

# Devices and Silicon Product Innovation and Design Services

Communications, Media & Technology



NextGen devices such as smart watches have made life easier with ubiquitous connectivity. Increasingly, devices are expected to sense, process, collect, analyze, and take quick, intelligent decisions. This has led companies to focus on IoT, wearables, set top boxes, drones, and robotics. However, all these devices need to function in unison, which underlines the importance of interoperability and integration. Further, manufacturers need to address growing constraints on size, form factor, power, processing, security, and cost of smart devices.

Tata Consultancy Services' (TCS') Devices and Silicon Product Innovation and Design Services are based on our extensive experience in concept-to-manufacturing services across semiconductor and devices. Our expertise across technologies and domains enable us to provide insights into key business dynamics. We partner with OEMs and semiconductor manufacturers to co-innovate and co-create products, and create reliable and efficient ecosystems that meet the needs of the new interconnected world.

## Overview

In our connected world, device manufacturers need to continuously innovate to meet growing consumer demands. This entails compressing more computing capabilities into ever-decreasing sizes and form factors. To remain competitive, companies need to evolve and provide comprehensive and differentiated solutions, encompassing security, user experience, analytics, and cloud, which require new competencies beyond silicon design, hardware engineering, and manufacturing. This makes it imperative to develop collaborative partnerships across the entire value chain from silicon manufacturers to handset vendors.

TCS' Devices and Silicon Product Innovation and Design Services leverage our vast experience in the semiconductor and devices space. This enables us to support manufacturers from silicon design through the complete product development lifecycle. With services that span low power IoT devices, gateways, smart phones, wearables, set top boxes, drones, and robotics, among others, we enable them to provide differentiated customer experiences. Our services rapidly bring innovative engineering, superior execution, and service excellence into their new product introductions. We leverage our partnerships with electronic manufacturers, OEMs, and semiconductor vendors to consistently deliver new ideas and innovative solutions.

## Our Solution

TCS' Devices and Silicon Product Innovation and Design Services include the following segments:

- **Consumer Electronics:** Provide hardware and software product engineering and manufacturing services in operating systems, platforms, and products
- **Semiconductor Engineering:** Offer Very Large Scale Integration (VLSI) services in Application-Specific Integrated Circuit (ASIC), Field Programmable Gate Array (FPGA), and System on Chip (SoC)
- **Enterprise Devices:** Deliver Point of Sale (POS) terminals, concierge devices, enterprise unified communication devices, and barcode printers and scanners
- **IoT, Drones, and Robotics:** Develop innovative products in sensor device management, smart connectivity management, flight navigation and control, power optimization, and cloud and advanced analytics
- **Connected Home Appliances:** Focus on energy management, remote monitoring and diagnostics, and home automation
- **Industrial Electronics and Automation:** Increase plant productivity with TCS' integrated engineering in electro mechanical and embedded design and validation, integration of control systems and industrial automation protocols enabling products and systems for remote diagnostics through M2M.



## Benefits

TCS' Devices and Silicon Product Innovation and Design Services for semiconductor and smart devices help customers with following benefits:



Enhance the experience with differentiated products



Harness data driven insights derived from connected ecosystems



Increase business agility with reduced product development timelines



Achieve enhanced product quality with NextGen technologies



Generate additional revenue streams with product launches in new markets



Innovate and launch competitive and relevant offerings

## The TCS Advantage

With over 25+ years' experience, companies benefit from our extensive product engineering engagements in developing solutions and building capabilities. We have dedicated device characterization laboratories to measure semiconductor devices and have invested in FPGA, VLSI, and Microelectronics innovation labs to develop and test embedded systems. Our Centers of Excellence (CoE) in the areas including IoT, wearables, drones and user experiences (UX) help overcome challenges in this industry and stay on track with the constantly changing technological landscape.

TCS has established enduring partnerships with OEMs, handset equipment and semiconductor manufacturers, original design manufacturers (ODMs), and electronic vendors to consistently develop innovative solutions. Our manufacturing facilities rapidly prototype, volume manufacture, and ensure product sustenance to help manufacturers optimize their product development costs. Our fully automated benchmarking framework accelerates high performance product design, and helps collect and analyze complex data to quickly uncover and fix critical design limitations. We offer end-to-end product engineering capabilities across smart devices and semiconductors with over 10,000 engineers extending our reach to customers across the world.

## Awards & Recognition



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### About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

### IT Services Business Solutions Consulting

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