



## Solution Overview

# Connected Things

How to redefine next generation product development that creates high-quality, connected things faster – while controlling costs and delivering on customer demands.

## Technology disruption combined with rising customer expectations are transforming products at a rapid pace.

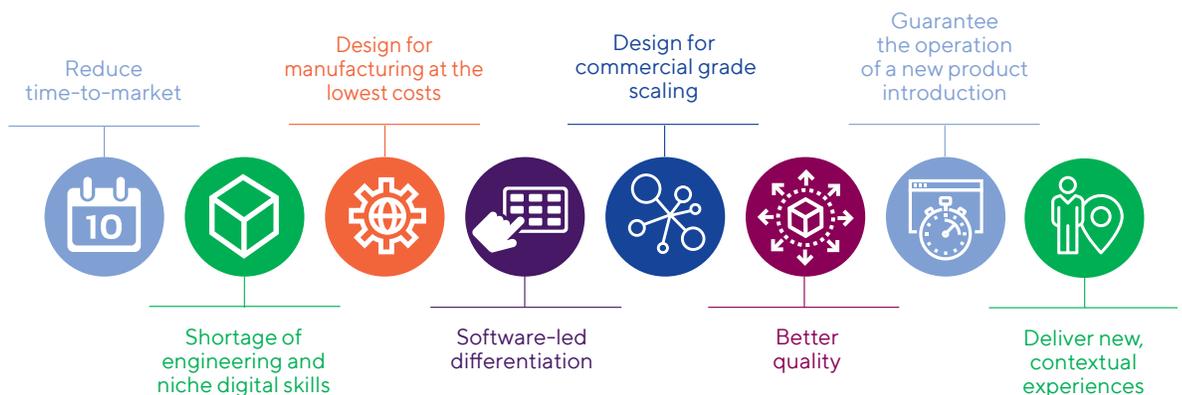
Is your organization ready to adopt new disruptive requirements to meet the demand?

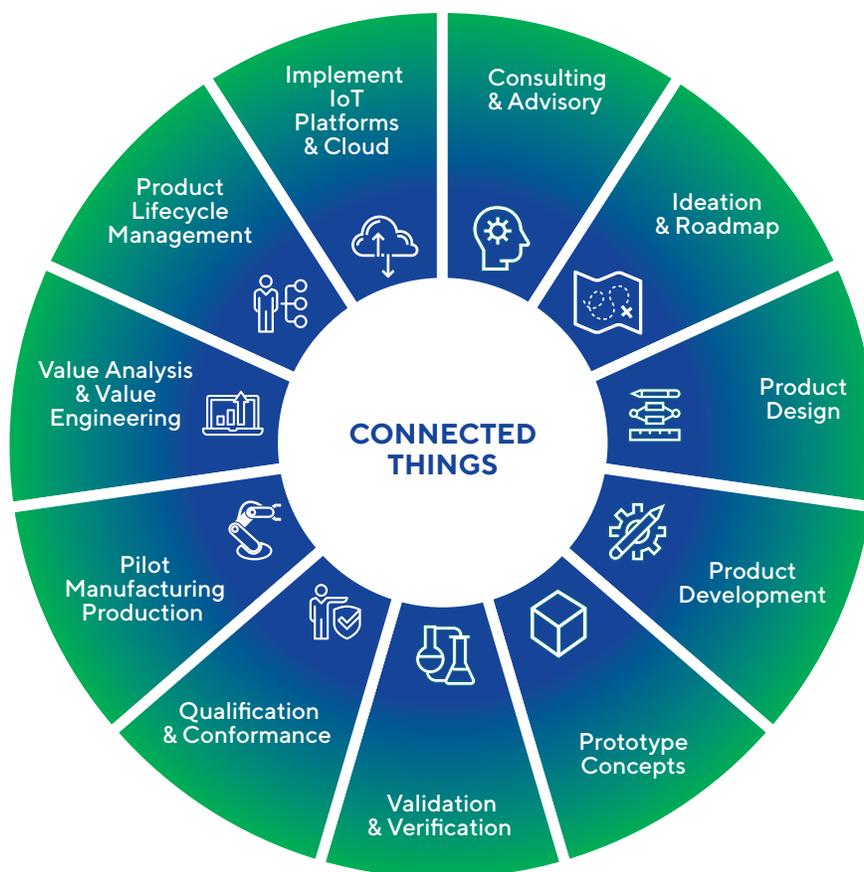
Today's digital economy coupled with rising customer expectations has increased the complexity of introducing new, smart-enabled products to market. Business, R&D, and Marketing leaders are equally pressured to adapt to next generation models that address this growing list of challenges:

- ❑ **Reduce time-to-market** with new products or augmentations, due to shorter product shelf life.
- ❑ **Shortage of engineering and niche digital skills** with the increase of disruptive technologies.
- ❑ **Design for manufacturing at the lowest costs**, while building sleeker, faster and sustainable products to meet local needs.
- ❑ Threat of new entrants demanding for **software-led differentiation**.
- ❑ **Design for commercial grade scaling** and disruptive business models.
- ❑ **Better quality** with minimal to no defects.
- ❑ **Guarantee the operation of a new product introduction** in its prescribed operational condition and environment.
- ❑ **Deliver new, contextual experiences** with more features (usability and operability) for end users.

Now more than ever, organizations must recognize the need to redefine their product development models for the digital era. The ever-changing technology landscape and resulting complexities have increased the threat of product obsolescence and brought "future-proofing" sharply into focus.

Fixing these challenges calls for a new approach from Cognizant.





## Our approach to deliver value

We offer flexible solutions to help your organization keep pace with today's changing marketplace and achieve greater profitability through reduced costs, while meeting customer and operational demands.

Cognizant's Connected Things provides turnkey product design and development solutions for the digital era – from insights to design, from development to qualification, from product management to pilot production.

We engage with you to extend your capability across the entire product lifecycle. Our mission is to help organizations globally deliver business results through increased enterprise capability.

At Cognizant, we offer you the capability to:

- Deliver on faster product introduction from years to months.
- Improve higher quality products with reduced defects.
- Reduce 5–10% in product development costs.
- Certify and guarantee the operation of a new product introduction in its prescribed operational condition and environment.
- Create stellar end-consumer product satisfaction with more features, at a lower cost.

## Our solution

Cognizant's Connected Things solutions offer companies:

- **Consulting and Advisory.** We help you define the next generation of products, conduct market analysis on preferences, assess the competitive landscape, analyze potential financial outcomes in target markets, regions, or demographics.
- **Ideation and Roadmap.** Work with our Idea Couture team to envision the "art of the possible" through human centric ideation workshops. Then, we can define a product roadmap for these concept(s).
- **Product Design.** Design new products on paper to prototype, while cutting costs, and shortening time-to-market.
- **Product Development.** Build products with our end-to-end capabilities in electrical, firmware, hardware, software, mechanical, and applications.
- **Prototype Concepts.** Visualize beyond the idea on paper. Ship a product with basic features in less than 9 months.
- **Validation and Verification.** Certify the product is compliant to the requirements for quality and reliability.
- **Qualification and Conformance.** Ensure the product conforms to various industry standards.
- **Pilot Manufacturing Production.** Conduct a small quantify production pilot.
- **Value Analysis and Value Engineering.** Analyze a product and identify cost optimization opportunities or uncover new enhancement functionalities and features of a product.

### THE PATH FORWARD:

# Develop Robust Capabilities in Brownfield and Greenfield

## Brownfield

Are you responsible for maintaining a manufacturing plant or remote physical equipment? Cognizant can help you retrofit the design of legacy equipment and bridge the digital gap to connected isolated modern equipment for improved efficiencies.

## Greenfield

Do you envision your manufacturing operations to produce faster, with more flexibility, efficiency, and reduced downtime? Our team has the experience and proven track record to design Internet of Things solutions for the manufacturing shop floor.

## CASE STUDY

# Build and Deliver High Quality Products at High Speed

A global diversified company was losing market share to its competitors with their controller's product line. The 24-month new product introduction was too long and competitors were positioned as the "first mover advantage." The client engaged Cognizant to reduce time-to-market and product costs. Our team first analyzed the product into its constituent components to understand how and why their competitors were able to introduce similar products faster. We then determined how and where to produce the product at optimized prices. Based on the analysis, three variants of the product were re-engineered. Product re-engineering included hardware design, mechanical enclosure design,

certification compliance, pilot production and support, and testing. The product received UL, CE Certification for the European and American markets. After the pilot production was completed in India, we transitioned this design to their manufacturing facility for production.

## Outcomes

- Reduced time-to-market from 24 months to 9 months.
- Met UL, CE certification and compliance in multi-region markets.
- Redefined the product development process.

- **Product Lifecycle Management.** Integrate people, data, and processes for the best delivery of a product.
- **Implement IoT Platforms and Cloud.** Use applications with your products powered by IoT and cloud technologies.

## Our value to your business

Cognizant, with its proven technology expertise and strong pool of technical and functional consultants, and engineers has been able to fulfill the demand for delivering solutions that have transformed standalone, single function devices into converged, feature rich, complex, upgradable, network-connected smart products.

We can help you prevent failures before you go into production, identify performance issues, continuously validate and verify design, adhere to compliance standards and regulations, maintain design integrity and ensure software is always up-to-date.

Implementation can accelerate the introduction of new products and enable the integration of data from products in the field. In design, we can redefine how your company predicts performance and consider alternatives for manufacturability and engineering tooling.

All this will help lower operational expenditures and provide insight to capital expenses and risk based on actual, product data, delivered in real-time, integrated and analyzed within operational support and engineering systems.

## CASE STUDY

# Early Detection of Defects Is Driving Force Behind Better Safety

A global automotive manufacturer was rapidly adding greater electronic functionality to its vehicles to meet consumer demands. To speed the rollout of its new features, the company had to replace a costly, time-intensive manual approach to validating the performance of electronic parts. The manufacturer partnered with Cognizant to overhaul its testing process, implementing our proprietary Hardware-in-Loop Automation Test Suite (HATS) framework. Our accelerator facilitates real-time measurements, automated reporting and defect tracking for closure at the vehicle's pre-production stage. Finding

more defects and finding them sooner, enabled the engineers to resolve these issues long before a vehicle goes to production. Early detection means resolution is simpler and faster, lowering costs and resulting in a safer, higher quality product.

## Outcomes

- 200% increase in validation coverage productivity.
- 4 months to realize return on investment.
- 5 times more defects found, 4+ months earlier.

## Business value delivered

### Superior Quality and Speed

Use agile approaches and integrate architecture and design modeling, as well as proven frameworks for simulation, testing and quality management. Reuse components to improve efficiency of the product line.

### Lower Product Costs

Increase visibility into the risk of release, performance, overall shift to data-driven decisions. Improved consistency, increased utilization of assets and re-use, while reducing operating costs.

### Increased Agility

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

### Improved Margins and Value

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 for standardized products, ensuring higher margins.

### Better Experience

Increased value derived with delivering new experiences in features via usability and operability. Enhanced pro-active engagement with end users and enablement of closed-loop feedback based on connected insights.

## The Cognizant advantage

When deciding to transform your products, you not only need outside expertise you also need the confidence that it can be trusted. Cognizant is uniquely placed to be your partner.

We are an experienced global systems integrator with a specific knowledge of the product design and development space. Our in-house resources, including our knowledge base, are unmatched.

**Proven Track Record.** Our 2,500 professionals complement the full-stack of digital, engineering technical architect skills and have delivered countless product design and development detailed implementations delivering record-breaking results.

**Partnership Ecosystem.** Our team can bring together the best-of-breed technology stacks to power the entire product development value chain.

**Engineering Labs Accelerate Innovation.** Throughout the world, we have 10+ customer co-labs and labs to rapidly engineer new solutions for: industrial automation applications, wireless, video, radio, medical devices, SDN NFV, hyper-scale computing, and emerging technologies. Our Cognizant Collaboratory – global centers’ to conceptualize ideas and prototypes – help our clients’ envision the “art of the possible.”

**Recognized Leader in IoT, PLM and Product Engineering Services.** In 2018, Gartner, IDC, Forrester, HfS, and ISG industry analysts recognize Cognizant among the world’s leading service providers in IoT, PLM and Engineering. From 2016–2018, the team has received nearly 30 accolades for depth and maturity of services, innovation and IP, ecosystem linkages and customer confidence.

### CASE STUDY

# Reducing Mission Critical Product Defects & Improving Time-to-Market

The industrial manufacturer was looking for a partner to scale their engineering team in an effort to reduce the development total time-to-market lifecycle, costs, defect backlog and improve operational efficiency. Cognizant’s engineers worked alongside the client to develop, test, and maintain more than 70 of their mission critical products for: field devices, distributed control systems, SCADA, safety systems, HMI systems, operations management, and asset management. We also worked together to deliver on more than 100 R&D initiatives. Due to our trusted relationship, we are responsible for providing maintenance to 85% of our client’s products,

resulting in greater availability of funding and bandwidth for new product development.

#### Outcomes

- Reduced defect backlog by 61%.
- Cut defect inflow by 30% over 5 years.
- Year-on-year productivity increase due to replacing traditional waterfall model with lean, agile software execution methodology.
- Reduced IT spend by 50%.



## Connect with us

The business opportunities with Connected Things are endless. Begin today to leverage the power of digital and launch innovative products faster, drive operational efficiencies at scale, create an ongoing relationship with your customers, and underpin new business models. Contact us at [www.cognizant.com/enterprise-iot-solutions](http://www.cognizant.com/enterprise-iot-solutions).

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### 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 195 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](http://www.cognizant.com) or follow us @Cognizant.

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