



Cognizant

Solution Overview

Cognizant OnePlant™

How to pivot your silo-based manufacturing operations to a more integrated framework capable of dealing with new requirements for mass customization.

March 2019

Are your manufacturing operations ready for mass customization?

Industry 4.0 is going to revolutionize manufacturing. Are you ready to go digital and transform your enterprise?

The world of manufacturing has been transformed by the fourth industrial revolution.

Industry 4.0 provides a blueprint that manufacturing operations can follow for digital transformation that focuses on advanced technologies and architectures including cyber-physical systems, robotics and AI. The challenge for traditional manufacturers is how to retrofit these 'Industry 4.0' operations strategies and business processes to organizational structures based on silos, with little integration between operational technology, IT, and business units.

New entrants are meeting growing requirements for mass customization, and reducing capital and operational expenditure, by leveraging technology trends such as 3D printing, sensors, robotics, machine learning, and artificial intelligence.

Product feature, function, availability and support is being driven by an on-line retail mentality where customers:

- Want the product now
- Want it built to their exact requirements
- Insist it's available at wholesale prices
- Don't expect it to break (and if does, expect it to be replaced at no cost)
- Expect it to be intuitive to use
- Easily customizable
- Completely automated

These demands are almost impossible for traditional manufacturing models to satisfy. Operating models need to be recast, by leveraging new technologies and reimagining business processes to provide a seamless client experience across all aspects of the value chain.

Traditional manufacturing operations are designed to support mass production of similar products. This cookie-cutter approach has typically resulted in the creation of deep silos dedicated to a single aspect of production. The manufacturing systems these silos are dependent on were not designed with interoperability in mind, limiting the flow and integration of data.

The results, all too often, are:

- Unexpected downtime of equipment and machinery
- Increasing operational costs
- Unanticipated product line issues and the inability to quickly implement change orders
- Little capacity to control or eliminate product and process defects
- Problems in collating data for decision making
- Poor visibility of operations on the factory floor

Fixing these challenges calls for a holistic approach from Cognizant.

Intelligent manufacturing

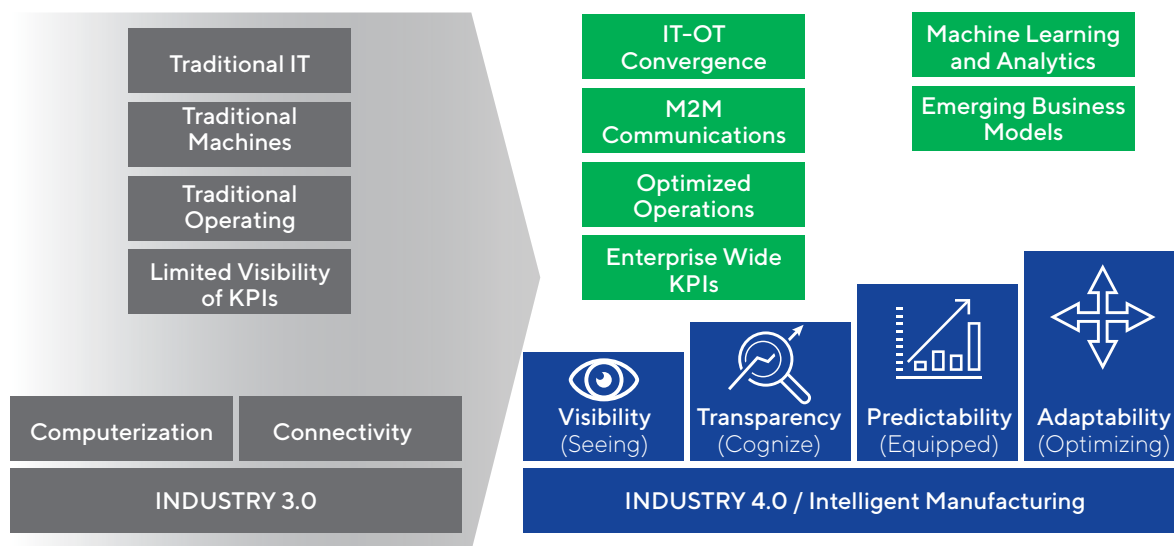


Figure 1

Lead the revolution

Traditional manufacturing operations cannot be transformed overnight, nor should they be. You should consider a structured approach to transformation, which allows you to gradually integrate aspects of your business that will result in more agile and productive operations.

Cognizant OnePlant™ is a framework that enables manufacturers to achieve unified operations by aligning and integrating: operational technologies on the factory floor with IT systems, supporting business processes and organizational models.

Our team of smart manufacturing experts will work with you to:

- Define a transformation roadmap
- Select systems and products
- Implement the solution
- Enable user adoption and change management
- Provide total care during deployment as well as ongoing production support

OnePlant can be tailored to your existing operations and fit into your businesses current phase on its smart manufacturing journey, including enterprise resource planning and manufacturing execution system rollout, integration, and access.

Implementation of the framework enables the integration of supply chains with products and services, creating a cyber-physical system with information, not data silos, to support predictive, agile operations and informed decision making. All this will help lower operational expenditure and provide insight to capital expenses and risk based on actual, consolidated factory floor data, delivered in real time, integrated and analyzed within operational support and engineering systems.

Reduce operating costs

Technological integration that improves efficiencies and reduces operational disruptions will reduce your operating costs. What is more, with continuous improvement in processes and management, reductions will occur year on year.

Improve asset productivity

Thanks to self-monitoring and predictive maintenance through machine learning, automation, and artificial intelligence, your staff and your machinery will become more productive.

Increase staff motivation

Moving to Industry 4.0 with our help will have benefits for your entire staff. Improved skillsets, better employment opportunities, greater employee satisfaction, and higher staff retention will be some of the effects for employees working in a new technology paradigm.

Get greater flexibility

Cognizant OnePlant™ will provide improved ability to address fluctuating customer demands, identify and exploit market opportunities, and develop new products and services, all based on expanded information networks. This increased agility and flexibility will give your business a true competitive edge.

Boost margins and value

Customization and demand-driven product strategies will allow your business to give customers what they want at a lower production price. That added value allows you to charge more than for standardized products, ensuring higher margins.

Make gains quicker

Cognizant OnePlant™ gives manufacturing operations access to a new weapon: information. This information can be used to launch new service or product lines and create partner ecosystems using a different, non-traditional, and potentially lower capital expense model.

The difference is delivery

When deciding to transform your business, you not only need outside expert help but also the confidence that it can be trusted. Cognizant is uniquely placed to be your transformation partner. We are an experienced global systems integrator with a specific knowledge of the manufacturing space.

Our in-house resources, including our knowledge base, are unmatched. Our team has a proven track record of successful deployment, utilizing the tried-and-trusted OnePlant framework, and PACE methodology. Where others promise you Industry 4.0, we deliver.

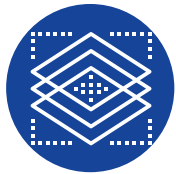
Cognizant smart manufacturing in action



Client challenge

A pharma major with 15 manufacturing sites across the globe and a diverse IT landscape wanted to shift its business strategy by moving from large-volume products to a higher number of low-volume products. Its goals were to:

- Reduce new product introduction cycle time
- Focus on business and operational excellence to drive margins
- Move towards modular and disposable technologies for manufacturing
- Pioneer newer technology in packaging and devices



Our solution

Cognizant developed a four-year roadmap for manufacturing IT that improved business efficiencies for the client and helped the shop floor to move towards a proactive and predictive control model. The process involved:

- Assessing the state of manufacturing processes and systems, establishing the maturity of key functions
- Benchmarking the maturity of business functions with other pharma organizations
- Analyzing best practices and future needs to identify gaps and improvement opportunities
- Performing a cost-benefit analysis to quantify potential benefits
- Advising on future strategy roadmaps for manufacturing IT



Business outcome

Cognizant developed a four-year roadmap aimed at improving 14 key result areas, providing cost savings of \$5 million per year per site in the areas of production, quality, maintenance, inventory, recipe management, key performance indicator management, and governance. Per-year savings included:

- \$1.3 million in scrap and rejects
- \$7,500 in paper and printing
- \$1.68 million in batch reviews and release times
- \$780,000 in recipe authoring time
- \$1.08 million in testing and validation
- \$210,000 in deviations and non-compliance
- \$75,600 in manual data entry time for perfect Index calculations

Business advantages in brief

What challenges does your company face?

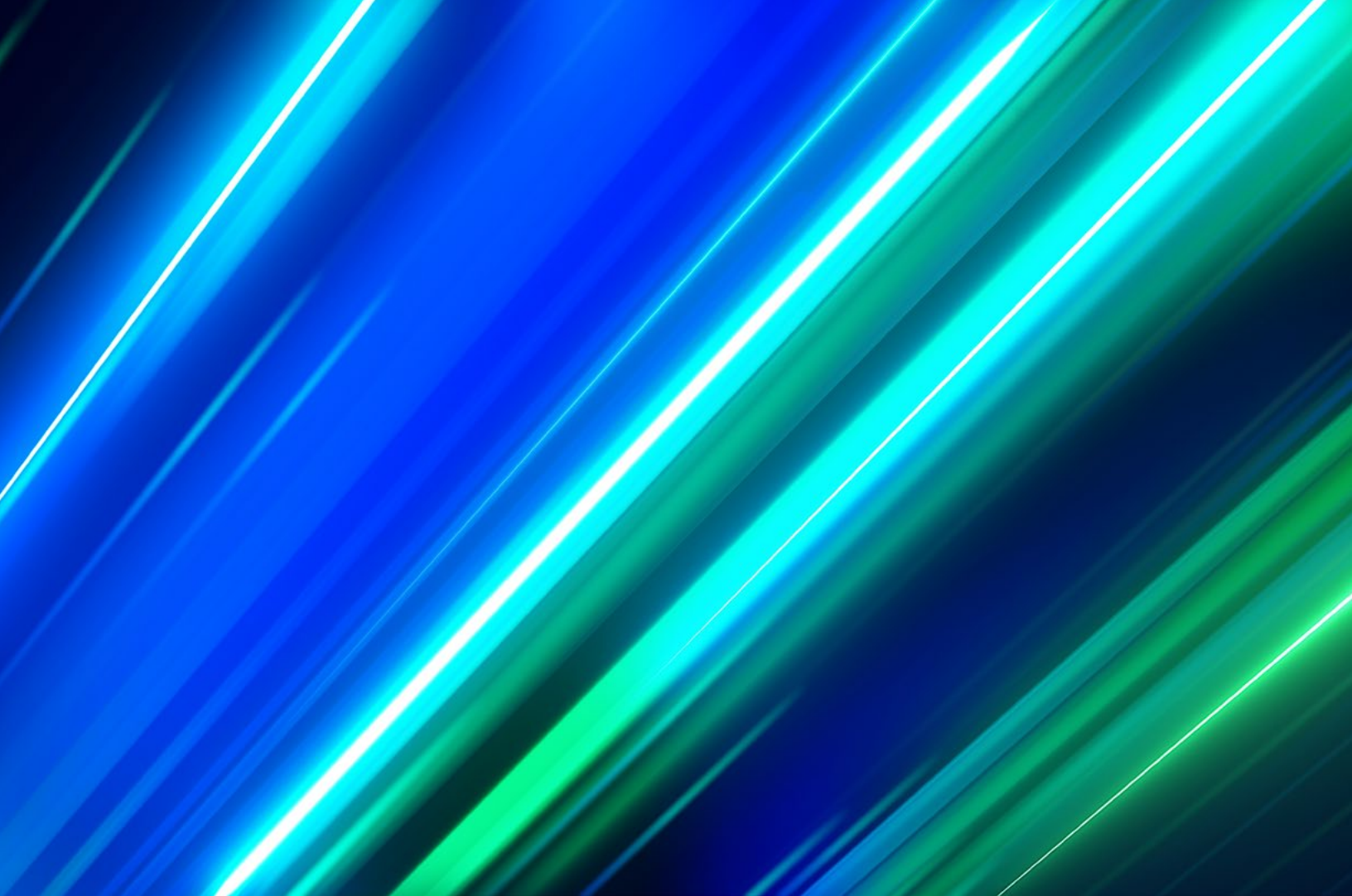
Through the orchestration and optimization of manual and automatic procedures and processes, both inside factories and across the entire value chain, the Cognizant Smart Manufacturing Solution will help you:

- Lower annual operating costs year on year
- Improve operator and asset productivity
- Enhance employee motivation
- Get greater agility and flexibility
- Respond to customer demands
- Boost margins and added value
- Achieve greater monetization

Lets get started

The next industrial revolution is starting right now.

If you would like to know more about how your business can benefit from it, please write to oneplant@cognizant.com or manufacturing@cognizant.com.



About Cognizant Manufacturing

Cognizant's Manufacturing and Logistics business unit operates as a trusted partner to global manufacturing leaders, helping them accelerate business performance in the digital world. The unit is recognized for its forward-looking approach by industry gurus, such as IDC MarketScape, which bestowed on it a "Leader" rating for service lifecycle management. Our business consulting professionals ensure that manufacturing and logistics clients receive exceptional business results from their technology investments and sourcing programs. Our domain solutions leverage digital technologies to build smart products, connect with digital consumers, provide real-time visibility into manufacturing operations, and automate knowledge work with cognitive computing. Learn more at www.cognizant.com/manufacturing.

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.

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