



Case Study: IoT/Manufacturing

Advancing smart manufacturing operations value with Industry 4.0 platform and IoT

North American tools manufacturer implements Industry 4.0 technology to realize efficiencies and increase productivity in its global manufacturing operations.

In industrial manufacturing, increasing productivity relative to fixed costs—plant, equipment, and personnel—boosts profitability. Today, opportunities to gain efficiencies are greater than ever, by integrating operational and digital technologies to create a unified view of intelligence that in turn boosts revenues.

At a Glance

A US-based Fortune 1000 industrial manufacturer chose Cognizant to develop and deploy an integrated IoT platform to drive Industry 4.0 across its global operations.

Outcomes

- Scale IIoT platform beyond pilot to connect 100+ facilities and thousands of machines and production lines
- Dashboards monitor asset performance and yield insights for decision-making
- Targeting \$100M+ in cost savings and profitability gains over a five-year period

Cognizant[®]

Toolmaker remakes itself

Cognizant was selected by a leading global tool manufacturer to re-envision manufacturing operations by advancing their Industry 4.0 program. Our client has multiple lines of business and two fundamentally different types of facilities:

1. Assembly lines with few pieces of equipment but these are labor intensive.
2. Machining facilities with complex, asset-intensive production lines.

The company has more than 100 factories worldwide, with machines varying in age and complexity. It faced limitations on communicating and coordinating between facilities. Our client knew it had a “greenfield” opportunity to transition cleanly to digital. Its objective was to create significant value in the next five years as it moves from a focus on efficiency improvements to an Industry 4.0 platform that promotes connectivity and digital visualization to create value. Targeted outcomes include improved accuracy in order fulfillment, lower production error rates, lower energy costs, and improved safety and compliance.

Success by design

Our blueprint for Industry 4.0 implementation was an integrated, cloud-based platform for gathering, analyzing and sharing information from disparate factories, increasing visibility and making resource allocation more efficient. Our client had various data-gathering protocols across its global footprint of facilities, including manual protocols. Management knew that by streamlining and consolidating data capture from production equipment and assembly lines, it could gain insight into its manufacturing processes and optimize them.

We inventoried equipment and production machinery worldwide, gauged readiness for instrumenting equipment and production lines with sensors and gathered meaningful information centrally. We created and retrofitted equipment with state-of-the-art wireless IoT sensors to allow for monitoring efficiency and up time, yield, and productivity measures for workers, assets and entire facilities, to understand how assets performed to ensure quality.

We then designed and deployed an IoT platform an “operational nerve center” to demonstrate the forecasted benefit of Industry 4.0 to management and manufacturing personnel, and implemented the platform at four plants in less than twelve weeks. This showed how cloud-connected and sensor-instrumented production devices would allow monitoring and flexible decision-making through analytics.

We then rolled out the solutions globally, establishing secure enterprise-wide connectivity without disrupting the business, creating a network of plants that respond quickly to changing needs using digital twins. Measures for OEE are now embedded in manufacturing processes, providing managers detail on asset availability and run-time, configuration and customization, scheduling, through-put and quality output, even down-time or maintenance needs. Real-time notifications and web-based user interfaces enable remote experts to collaborate with shop-floor personnel, empowering the company’s next generation of smart workers. Better asset use promotes efficiency and lowers energy use.

Right tools, right choice

Cognizant was selected to help our client implement their vision to develop a comprehensive solution to scale beyond the pilot and create business value. Our combined, deep capabilities in manufacturing operations and industrial automation, and our proven experience in large-scale technology implementations, were critical to our client’s success.

Our expertise in agile development allowed us to partner with our client’s development teams to implement state-of-the-art web-based user interfaces and collaboration tools. Teams across the globe are rapidly enhancing functionality using the Industry 4.0 reference architecture, a suite of software tools, prescriptive, reusable templates and protocols for realizing OEE. They are using robust, extensible information model to enable app development, analytics and reporting. A set of best practices are guiding more than 100 facilities across the company’s global network toward its new future.

For more information, visit www.cognizant.com/iot

About Cognizant

Cognizant (Nasdaq-100: CTSI) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 193 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us @Cognizant.



World Headquarters

500 Frank W. Burr Blvd.
Teaneck, NJ 07666 USA
Phone: +1 201 801 0233
Fax: +1 201 801 0243
Toll Free: +1 888 937 3277

European Headquarters

1 Kingdom Street
Paddington Central
London W2 6BD England
Phone: +44 (0) 20 7297 7600
Fax: +44 (0) 20 7121 0102

India Operations Headquarters

#5/535 Old Mahabalipuram Road
Okkiyam Pettai, Thoraiyakkam
Chennai, 600 096 India
Phone: +91 (0) 44 4209 6000
Fax: +91 (0) 44 4209 6060