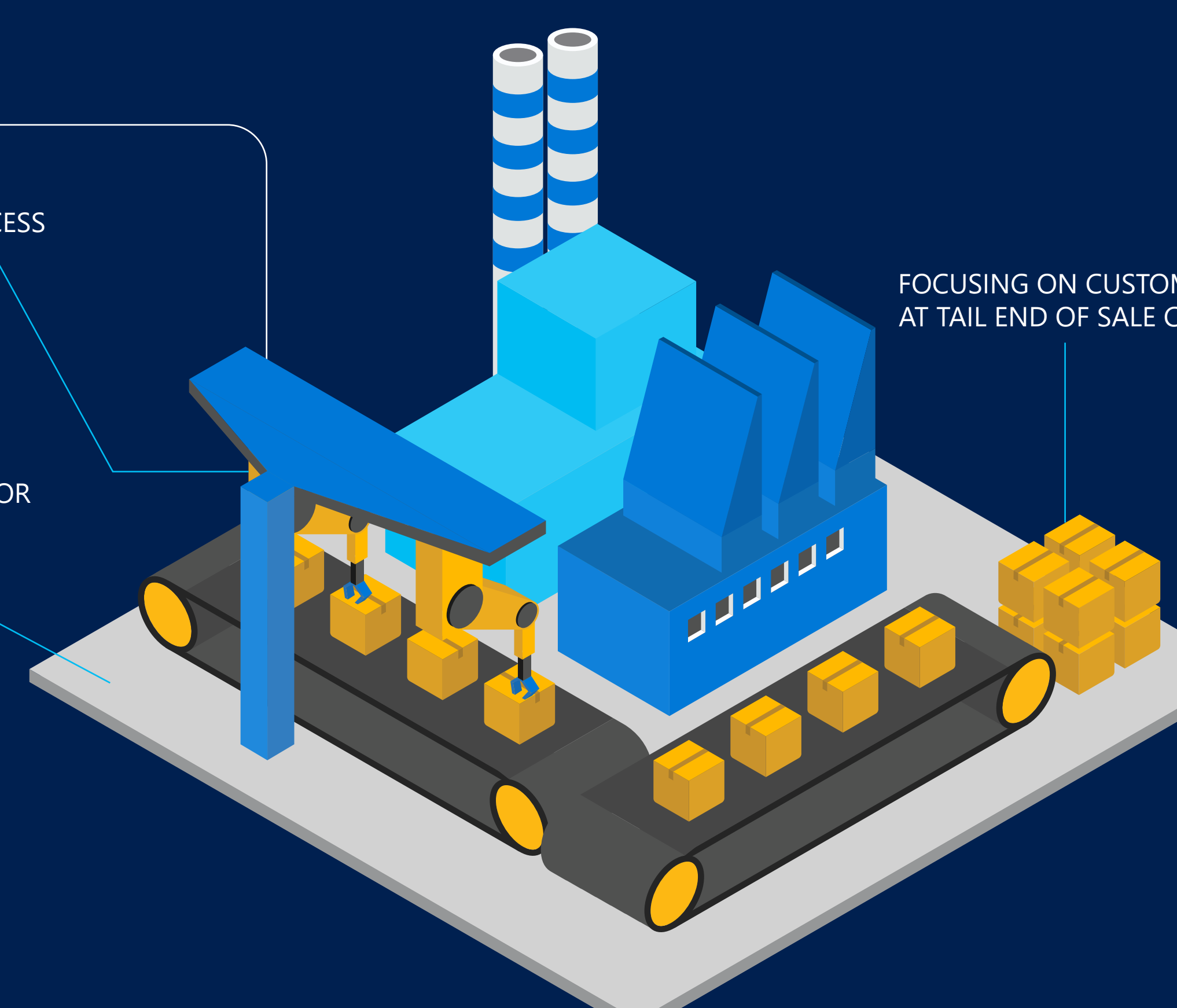
THE FACTORY OF THE FUTURE

Achieving Digital Excellence in Manufacturing, Today

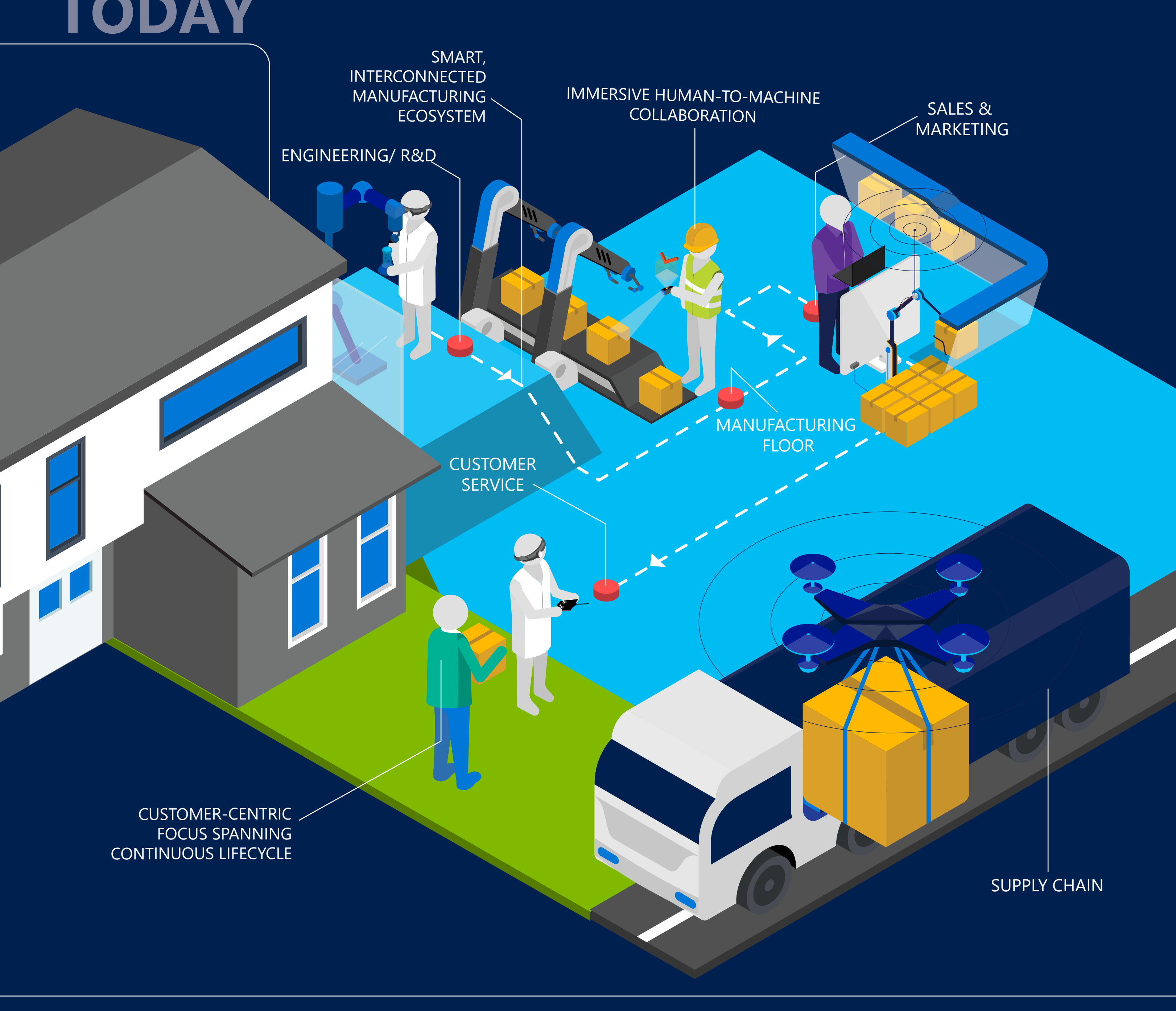
The Factory of the Future, today

Pushing the boundaries of Industry 4.0, the "Factory of the Future" means going beyond the walls of production to transform the entire connected ecosystem, across R&D, the plant, supply chain, product delivery, and customer service

PAST



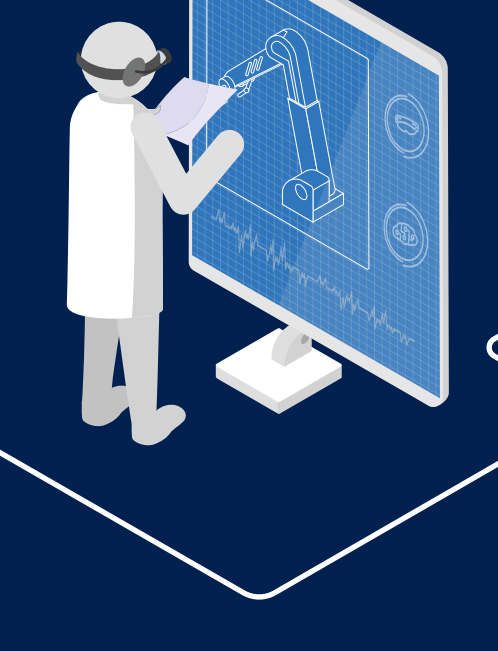
TODAY



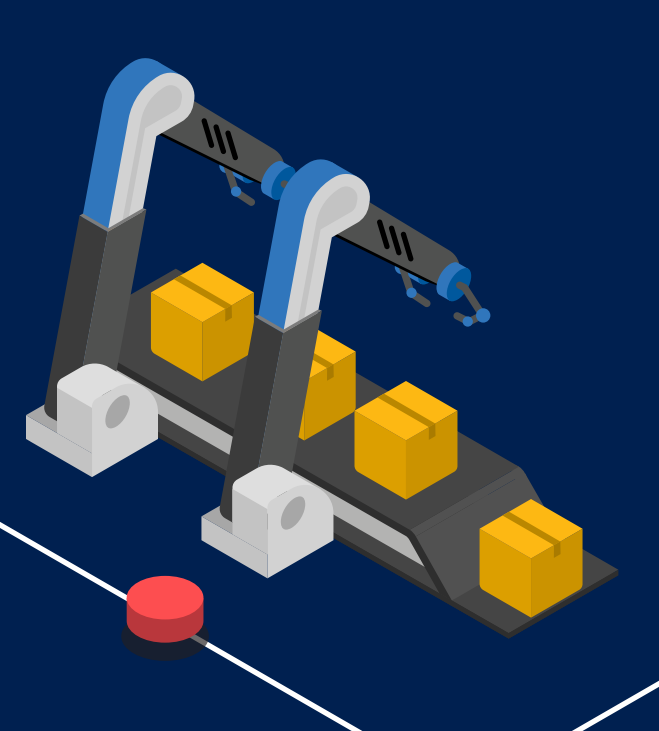
For many manufacturers, the Factory of the Future is delivering results that shatter all prior expectations

$100M
Invested in smart factory initiatives by manufacturers[1]

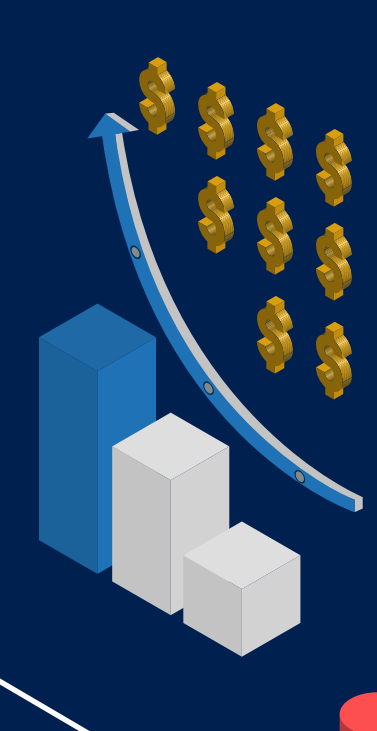
Within
3-5 years,
hundreds of millions of manufacturing processes will be represented by digital twins[2]



47% more goods
produced, by workers, than 20 years ago through the development of automation, robotics, and advanced manufacturing[3]

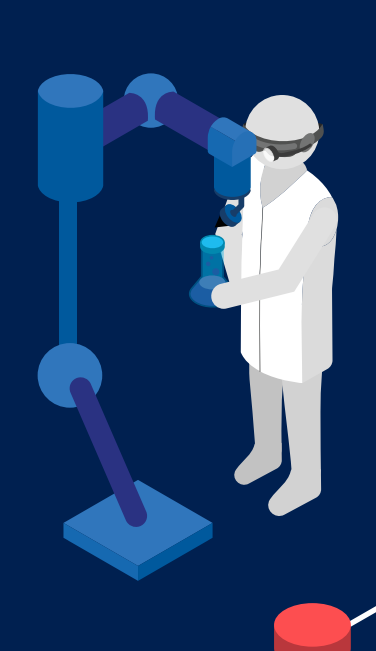


$500B
potential in savings for manufacturers and equipment makers from virtualization, real-time communication, and co-bot technology[4]



17-20%
productivity gains for manufacturers who have implemented smart factories[5]

85%
of manufacturing executives expect human-to-machine-centric environments to be commonplace by 2020[6]



15M
new jobs will be created in the U.S. over the next decade as a direct result of automation and artificial intelligence[7]

Key elements of the Factory of the Future

Open value chain

Integration across entire manufacturing ecosystem

Connectivity and interoperability: Vertical and horizontal integration, and end-to-end engineering

Seamless system integration: Integrating automation, engineering, and business systems with a common data source

Smart factories: Fully automated, hyper-connected factory floor, with bidirectional data flow from devices to ERP and CRM systems

Flexible production

Quickly adapt manufacturing process to meet customers' changing demands

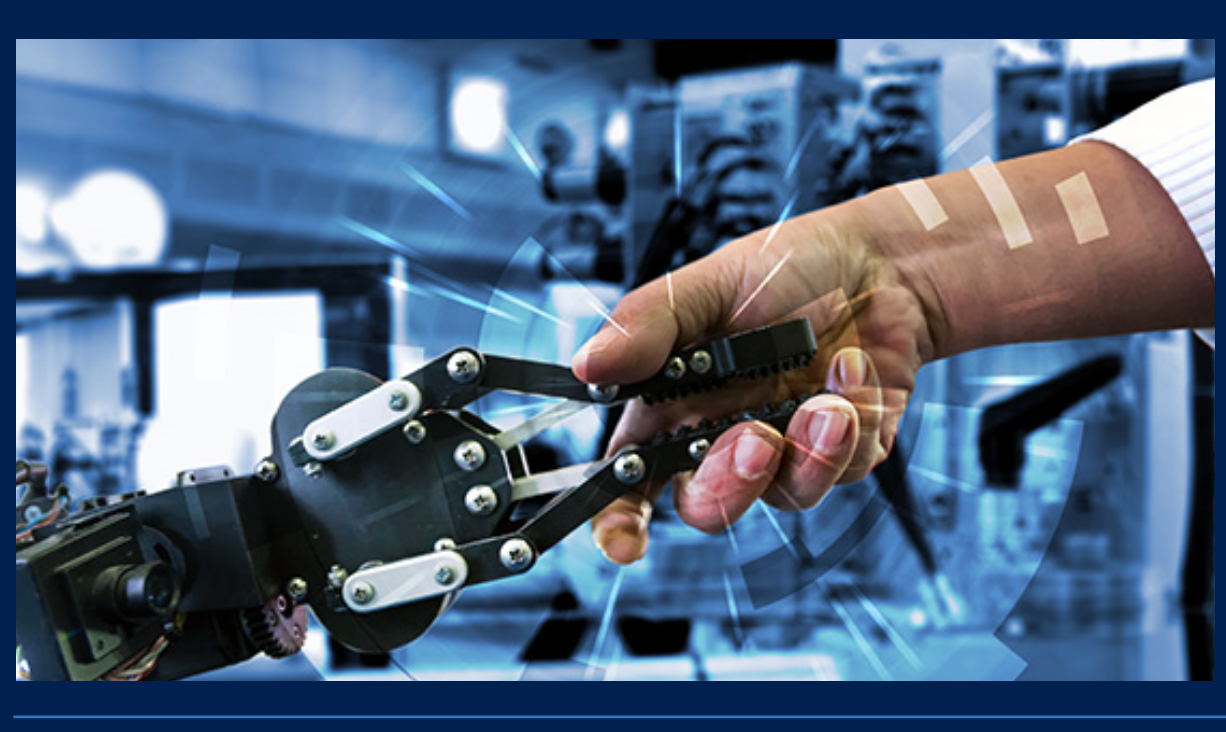
Customer-centric plants: Personalized products and mass customization through digital manufacturing, 3D printing, and robots

Customer-centric product designs: Informed by IoT-driven data and AI insights

Modelling simulations: Virtual planning and development of products and processes through digital twins

Advanced analytics for real-time decision making: Collecting and evaluating data from different sources, including production equipment, customer feedback loops, and enterprise systems

Digital Twin: Simulate and iterate through the end-to-end stages of design, production, and service to produce a digital representation of the plant floor, supply chain, and product lifecycle



Human-centered manufacturing

Co-Bots: Immersive human-to-machine collaboration

Autonomous, flexible, and cooperative: Through AI and smart sensor integration, robots will learn from humans

New business models

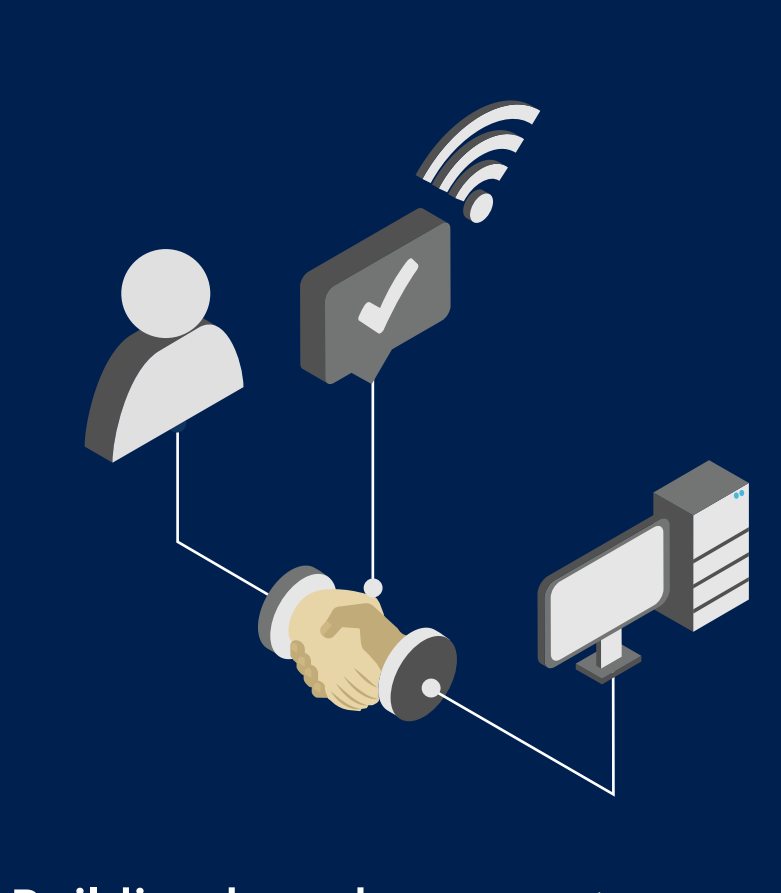
Leveraging a new flow of data to create new revenue streams: Manufacturers who can quickly capture and respond to customer feedback in the open value chain will create significantly service-related revenue opportunities including proactive service-delivery models, lifetime value-based services, self-service channels, and more flexible pricing

Capabilities enabling the Factory of the Future

- The Internet of Things
- Cloud Platform
- Machine to Machine to People Communication
- AI + Deep Learning
- Integrated Product and Production Simulation
- Additive Manufacturing and 3D Printing

Microsoft is enabling this reality in three fundamental ways

Empowering organizations to achieve breakthrough productivity with intelligent, mixed reality, and cognitive services by bringing together humans, machines, and AI



Building broader ecosystems through partnerships that include telecommunications, network, hardware, and software partners

Delivering a highly-flexible, robust software platform that allows the hyperconnected world to operate in hybrid models, supporting IIoT, people, and services working together

- Autonomous solutions
- Cortana Intelligence Suite & Cognitive Services
- HoloLens
- Azure IoT Suite
- Microsoft 3D Tools & Windows 10 IoT Core
- Machine Learning, Stream Analytics, & Edge analytics

Solutions to build your Factory of the Future

Microsoft Solutions

Solutions for Manufacturing

- Remote Monitoring
- Predictive Maintenance
- Connected Field Service
- Connected Factory
- Mobile Worker
- CPQ: Configure, Price, Quote
- Quote-to-Cash
- Contract Management

Partner Solutions
In AppSource

http://microsoft.com/manufacturing

This infographic is based on Microsoft analysis of third-party data.

Sources include:
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5 Capgemini: Smart Factories: How can manufacturers realize the potential of digital industrial revolution. 2017.
6 Eric Schaeffer et al., Machine Dreams; Making the most of the connected industrial workforce. Accenture. February, 2017.
7 Francois Barbier, 5 trends for the future of manufacturing. World Economic Forum. June 2017