Microsoft Cloud for Manufacturing
Manufacturing a resilient and sustainable future

Microsoft

Transcend boundaries with tailored industry solutions

Microsoft Cloud for Financial Services

Microsoft Cloud for Healthcare

Microsoft Cloud for Manufacturing

Microsoft Cloud for Nonprofit

Microsoft Cloud for Retail

Microsoft Cloud for Sustainability

Microsoft Cloud

Modern work

Business applications

Infrastructure

Digital and app innovation

Data & AI

Security

The most trusted and comprehensive cloud

GARTNER TOP TRENDS IN MANUFACTURING INDUSTRIES

Digital + Product Experience:

By 2025, 95% of the Top 50 Consumer Goods manufacturers will have one or more of the following: a brand app using AI, embedded technology in the product, use of digital assets (such as videos), or integrated innovation with their IT and R&D teams.

Total Experience:

By 2024, organizations providing a total experience will outperform competitors by 25% in satisfaction metrics for both customer and employee experience.

Ecosystem Partnerships:

By 2024, 75% of the top 20 global consumer goods companies will partner with another company to provide a digital experience to augment their physical products/services.

Data Monetization:

By the end of 2024, 50% of heavy asset manufacturing organizations will have failed to monetize their data.

Equipment as a Service:

By YE23, 20% of industrial equipment manufacturers will support EaaS with remote Industrial IoT capabilities up from a current base of near zero.

Anywhere Operations:

By 2023, 40% of organizations will blend virtual and physical experiences, leading to increased workforce productivity and customer reach.

Autonomous Things:

By 2026, the use of autonomous things will displace 25% of warehouse logistics operators such as forklift drivers.

Hyperautomation:

By 2025, manufacturers will lower operational costs by 25% by combining hyperautomation technologies with redesigned operational processes.

Intelligent Composable Business:

By 2023, organizations that have adopted a composable approach will outpace competition by 80% in the speed of new initiative implementation.
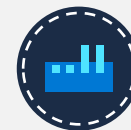
Smart Factory:

By 2025 3 out of 5 manufacturers' smart factory initiatives will stall due to lack of supply chain integration.

Reimagine your organization with Microsoft Cloud for Manufacturing

Transform your workforce

Unlock innovation and deliver new services

Build more agile factories

Create more resilient supply chains

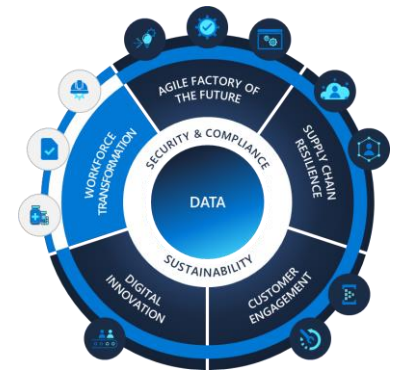**Engage customers in new ways**

Streamline and strengthen security

Unlock Data & Intelligence

1. TRANSFORM YOUR WORKFORCE

Connected & Frontline Worker

Empower your workforce with digital tools and modern devices that offer the best experiences for collaboration and productivity

Frontline Worker Enablement — See up to a **10%** increase in efficiency[1]

See up to a **5x** faster resolution time for issues[1]

Mixed Reality Solutions for Worker Productivity

Connected Worker — See up to a **98%** reduction in defect rate[1]

Learning & Knowledge Management

Identify skills gaps, improve the way training is delivered, and accelerating access to required knowledge across the organization

Learning Solutions — Up to **33%** reduction in manager time spent on training[1]

Up to **$1.2M** in reduced legacy tools & professional services[1]

Knowledge & Insights

Cognitive Search — Reduced RFP response time[1]

Health, Safety, & Wellness

Operate assets responsibly, monitor intelligently, and protect continuously with solutions for a safer work environment

Return to work — **~3.2** hours in line-of-business employee productivity improvement per week[1]

Up to 50% lost-time reduction to OSHA reportable incidents[1]

Health & safety tracking and compliance

Connected workplace — **20-25%** in energy savings[1]

AIRBUS

Reduce design validation time by 80% and accelerate complex tasks during assembly by 30%

"*Mixed reality can help us to increase quality, safety and security,*" *Dumont says.* "*The level of human error is significantly reduced, and in aerospace, increased quality is increased safety—and needless to say, security goes with that.*"

"*By having the right information at the right time in hands free mode, not only does quality increase, but also safety, and this is what we are looking for. Quality without consideration of the well-being of our workers is not possible,*"

"*We are very optimistic about this future collaboration with Microsoft*" *Dumont says.* "*This is really a way for us to lead our digital transformation. It's multifold, but the use of mixed reality and HoloLens 2 are one of the key assets for Airbus in the future.*"

2. UNLOCK INNOVATION & DELIVER NEW SERVICES
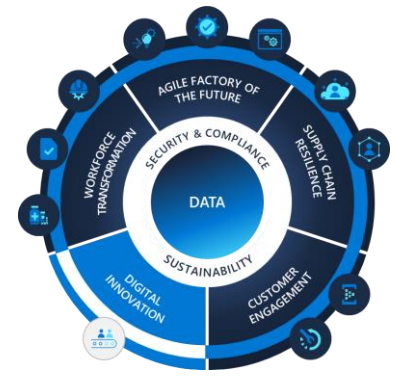
Product as a Service

Use connected products to generate new insights into product health and usage, and create new product-as-a-service opportunities

Up to a **20%** improvement in product quality

Up to **40%** improvement in product performance

Up to a **27%** improvement in revenue

Up to **25%** improvement in margin

Real benefits
- Create a competitive differentiation of your products and services
- Help your customers' expense move from CAPEX to OPEX
- Develop new revenue channels through innovative digital services
- Establish a strong level of trust and partnership with your customers with an outcome-based commitment

Product Twins

Accelerate introduction and evolution of connected products using remote monitoring of their digital thread, and simulation of outcomes using digital twins

Up to a **30%** reduction in new product development time

Up to **70%** improvement in install base inspection efficiency
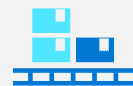
Up to **16%** improvement in on-time and complete shipments

Up to **20%** improvement in successful new product introductions

Product Engineering

Leverage cloud-based innovation platforms and an ecosystem of best-in-class partner solutions, to streamline product development

50% increase in speed to market[1]

70% decrease in new product development time[1]

7

Digital feedback loops power innovation in manufacturing

Customers

1. Improve customer experience & build long term relationships
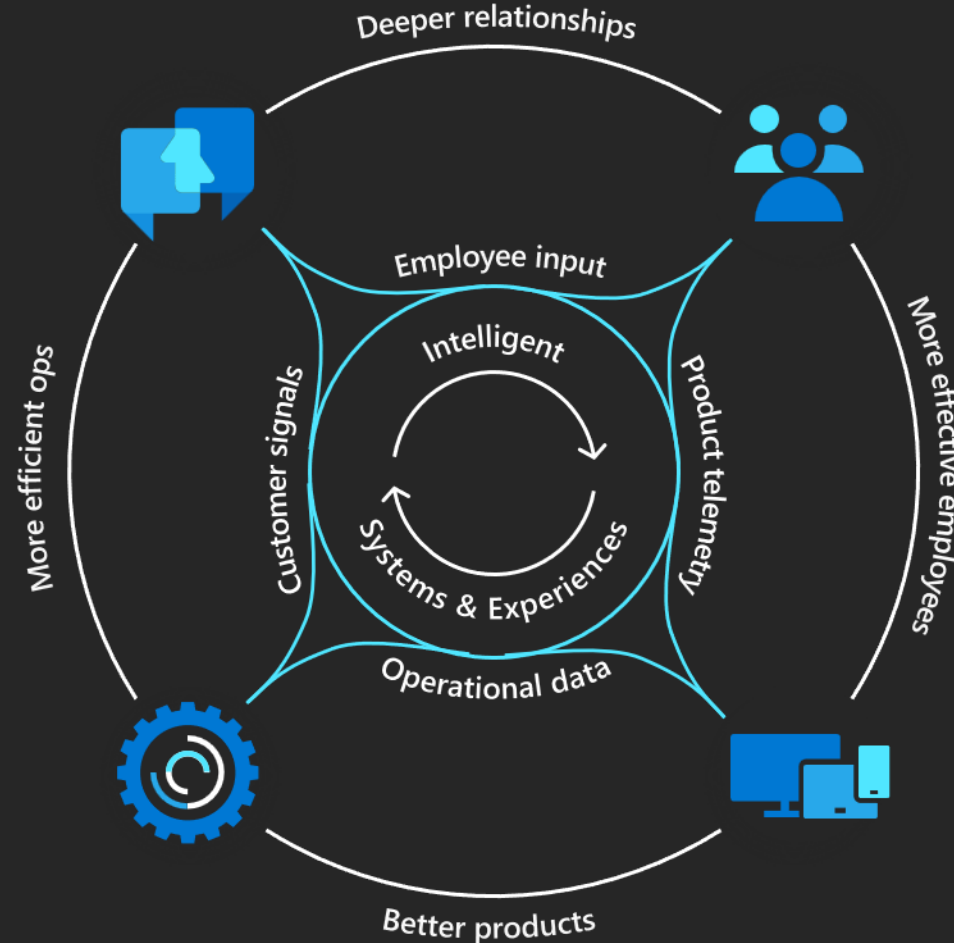   - Customer Service Data & Feedback
   - Customer Demand

Employees

3. Provide proactive customer support with optimized scheduling & agent management
   - Field Service Dispatch Data
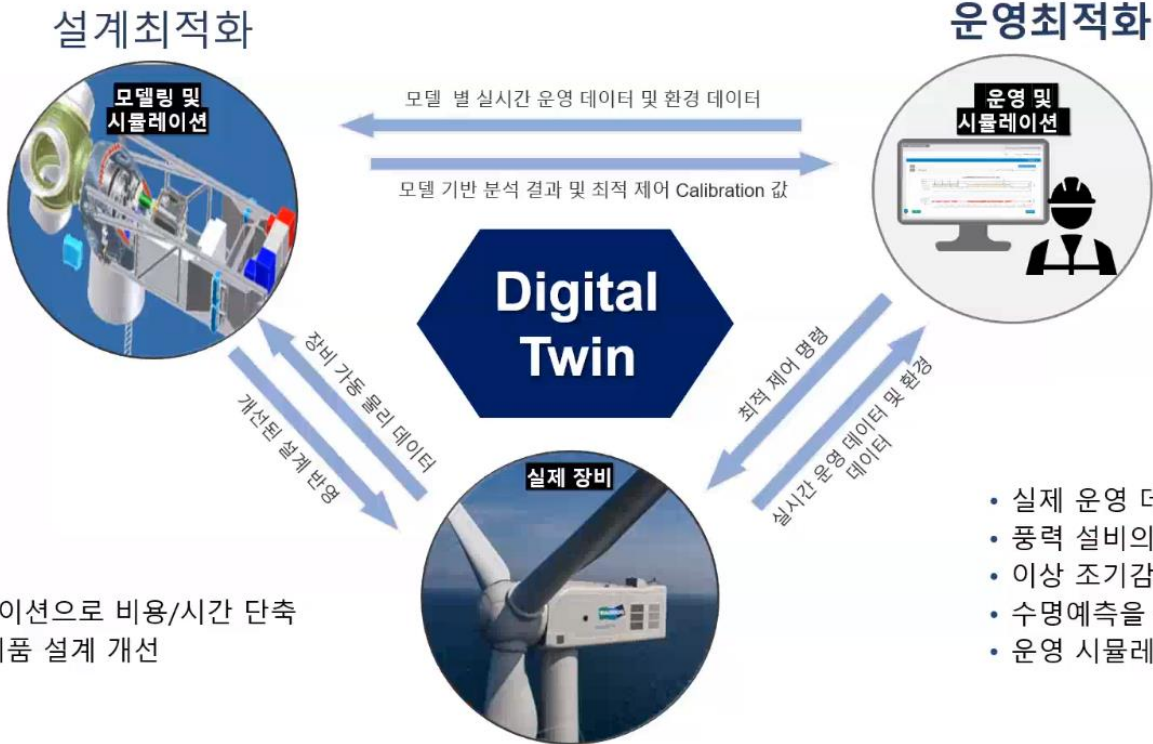   - Technician Efficiency & Feedback

Operations

4. Increase operational efficiency & enable intelligent supply chain management
   - Trending Issues & Resolution
   - Inventory Tracking
   - Predictive Maintenance data
   - Sustainability Assessment & Tracking

Products

2. Accelerate product innovation & establish continuous product improvement
   - Product Telemetry & Feedback
   - Product R&D

Deeper relationships

Employee input

Intelligent Systems & Experiences

Customer signals

Product telemetry

Operational data

More efficient ops

More effective employees

Better products

- 두산에너빌러티: 제주 탐라풍력단지 시범 운영 중
- "해상 풍력은 비용이 많이 들고 운영 전문가도 극소수라 사람이 직접 오가며 관리하긴 어려운 만큼, 다른 분야보다 디지털 트윈 기술을 선제적으로 적용할 필요가 있었다" (두산에너빌러티 디지털혁신팀장)

설계최적화

모델링 및 시뮬레이션

운영최적화

운영 및 시뮬레이션

모델 별 실시간 운영 데이터 및 환경 데이터

모델 기반 분석 결과 및 최적 제어 Calibration 값

Digital Twin

장비 가동 물리 데이터

개선된 설계 반영

실제 장비

최적 제어 명령

실시간 운영 데이터 및 환경 데이터

- 시뮬레이션으로 비용/시간 단축
- 차기 제품 설계 개선

- 실제 운영 데이터의 수집
- 풍력 설비의 운영 가시성 확보
- 이상 조기감지 통한 예지정비
- 수명예측을 통한 정비시간 단축
- 운영 시뮬레이션을 통한 최적화
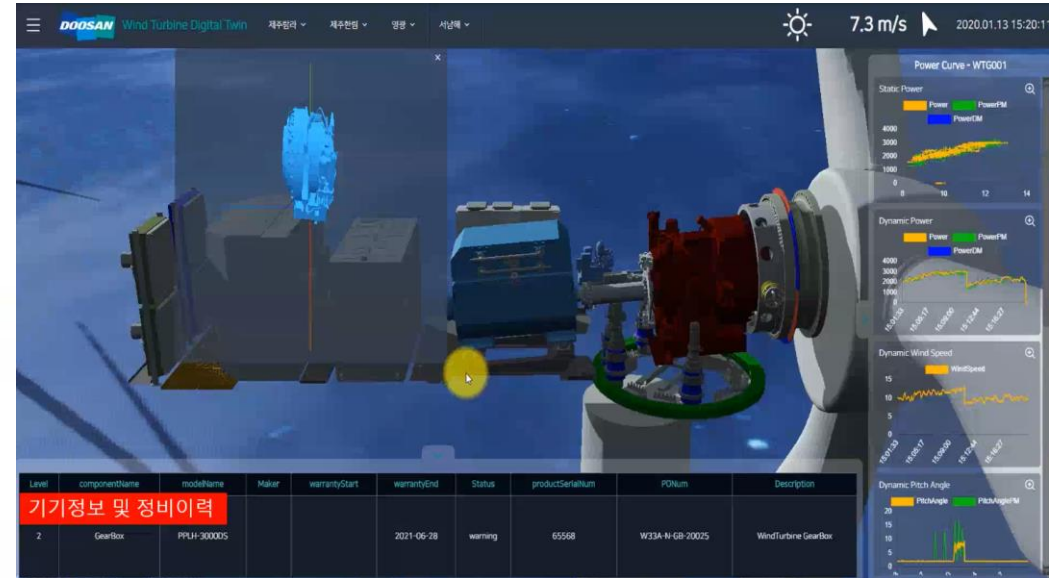
3. BUILD MORE AGILE FACTORIES

Asset Productivity

Secure connection and access to distributed assets, remote monitoring, anomaly detection and predictive maintenance to increase asset productivity

Operational Visibility

Improve visibility across connected factory assets and processes to increase productivity of equipment and labor across sites

Production Operations

Increase production efficiency and quality, by advising, assisting, and augmenting factory workers with AI and autonomous systems

---

Asset Management

solution enables manufacturers to digitize their global operations

Unlocking previously hidden value and deliver insight-driven outcomes

Proven impact[1]

- **3%** improvement in plant reliability
- **Up to 50%** increase in OEE
- **Up to 50%** increase in energy efficiency
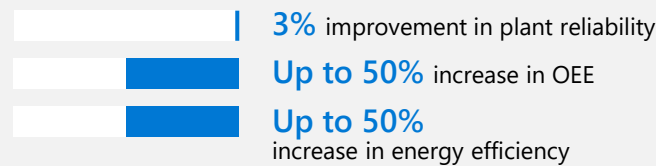
Business value created

- ☑ Improved throughput
- ☑ Reduced cost
- ☑ Improved quality
- ☑ Increased reliability
- ☑ Improved sustainability

Proven impact[1]

- **Up to 90%** Improvement in OEE
- **Up to 65%** Increase in labor efficiency
- **5-10%** Reduction in energy costs
- **Up to 35%** Reduction in inventory
- **5-10%** Reduction in waste/ scrap
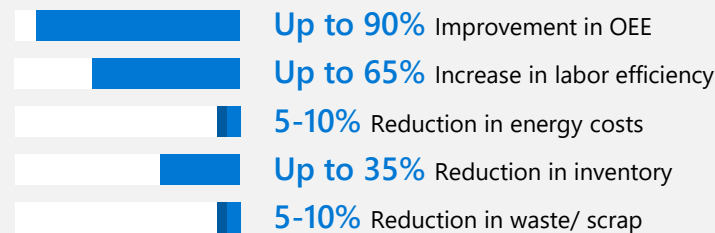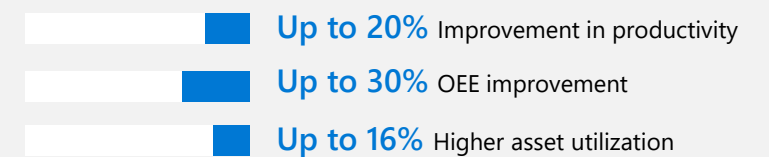
Real benefits

- Create a digital representation for an end-to-end production process view of the factory floor
- Gain remote visibility with an ability to rewind & replay and bidirectional operational control
- Leverage process data to train machine learning models for Advanced Process Control
- Enable autonomous forward-looking decision making

Proven impact[1]

- **Up to 20%** Improvement in productivity
- **Up to 30%** OEE improvement
- **Up to 16%** Higher asset utilization

Develop new product and process insights to help operators make better decisions using digital twins of the factory

"We are digitally rewiring our supply chain, focusing on generating real-time, democratized information, artificial intelligence planning, capitalizing on robotics and building digitally connected factories. All this will allow us to readily predict and respond to whatever the future throws at us,"

"We are creating a culture and organization which is data-intelligent across our end-to-end supply chain, supported with the data, analytics and insights to make smarter, faster decisions to understand, anticipate and exceed consumer expectations,"

4. CREATE MORE RESILIENT SUPPLY CHAINS
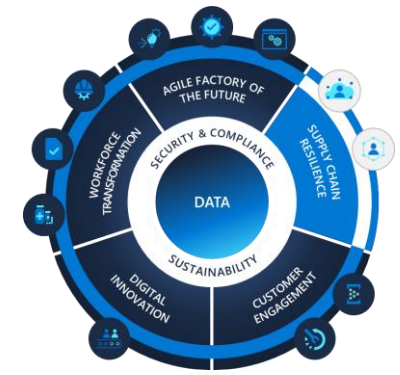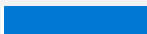
Planning & Optimization

Increase service levels and reduce cost, with the flexibility to run manufacturing and warehouse planning and execution in the cloud and at the edge

Inventory Optimization

Optimize inventory across multiple echelon and locations to drive increased service and reduced cost

Proven impact[1]

- **20-30%** inventory reduction
- **3-5pp** service improvement
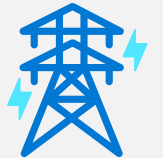- **50-90%** reduction in planner workload
- **99+%** of automated decisions

Supply Chain Visibility

Leverage demand and supply signals across to minimize risk and capitalize on future opportunities

Supply Chain Control Tower

Understand and leverage signals from the digital ecosystem, minimize risk and capitalize on future opportunities

Proven impact[1]

- **Up to 30%** reduced expediting expenses
- **Up to 10%** reduced inventory
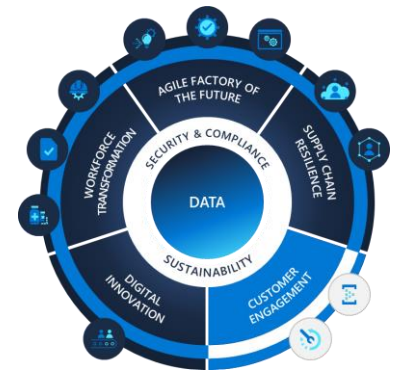- **Up to 60%** increase in planner efficiency
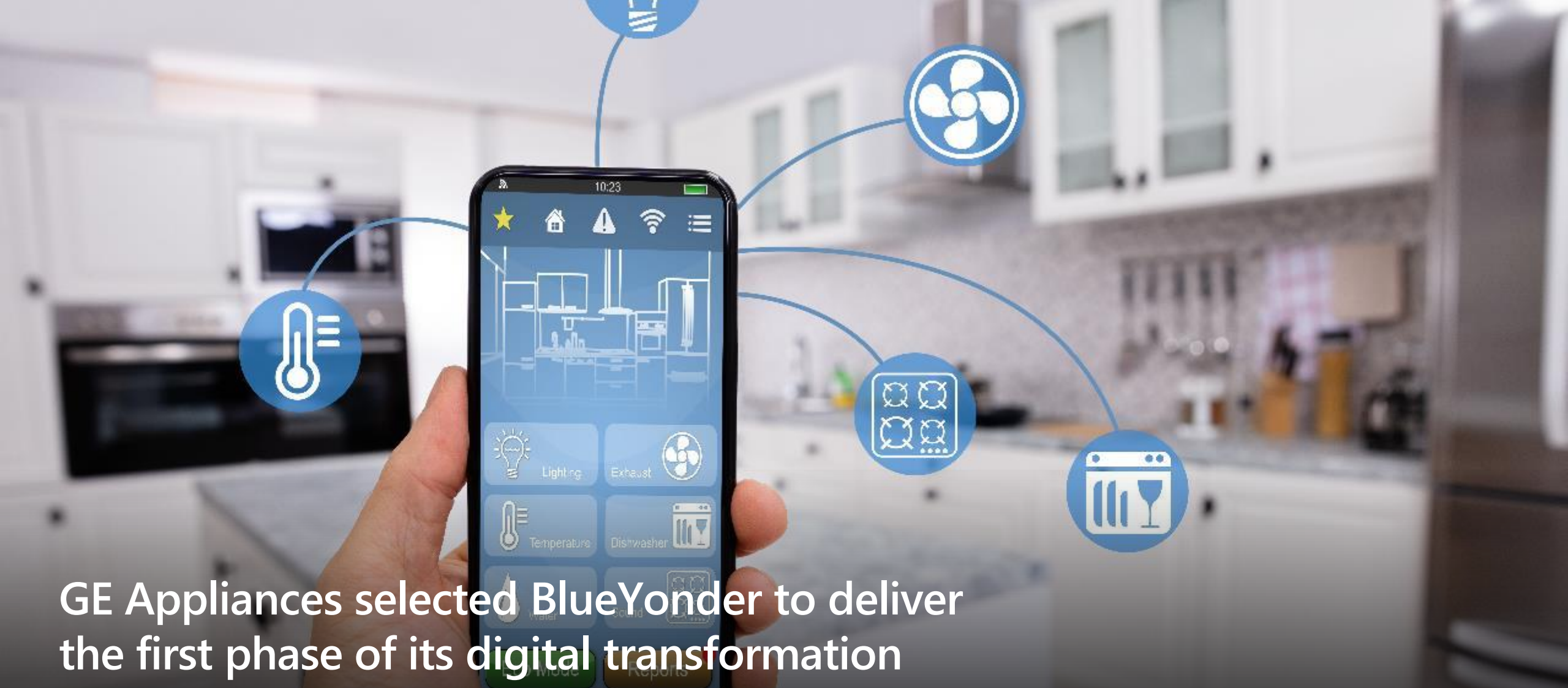
GE Appliances selected BlueYonder to deliver the first phase of its digital transformation journey by leveraging the Luminate Control Tower to provide real-time visibility and control across its supply chain

5. ENGAGE CUSTOMERS IN NEW WAYS

Activate Digital Selling

Win more deals and increase margins with digital solutions for quote to cash, configure, price, quote, and contract lifecycle management

- 75% of buyers said their purchases involved people from a wide variety of roles, teams, and locations[2]

- Buyers want a B2C-like experience. Millennials make up the single biggest B2B buyer group[3]

- B2B buyers prefer digital experiences 2x as often[4]

- 50% of buyers choose the vendor that responds first

Always on Service

Help service agents, dispatched technicians, and virtual assistants install and monitor connected assets, and engage remotely with customers, assets and experts

3x	25%	90%
PRODUCTS BECOMING SERVICES[5]	**IoT & REMOTE SERVICES[6]**	**CONTRACTS & CONSUMPTION MODELS[7]**
Fully servitized operations were 3 times more likely to be profitable	Increases technician productivity by an average of 25%	Field service software enables 90% SLA compliance for top-performing companies

Microsoft

Thank you

Microsoft Cloud for Manufacturing