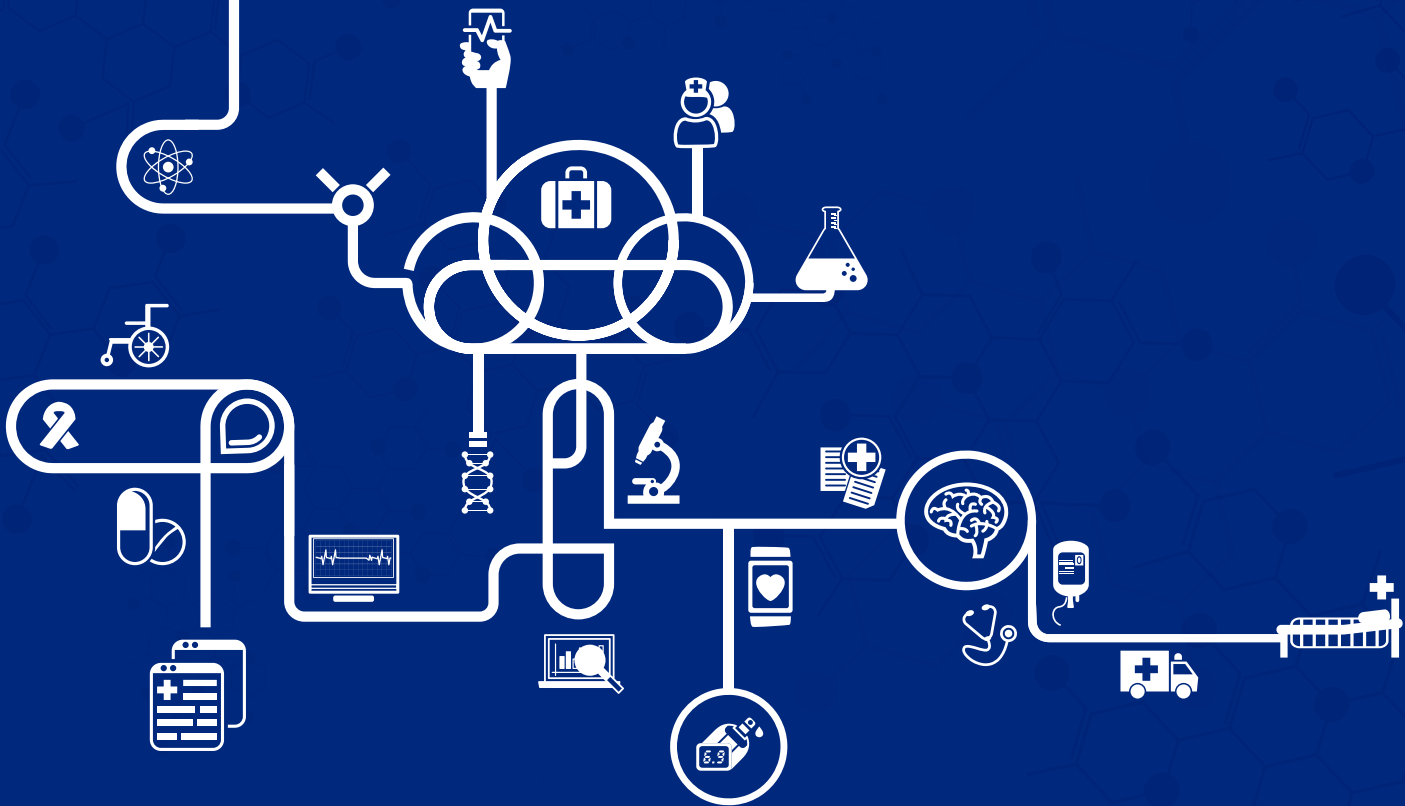


ENABLING 21ST CENTURY HEALTHCARE

CONNECTED | EFFICIENT | INTELLIGENT | PERSONALIZED



HCL ERS MEDICAL ENGINEERING SERVICES

21ST CENTURY
TECHNOLOGIES

HCL IN THE MEDICAL INDUSTRY

15+ years of experience in medical devices alone. Several complex mission-critical electro-mechanical products developed from concept to launch

Mature project and risk management processes with **QMS** confirming to **FDA** regulations audited by the world's leading medical **OEMs**

A partner to **9 of the top 10** medical devices companies

Engineering Partner to Johns Hopkins University



Largest medical device practice among Indian outsourcing providers

Partnerships with institutes such as Human Factor International, IITs, IISCs. Participant in Confederation of Indian Industries (CII) committee on regulatory guidelines for medical devices in India

Involved in the development of **100+ devices**

THE HEALTHCARE INDUSTRY **TODAY**

Across the globe, governments, health care delivery systems and consumers are engaged in a persistent tug-of-war between two competing priorities - meeting the increasing demand for health care services and reducing the rising cost of those services. Global healthcare is being driven by the health needs of aging and growing populations, the rising prevalence of chronic diseases, emerging-market expansion, infrastructure improvements, and treatment and technology advances. Innovations changing the landscape of the healthcare Industry are bringing the Patient at the Center of Healthcare Ecosystem.

Designed and developed a complex drug delivery system for Class III medical devices. FDA submission done in 28 calendar days

Designed and developed CSF shunt (Implantable miniature mechanical valve), end to end ownership. Reduced time to market by 25%

Value Engineered a Patient Monitoring Device. Cost reduction of 28%

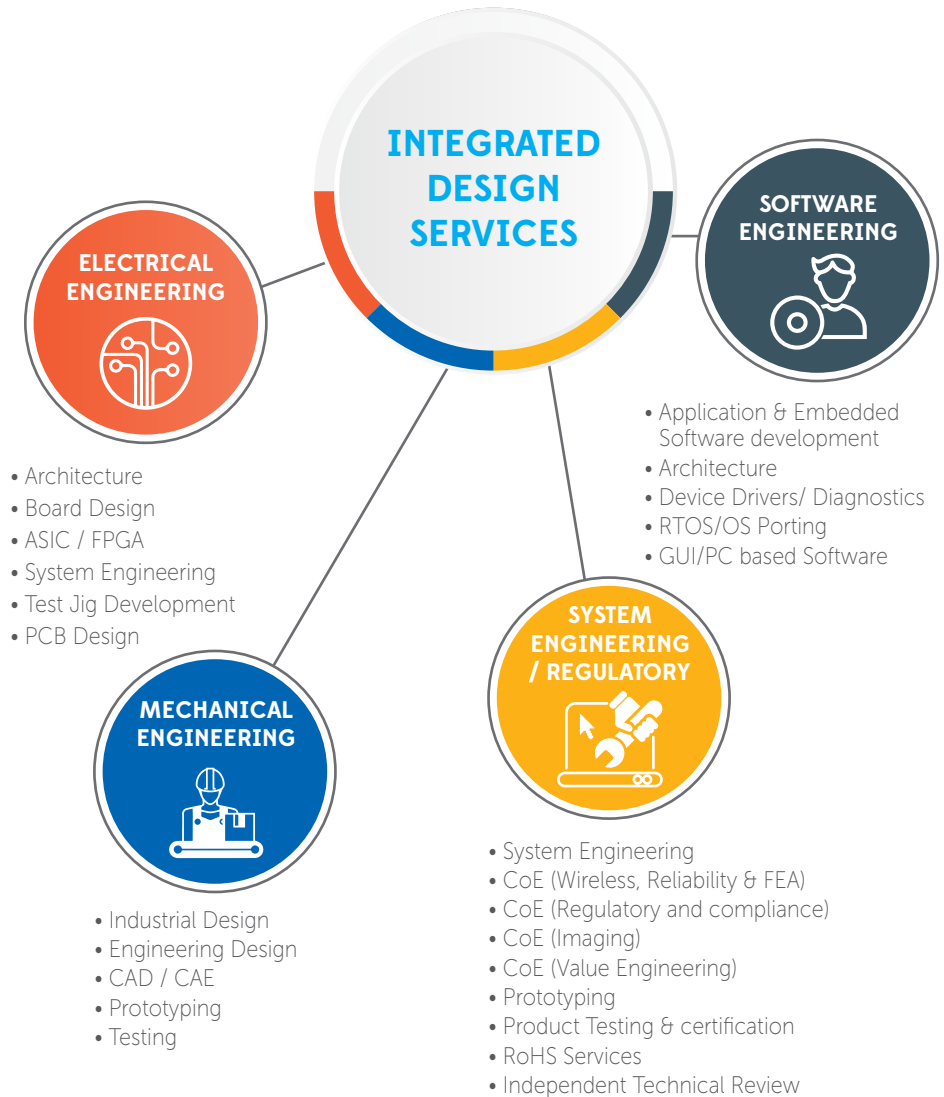
Designed and developed an Endoscope Disinfection system. 510(K) approved-over 500 installation

New Product Development of Class III Implantable Pump. 50% timeline saving; 30% cost saving; Implanted in 450+ patients

Reengineering of Myocardial Protection System for cost, size optimization and new features. 510(K) approved

▲
**EXPERIENCES
WE ENGINEER
FOR OUR CUSTOMERS**

INTEGRATED DEVELOPMENT FOR MEDICAL DEVICES



Compliant to 21 CFR Part 11, 21 CFR 820, SW: 68/IEC 62305:2006, IEC-60601-1-2-3-4, SHA, HL7 and DICOM processes



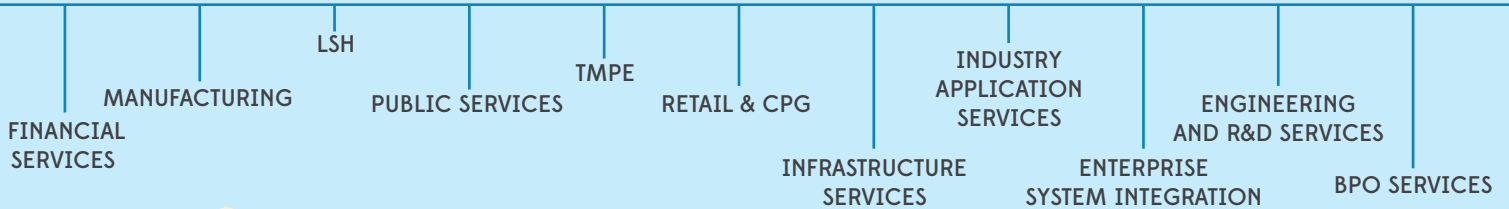
Mature and robust quality management systems compliant to ISO 13485, 21 CFR Part 820, 21 CFR Part 11, IEC 62304, ISO 14971, CMMI Level 5 & ISO 27001 processes

PRODUCT ENGINEERING EXPERIENCE ACROSS THE LIFECYCLE

NEW PRODUCT DEVELOPMENT & LAUNCH			Active Product Support	End-of-Life Products
Concept /Idea Generation	Design & Development	NPI Implementation Manufacturing		
Market Requirements	Architecture Design	Design to SCM Integration	Sustenance	Re-engineering
Functional Specs	H/W Design	PCB Layout & DFX	L1/2/3 Technical Support	Value Engineering
Usability	S/W Design	Diagnostics	Engineering Change Management	Porting
Mock-ups	ME Design and Electronic Packaging	Test Engineering	Globalization / Localization	Migration
Preliminary Proof-of-Concept	Full Design Implementation	Reliability & Risk Analysis	Regulatory Compliance (RoHS/WEEE)	Modernization
	Verification & Validation	Mechanical Design, Analysis and Prototyping	Tech Pubs	End-Customer Support
	Hardware & Software Integration	Environmental Screening		
	System Bring-up	Transfer of Technology		
		In-house Low Volume Mfg		
		EMS tie-ups for Medium & High volume mfg		

HCL - A \$7 BILLION GLOBAL ENTERPRISE

HCL Technologies brings IT and engineering services expertise under one roof to solve complex business problems for its clients. Leveraging our extensive global offshore infrastructure, network of offices in 32 countries and 116,000 employee base, provide holistic, multi-service delivery in industries such as financial services, manufacturing, consumer services, public services and healthcare. HCL's 38 year journey has been truly transformational.



\$1 BILLION IN NET PROFIT

\$5 BILLION IN REVENUE

\$15 BILLION IN MARKET CAPITALIZATION

**WE ARE AMONGST THE ONLY EIGHT
21st CENTURY COMPANIES TO ACHIEVE ▲**

HCL ENGINEERING AND R&DSERVICES IS BUILDING 21ST CENTURY TECHNOLOGIES

Organizations today are experiencing an unprecedented phenomenon. In the previous century, a company would remain listed as a Fortune 500 company for about 60 years. Today, they stay in that list for less than 18 years! Corporate profits are shifting to asset-light idea-intensive sectors. Emerging-market giants are gaining global scale; with the share of US and Western European companies in the Fortune 500 falling. Asset light technologies are creating more incremental value creating the need to pivot to service R&D. Firms with large legacy product R&D organizations will have to transition in a non-disruptive way. Kick starting Service R&D organization will need extensive collaboration. Thus, engineering spend is going to change drastically in the coming decade.

HCL with its engineering heritage, global presence, cumulative revenue impact and being the largest and fastest growing engineering services provider from India is ideally placed to transform your enterprise.

CUSTOMER CENTRIC
Design Centric, Accessible, Innovative

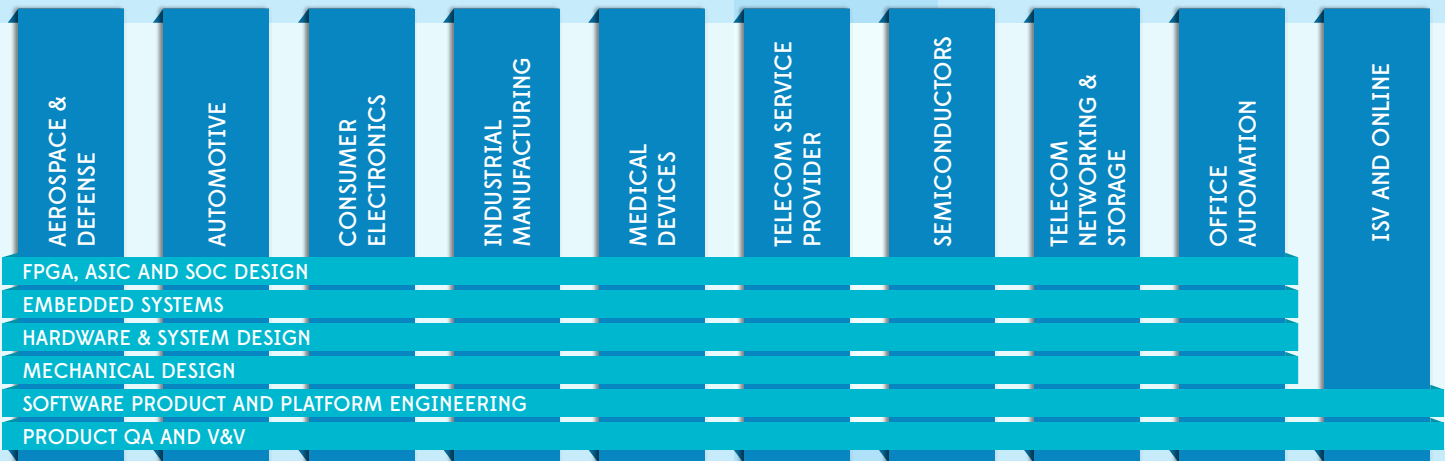


AGILE
Platformized, Continuously Released, Data Driven

The face of 21st century technologies will be **Customer Centric** - in terms of design centrality for industrial and UX design, accessibility & innovation as a service ; **Agile** - in terms of e-business platforms, DevOps framework and engineering analytics; **And Efficient** - in terms of Support & test automation, Value engineering and intelligent sustenance.

EFFICIENT
Automated, Frugal, Sustained

HCL ERS has been instrumental in engineering multiple products for 300+ customers across 10 industry verticals. Our engineering services straddle the entire product development lifecycle from new product introduction to end of lifecycle.



~\$ 50 Billion product revenue enabled over last ten years for our customers

Industry leading recognition by Gartner, Forrester, IDC, TBR and Frost & Sullivan

1250+ patents filed, \$20M invested in own labs, 35+ customer labs

Work with 55 of the top 100 R&D spenders globally

#1 ESO provider from India, fastest growing, 600+ basis point market share gain in 4 years

*Relationship*TM
BEYOND THE CONTRACT

Gartner

Endo selected HCL as one of its partners not only for its technical depth and expertise, but more importantly because it was able to secure HCL's commitment to a long term R&D partnership.



The HCL-Rockwell Collins relationship is a model case study in technology services outsourcing best practices.



Meggitt sees HCL's role not only in executing to statements of work but also in contributing and adding value such as suggesting ideas for design improvements.



FROST & SULLIVAN

We have used HCL all the way from testing, specification engineering, software engineering and areas in media as well.



FROST & SULLIVAN

We have given HCL not only development responsibilities, but product management responsibilities and technical engineering responsibilities.



Hello, I'm from HCL's Engineering and R&D Services. We enable technology led organizations to go to market with innovative products and solutions. We partner with our customers in building world class products and creating associated solution delivery ecosystems to help bring market leadership. We develop engineering products, solutions and platforms across Aerospace and Defense, Automotive, Consumer Electronics, Software, Online, Industrial Manufacturing, Medical Devices, Networking & Telecom, Office Automation, Semiconductor and Servers & Storage for our customers.

For more details contact: ERS.Info@hcl.com

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