



Gen AI for real-time factory intelligence

Transforming operator productivity
with Cognizant's Factory Performance
Advisor (CPFA) on AWS

A new era of manufacturing is here - data-rich, AI-empowered, and operator-focused. The Cognizant Factory Performance Advisor (CFPA) is a generative AI-powered solution designed to revolutionize manufacturing operations at the operator level.

By leveraging real-time data and advanced AI algorithms, CFPA provides shop floor operators with actionable insights, predictive maintenance alerts, and troubleshooting support. This innovative solution, developed in partnership with AWS, enhances productivity, improves quality, and drives sustainable growth in manufacturing environments.

Solving today's manufacturing challenges

1 Operational inefficiencies

Reduce downtime, enhance asset utilization, and accelerate throughput

2 Quality control gaps

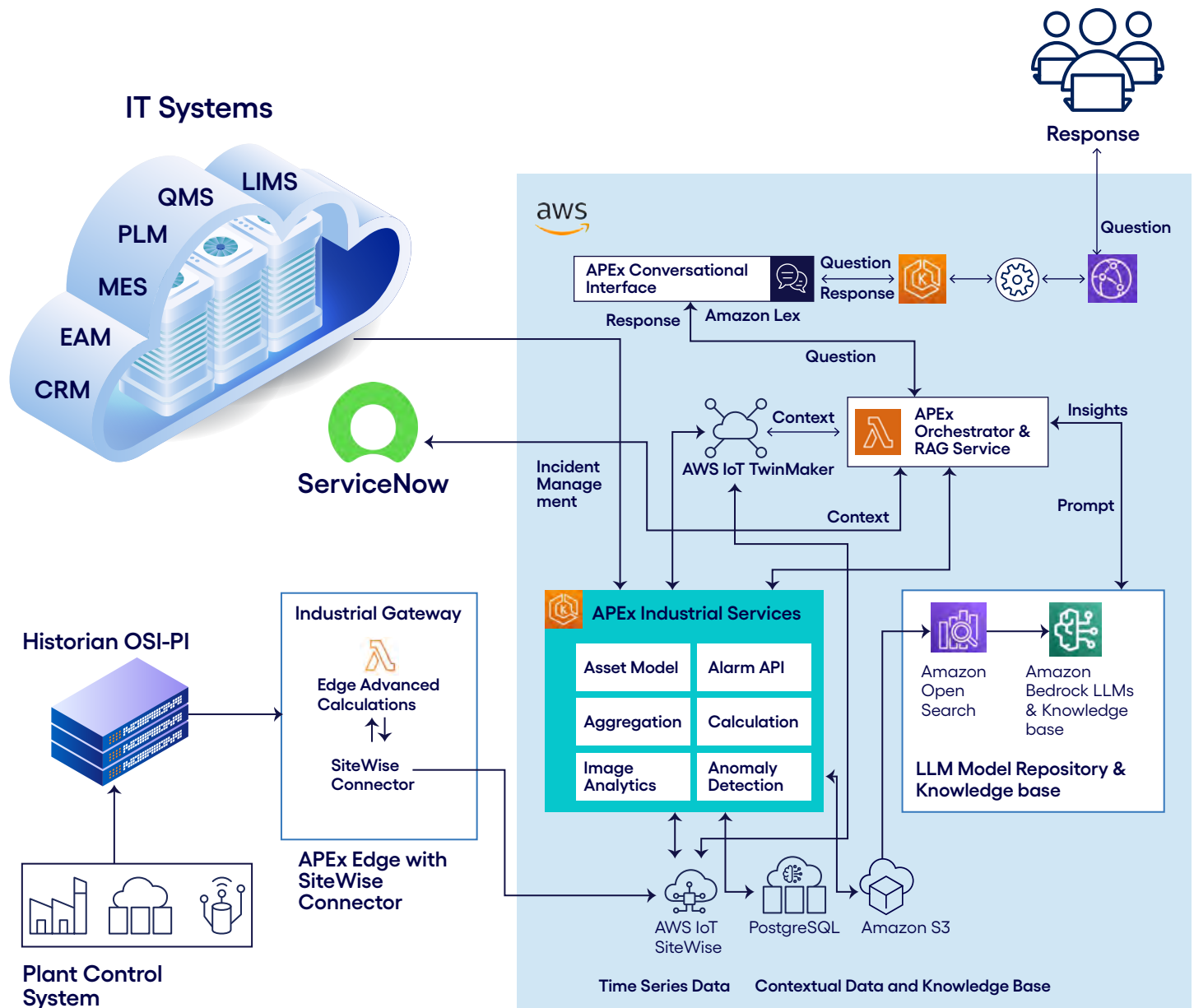
Minimize defects, ensure compliance, and optimize production processes

3 Workforce enablement

Analyze production metrics in real-time to ensure consistency and minimize defects



Solution framework



Key highlights

- Real-time insights and predictive analytics
- Conversational gen AI agent for troubleshooting and guidance
- Integration with diverse manufacturing environments

The future of factory performance is cognitive, predictive, and human-centric.

Cognizant's Factory Performance Advisor on AWS is designed to whisper insight, empower action, and drive excellence.

Use cases in action

AI that operates alongside you



Predictive maintenance

Anticipate failures before they disrupt your line — reduce unplanned downtime dramatically



Real-time troubleshooting

Offer instant, intelligent solutions to operators for resolving production issues



Quality assurance at speed

Continuously monitor and optimize product quality with AI-driven insights in real-time

Business impact

Increased uptime

Significant reduction in equipment-related disruptions

Higher yield, lower waste

Data-driven process optimization delivers measurable improvements in output

Leaner costs, increased profits

Reduced resource wastage, faster decision-making, and consistent quality deliver cost efficiencies

Real-world impact

Case study

Leading global biopharmaceutical company



Challenge

A multinational biopharma company struggled with **time-consuming, manual analysis** of historical work order data for maintenance remediation across plants.

New facilities lacked guidance as insights were buried in documents, requiring comparison with existing plant data, a manual process prone to overlooking critical information and hindering summarization, resulting in inefficiencies and sub-optimized operational costs.



Solution

Cognizant deployed a genAI-powered Retrieval-Augmented Generation (RAG) solution built for technicians at two plants. This agentic solution uses Langchain, AWS Bedrock, Databricks, and Claude Sonnet LLM.

Technicians now interact via a conversational chatbot, where RAG analyzes historical data for insights and delivers instant, data-backed maintenance recommendations.

Outcome

The smart Cognizant Factory Performance Advisor on AWS with gen AI-powered insights transformed factory operations across plants and facilities by optimizing resources and fostering efficiencies across the production line.

- **Speedy data-driven decision-making** based on insights and guidance in real-time
- **Standardized maintenance processes** with increased accuracy
- **Reduced manual effort and turnaround time** drastically save time and cost
- **Agnostic approach** makes the platform Integration-ready across diverse database systems

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**Transforming Operator
Productivity with
Cognizant's Factory
Performance Advisor
(CPFA) on AWS**

Connect with our
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**Learn more about Cognizant and
AWS partnership:**

<https://www.cognizant.com/us/en/services/cloud-solutions/aws-cloud/aws-smart-manufacturing-at-scale>



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