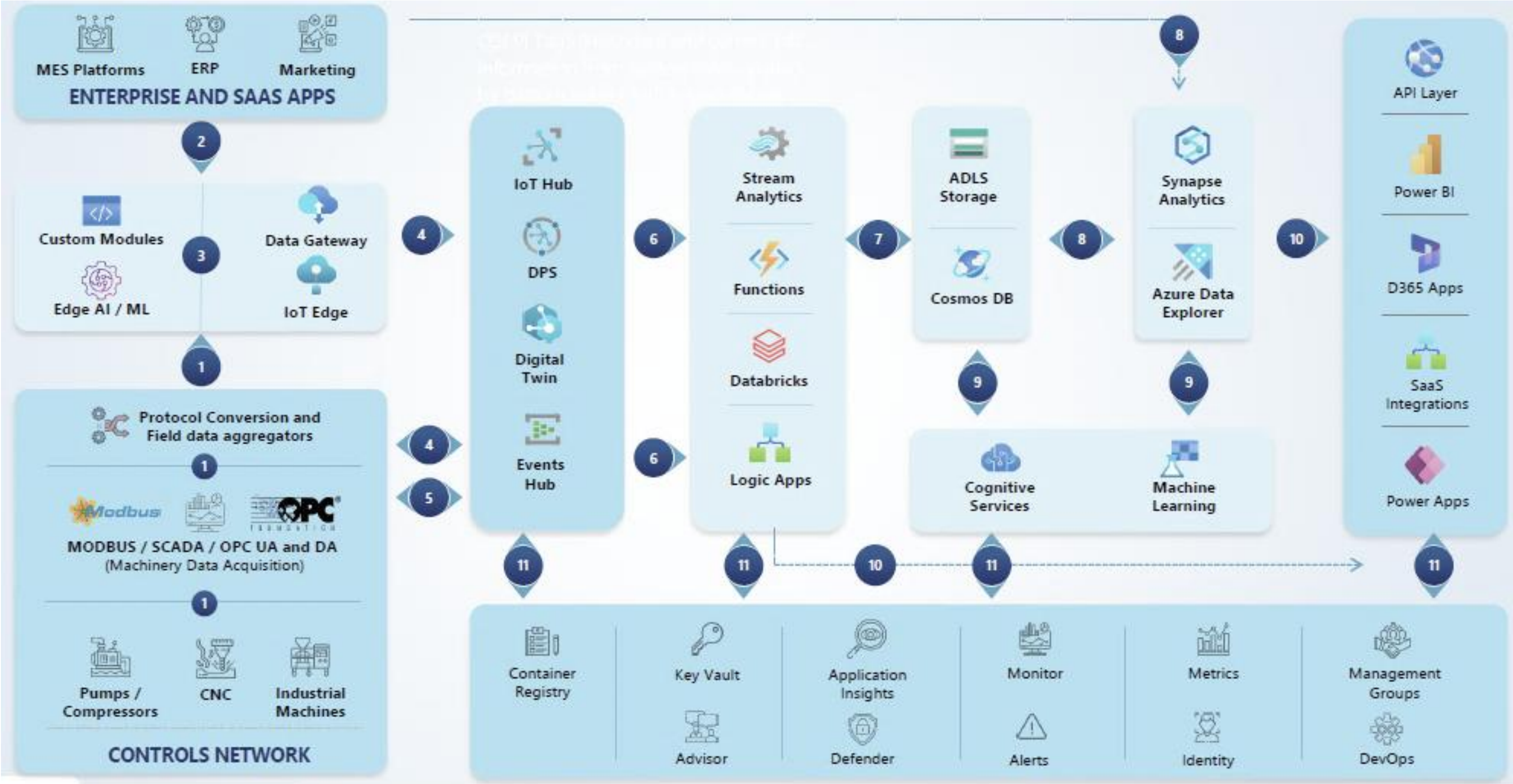
Cyber Security

Security at heart of Azure Smart through Azure Defender for IoT, Azure Defender in Cloud, and meeting customer specific compliances using Azure Defender and Azure Policy.

Augmented Reality

Integrated with Azure Digital Twins Explorer (latest edition). Building custom Apps in pipeline for Hololens.

Azure Smart IoT Accelerator – Reference Implementation

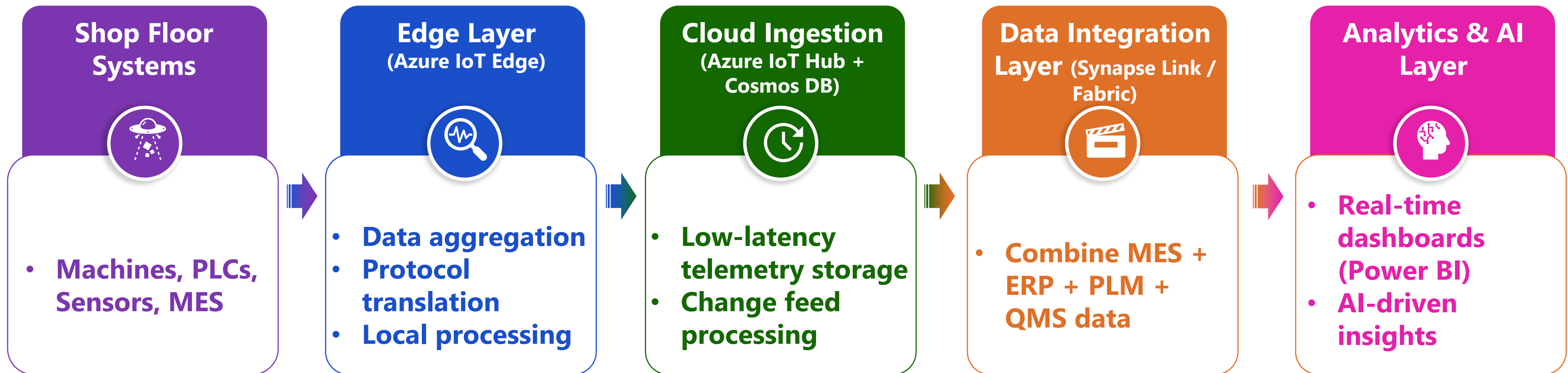


Introduction to MES & Edge Data Integrations

What is MES & Edge Data Integration?

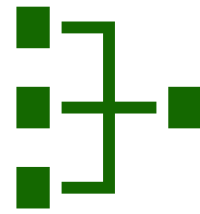
Connect Manufacturing Execution System, Shop Floor, and Enterprise Systems for Real-Time Decision Making: This solution enables manufacturers to integrate MES, shop-floor equipment, and enterprise systems with Azure to create a real-time, connected production environment.

How it works?





Multi-System Integration



- MES, ERP, PLM, QMS connectivity
- Unified data model across IT & OT systems



Edge Data Processing



- Azure IoT Edge for local aggregation
- Reduced latency & bandwidth usage



Real-Time Data Platform



- Cosmos DB for high-speed telemetry
- Synapse Link for analytics without ETL



Hybrid Data Architecture



- NoSQL (Cosmos DB) + Relational data integration
- Correlated reporting across systems



Scalable Compute & Storage



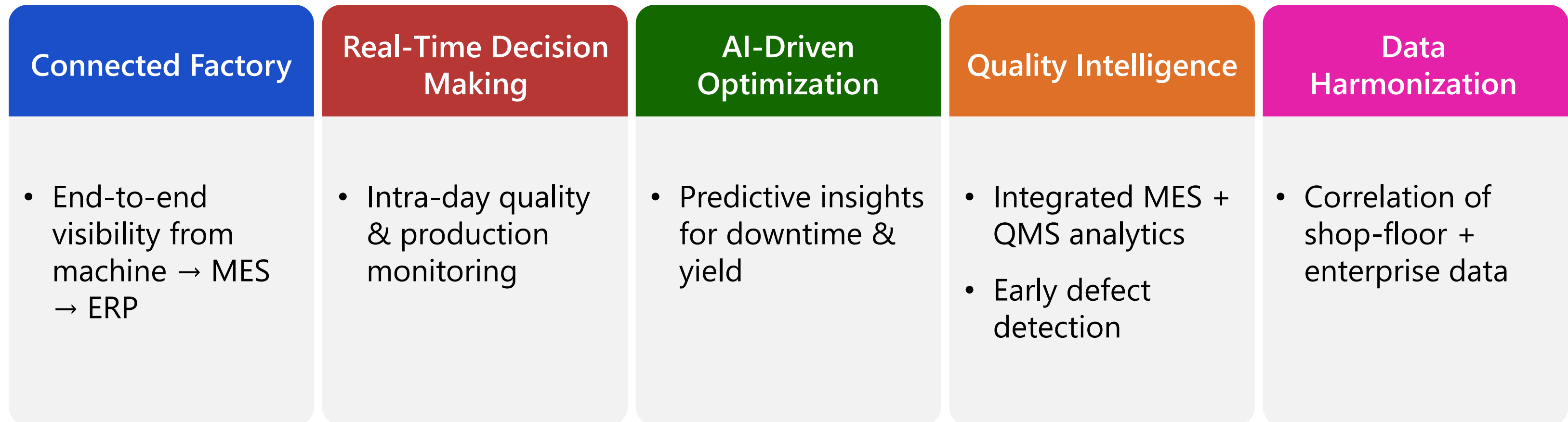
- Dynamic Cosmos DB RU scaling
- Event-driven architecture

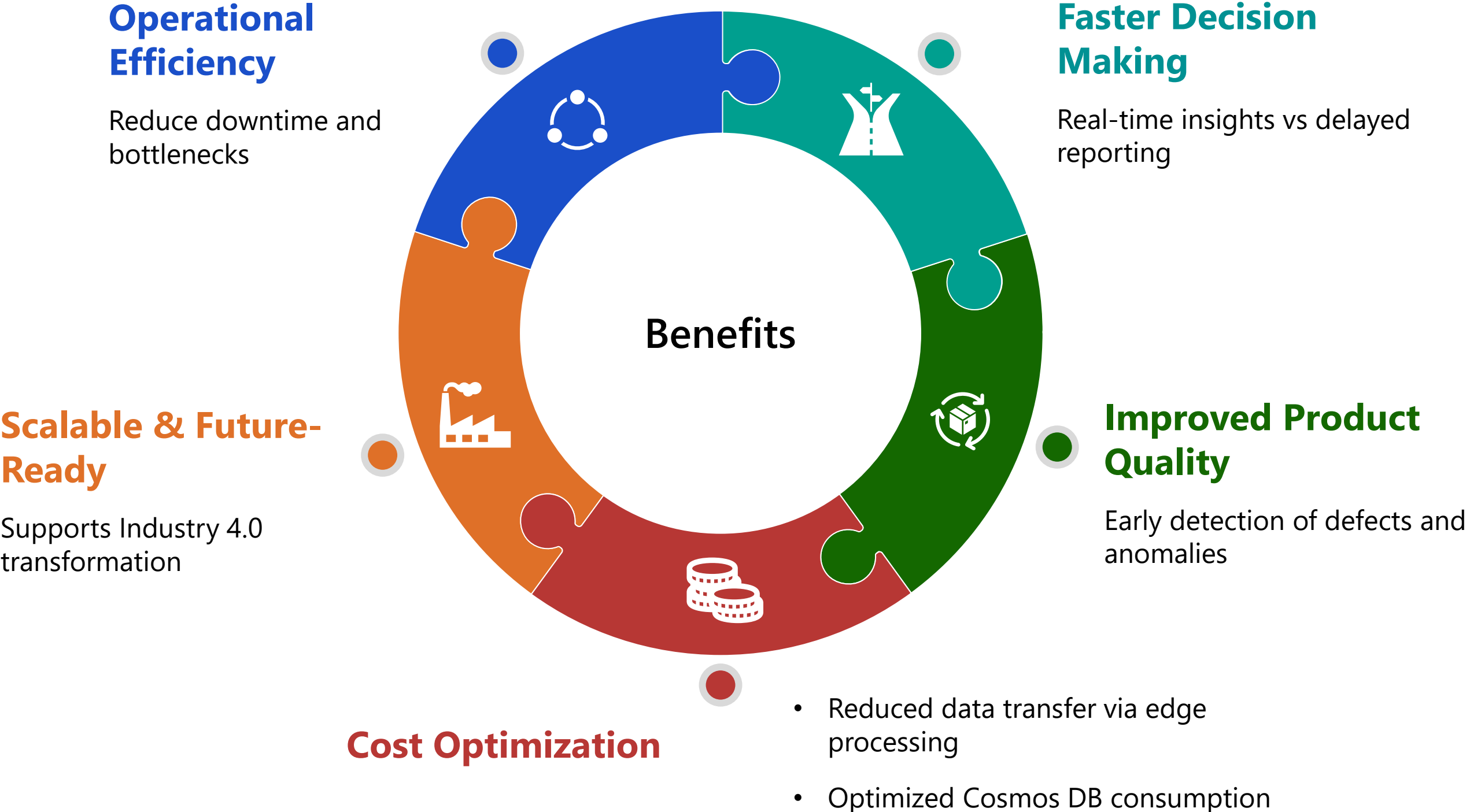


Built for Azure Ecosystem



- Native integration with IoT, Fabric, Power BI





Case Studies

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Customer Challenges

- Disconnected systems across MES, ERP, and shop-floor machines
- No real-time visibility into production or quality metrics
- Delayed reporting (hours/day lag) impacting decisions

Solution Approach

- Implemented Azure IoT Edge for machine-level data aggregation
- Integrated MES + ERP + shop-floor systems
- Used Cosmos DB for low-latency telemetry storage
- Enabled Synapse Link for real-time analytics

Key value Additions & Business Benefits

- Real-time production visibility (intra-day insights)
- 25–30% faster decision-making
- Improved data accuracy across systems
- Reduced manual reporting effort

Customer Challenges

- Quality issues detected late in the production cycle
- MES and QMS data not integrated
- Lack of real-time defect tracking

Solution Approach

- Integrated MES + Quality Management Systems (QMS)
- Streamed telemetry into Cosmos DB with change-feed processing
- Real-time dashboards built using Power BI + Synapse

Key Capabilities Delivered

- Inline quality monitoring
- Early anomaly detection
- Correlation of process parameters with defects

Key value Additions & Business Benefits

- Reduction in defect leakage
- Improved first-pass yield
- Faster root cause analysis
- Better compliance tracking

Customer Challenges

- High-volume machine data causing:
 - Network congestion
 - High cloud ingestion costs
- Need for low-latency processing

Solution Approach

- Implemented Azure IoT Edge aggregation layer
- Filtered and pre-processed data at edge
- Dynamic Cosmos DB RU scaling strategy

Key Innovation

- Edge-level correlation of MES + machine data
- Reduced unnecessary data streaming

Business Outcome

- 40–60% reduction in data transfer costs
- Improved system responsiveness
- Optimized cloud resource utilization

Customer Challenges

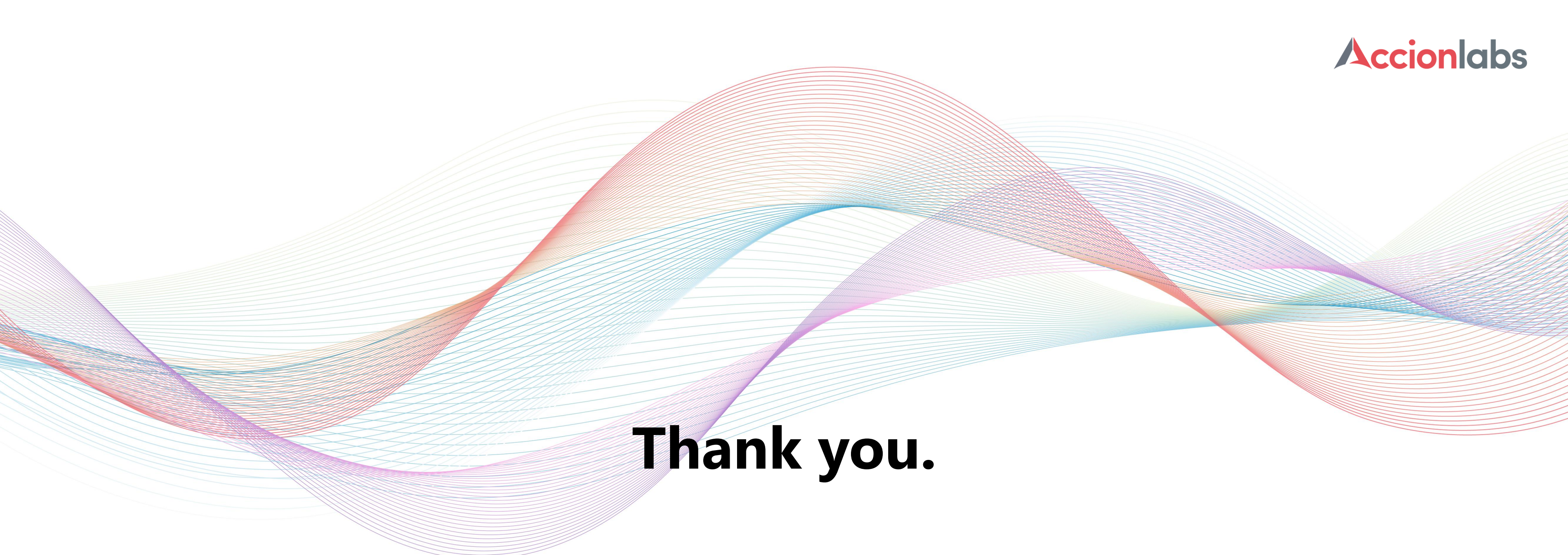
- Siloed IT and OT systems
- No unified data strategy
- Limited analytics capability

Solution Approach

- Built connected factory platform on Azure
- Integrated MES, ERP, PLM, IoT
- Enabled real-time + AI-driven insights

Key Innovation

- Transition from Level 2 → Level 4 maturity
- Unified data platform across enterprise
- Foundation for predictive and autonomous operations

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Thank you.

Enhancing Lives by Transforming Businesses through Innovation



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www.accionlabs.com

