



Manufacturing can be complex,
We keep things under control...

INDUSTRIAL MANUFACTURING

HCL ENGINEERING AND R&D SERVICES

The Environment Today

Industrial manufacturing companies can benefit by creating an interactive plant environment which utilizes the intuitive experiences of consumer electronics. With the advent of mature communications and affordable sensor technologies, companies can now monitor customer behavior with respect to capital intensive equipment. Big data and analytics can be utilized to arrive at features which involve intuitive decision making to improve the overall experience.

Industrial Manufacturing Capabilities



ORV and Construction

- 7 years of HVAC engineering experience
- India's Only private test lab for EMI/EMC and environmental testing
- HVAC Domain Spread – Residential Systems, Commercial refrigeration, Building systems, Transport air conditioning



Energy

- CAT product link
- Visual operator interface
- CAT Composer
- Electronic Service Tool
- Work area vision system
- Engine Monitoring Systems
- Electronic Control System
- Machine Security System

HVAC and climate control



- Equipment design, analysis/ CAD services
- Plant Engineering Services
- Conversion/ generation of intelligent PFDs
- GA, Assembly, Detailed and Weldment drawings
- Block diagrams, Single line diagrams, loop diagrams
- Piping design and analysis
- Pump calculation

Services and Solutions



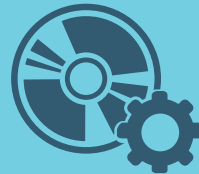
Value Engineering Services

- Hardware – Component obsolescence, environment directives compliant, power consumption optimization, DfX and manufacturing support
- Embedded – Porting, re-engineering, enhance UI, product features, localization
- Mechanical – Form factor, ergonomics, temperature sensitivity, ruggedization



Embedded Software Engineering

- Requirements capture and traceability tools
- Development tools
- Simulation and modeling
- Testing
- Configuration and project management
- SHA



Mechanical Engineering Services

- Tooling and fixture design
- Shock, vibration, environmental testing
- Configuration control and change mgmt.
- Plastic machined parts component assembly
- CAE structural & thermal analysis and reliability prediction
- CAD modeling and detailed design, manufacturing drawings & BOM
- Component design, industrial design, styling and ergonomics



Service Line Units



Acceleration

- Platform Acceleration Suite
- Innovation Platform Enablement

Value

- Accelerated Functional Testing
- eDAT
- VAVE

Technology

- Product Intelligence
- Internet of Things
- Interactive Electronic Technical Manual

HCL in Industrial Manufacturing



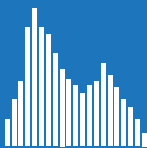
Over 10 years of differential solutions experience



7 years of HVAC Engineering experience, engineers with Design, development and CAD experience



Customers include leading Fortune 500 companies



Engineers with experiences in CAE-structural/CFD/Flow and also in TEC Pub and reality

*%
PROFIT*

Expertise in the following systems: Unigraphics/NX, Pro/ENGINEER, Solidworks, AutoCAD, Autodesk Inventor and PDMS

India's only private test lab for EMI/EMC and environmental testing

SEI CMM Level 4/5 centers, ISO 9001, CMMI and ISO27001 certified

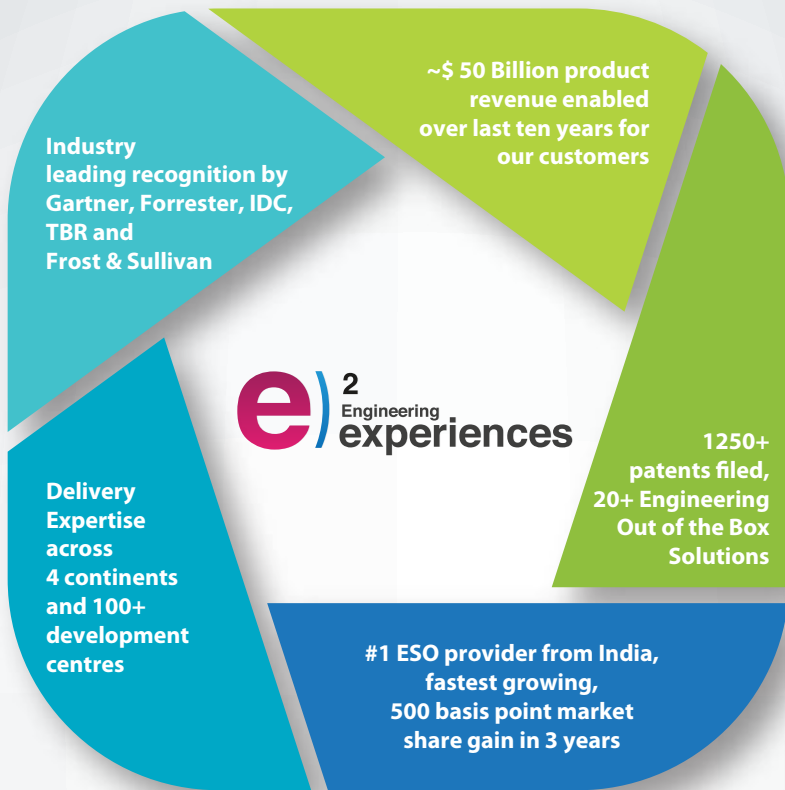
Experiences Engineered for our customers (Case Studies)

- 1 Porting Vxworks to WinCE 6.0 platform, developing the BSP package and prove all the drivers and peripherals are working fine in the new platform for one of the top two makers of farm equipment.
- 2 Verify structural integrity of Assembly Fixture and provide design solution which passes the acceptable static & fatigue design criteria according to ASME-BTH-1-2005
- 3 Common software platforms for 4 variants of marine display systems and 16 variants of engine monitoring systems and windows based graphical configuration simulator
- 4 Complete Product Development of Local Display for a range of Toxic Gas, Combustible Gas and Flame sensors - Firmware development on the Transmitter board for better detection of faults, alarms and events
- 5 Redesign without software change for Tracker controller technology in a non-RoHS product - Conversion of the AVL parts to 100% RoHS compliant and updated schematics and layout and got prototype units made



Look here





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 and Telecom, Office Automation, Semiconductor and Servers & Storage for our customers.

For more details contact: ers.info@hcl.com

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