

Simplify factory IoT— and drive ROI from the start

Smart Factory provides modular, end-to-end automation. It's built on the IoTConnect® platform with asset monitoring and predictive maintenance built in.



Contents



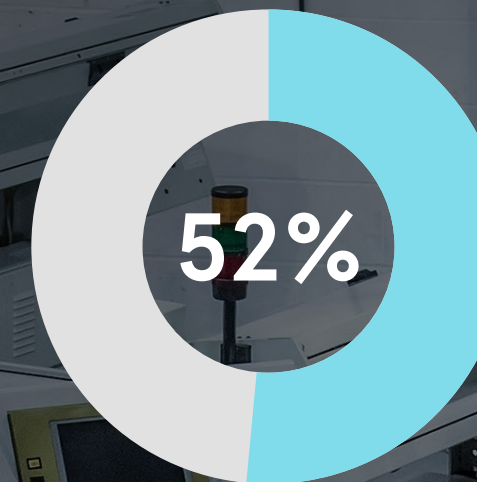
IoT for a changing world

In a complex world, you need simplified IoT

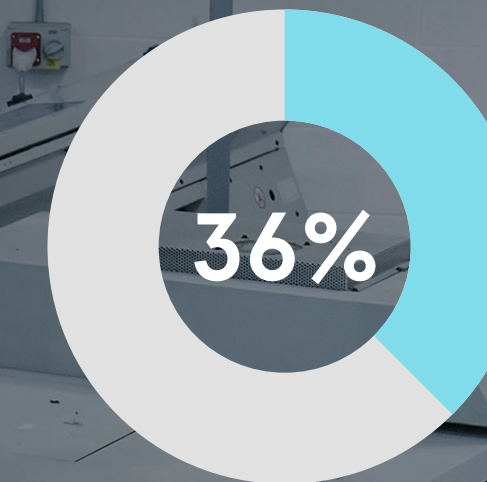
Today's manufacturers are embracing automation and machine-to-machine communication to improve coordination across their enterprises. One driver is the need to quickly scale and flex to changing demands—like those surrounding COVID-19. To keep up, manufacturers are turning to real-time process monitoring, streamlined data analytics, and predictive maintenance to **lower costs, speed up production, and quickly adapt to change.**

Industry response to COVID-19¹

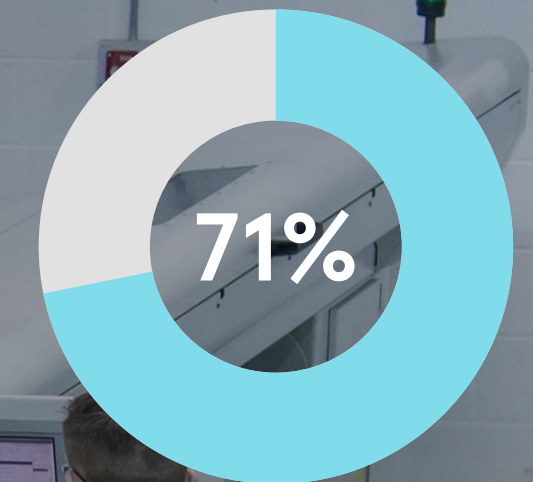
Rethinking
supply chains



Accelerating investment
in automation



Prioritizing digital
transformation



IoT adoption shows significant ROI potential across scenarios like:

Warehouse management

Staff workload management

Inventory monitoring

Smart product tracking

Renewable plants supervision

In-store intelligence²

Environmental monitoring

Smart metering

Inventory intelligence

Operator productivity

What are your barriers to IoT?

Only 5% of manufacturing companies have an in-depth IoT strategy for improving plant equipment reliability and maintenance.³ One key reason is that they lack the ability to collect, prepare, and analyze data, and then illustrate and report it so it can be used by stakeholders. If this is you, you're not alone. According to the consulting firm Capgemini, 60% of enterprises don't have the analytics capabilities to take advantage of the data they generate.²

Manufacturers are also considering the costs of hiring big data and analytic experts and investing in data hardware and applications to process and understand the data. Other barriers include integration of legacy equipment and data and IoT security. A 2020 survey by Omdia found that of 170 industry leaders in IoT, 85% saw security concerns as a major barrier to IoT adoption, and 64% identified end-to-end IoT security as their top short-term priority.⁴

With challenges that span operations and require quick response in today's world, you need simple, integrated solutions.

1. [Why resilience is the antidote to crisis for manufacturing executives, EY, April 2020](#)
2. [Where IoT Can Deliver the Most Value in 2018, Forbes, Louis Columbus, March 18, 2018](#)
3. [IndustryWeek Survey Shares Insight on Key Issues and Priorities, Manufacturers Weigh in on Key Issues, Top Quartile Performance, Emerson, 2017](#)
4. [IoT 5.0: Getting ready for the next phase of IoT evolution, Omdia, 2020](#)

Introducing Smart Factory

Quickly configure a custom solution built on IoTConnect

With Microsoft Azure analytics built in, Smart Factory is designed to provide simple, customizable factory monitoring in real time, 24/7, across your operations—all from a centralized dashboard. The technology is based on clear protocols and integrated technologies aligned for manufacturing—helping you move fast. Integration of all your data and equipment, new and old, means nothing gets lost or retired.


This is where the decision making happens

IoTConnect + Azure Services
Data aggregation & business insights via machine learning & data visualization


Manufacturing Equipment
New + legacy equipment using Avnet Guardian with Azure Sphere


Edge Computing + Edge Analytics


Other System Data
such as field ticketing

Gain flexibility with real-time remote monitoring, from anywhere, accessing dashboards via a mobile app.

Increase efficiency with machine learning: enable devices to change course without human intervention, saving time and resources.

Maintain compliance and quality standards by using wireless sensors to enable continual monitoring of key environmental variables.

Improve insights with sensor data transmission directly to the cloud where it can be analyzed and used to identify areas for improvement.

Gain comprehensive security across greenfield and brownfield equipment with Azure Sphere-based Avnet Guardian wireless edge modules.

Speed factory output while tackling common KPIs

Optimize from the cloud to the edge

- Enhanced product quality
- Real-time operational visibility for all locations
- Integration with supply chain management systems
- ML-based prescriptive analytics capabilities
- Cost efficiency with tiered pricing that scales to your needs
- End-to-end security including at sensors and gateways

Remove obstacles to meet KPIs

- Downtime/availability
- Quality
- Actual performance
- Overall equipment effectiveness
- Machine down/idle time/In use
- Supply chain efficiency

Custom innovate with Smart Asset Monitoring and Azure AI

With IoTConnect behind your solution, develop and manage factory IoT from end to end. Integrate Smart Factory with other pre-built Smart Asset Monitoring solutions—like Smart Fleet Solution and Smart Energy Monitoring—and you have everything you need to innovate around the health and efficiency of your assets. Extend the value of your existing (brownfield) equipment with plug-and-play Avnet Guardian wireless edge modules, based on Azure Sphere.

Quickly grow ROI with Avnet hardware support and built-in Azure AI and data analytics to transform real-time and legacy data into valuable insights for all your connected machinery.

Integrated Azure services

- Azure IoT Hub
- Azure Event Hub
- Azure Blob Storage
- Azure Machine Learning Studio
- Azure Stream Analytics
- Azure Cosmos DB
- Azure SQL Database
- Azure Logic Apps
- Power BI
- Azure Sphere

Use Case

How a packaging company got smart about production

For one global packaging company with a reputation for innovation, Smart Factory helped rein in compliance challenges. The company specializes in flexible printing and converting packaging for food and consumer products. Selling globally means meeting diverse and changing regulations.

Challenges

The company needed to maintain air quality control around air temperature, gas levels, and other environmental variables related to food safety and hygiene and managing costs around quality control.

Solution

Wireless sensors are installed throughout the factory and integrated via an Internet gateway to monitor critical processes and environmental variables. Azure provides cloud-based predictive analytics for monitoring variables in the printing machine area, light intensity on the final products, and CO2 concentrations in the worker area.

Data from the sensor nodes is transmitted directly to the cloud for analysis and used for different applications. The company also uses Avnet mobile apps to source data from Azure and help factory floor supervisors and management monitor in real time.



The company knows when materials are more vulnerable to higher temperature and humidity, helping to avoid problems.



With the implementation of Azure Machine Learning, the company's machines can alter course without the need for human intervention, saving time and resources.



The factory can optimize energy usage based on biometric scans of employees to predict when to turn on lights and HVAC systems and at what temperature.

Use Case

Simplifying operations at a complex pharmaceutical

Global pharmaceutical company Intas enlisted Avnet to help build a connected factory that would empower the company to monitor production lines from a centralized dashboard.

Challenges

Intas needed to connect multiple production lines and diverse machines (including PLC and HMI, data acquisition hardware, and IoT gateway) for remote management, predictive analytics, real-time telemetry and analytics, and performance anomaly diagnosis. The solution needed to meet industry regulation: Title 21 CFR Part 11.

Solution

The Smart Factory solution links production lines and machines and enables smart rules for autonomous actions. Intas can now acquire data at different stages of production while remotely monitoring and detecting problems before they occur.



Connected
59 assets



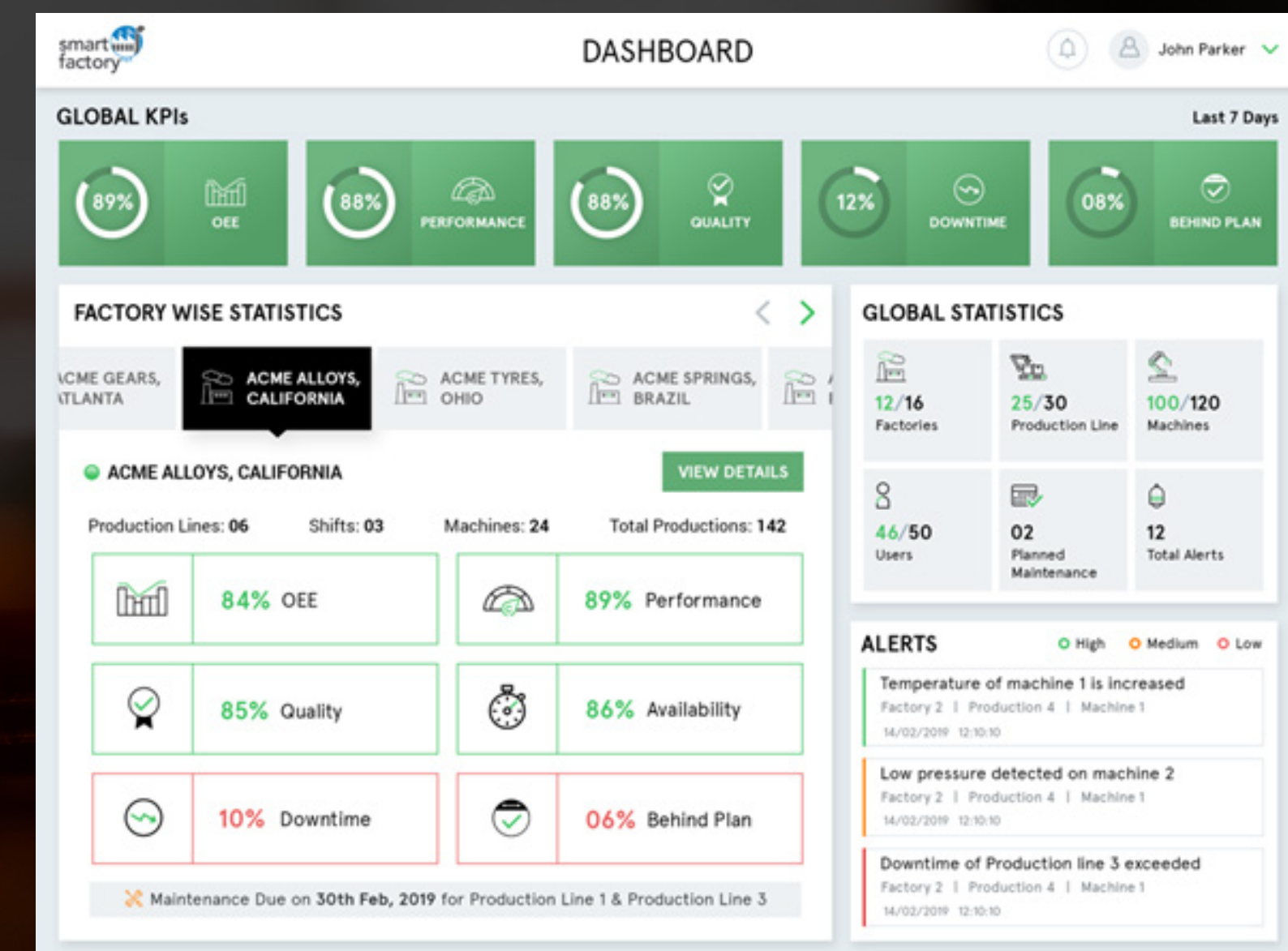
Reduced inventory /
material holding costs
by 11%



Increased throughput
by 23%



Gained nearly US\$1 million
in ROI in 90 days



Avnet + Microsoft

Partnering for powerful, reliable IoT

Avnet and Microsoft are building on a 20-year partnership. Deep integration with Microsoft technologies ensures that Avnet solutions meet stringent standards for quality, innovation, scalability, and security—from Windows IoT embedded licensing to Azure IoT, analytics, and data visualization, all the way to Azure Sphere secure connected MCUs. Learn more about our [integrations](#) and best-in-class, intelligent [security](#).

At Avnet, we take compliance and consistency of quality seriously and hold dozens of global third-party quality and environmental system registrations. [Learn more.](#)



Connectivity



Scalability



Powerful analytics



Artificial intelligence



Security and management

Start your simplified IoT journey today

Contact [Avnet sales](#).

Learn more about [Smart Factory](#) and [IoTConnect](#).

Request a [demo](#).

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