

HCL

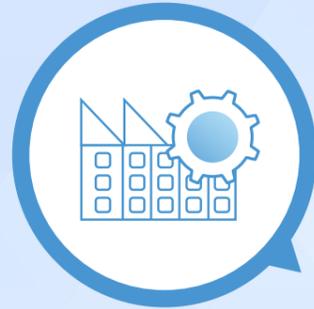
MVision

Manufacturing 4.0:
Reimagine, Innovate,
Transform

#mvision

Manufacturing focus and trends

HCL, with its vision to pivot to operational excellence and customer eccentricity, focusses on the major trends. This encompasses everything from infrastructure modernization to building hyper-connected enterprises of the future.



Industry 4.0

- OT
- Transformation
- IIoT
- AI/ML
- Digital platforms
- Quantum computing

- Cognitive factories
- Smart warehouse
- Collaborative robots
- Augmented reality



Factories of future

- After market services
- Connected customer
- Consumer scale experience



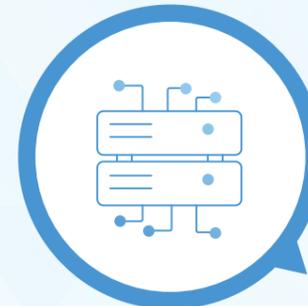
Smart product

- Infrastructure modernization
- Enterprise as a service
- Platform as a service
- Service - driven economy



Capex/Opex

- Fluid workplace services
- Adaptive OT cybersecurity
- WAN/LAN in a box
- Cloud first



Layered networked architecture

- Emerging digital models
- Channels and ecosystems
- Digital twins
- Outcome - based contracts
- Function as a services



New business models

Business implications

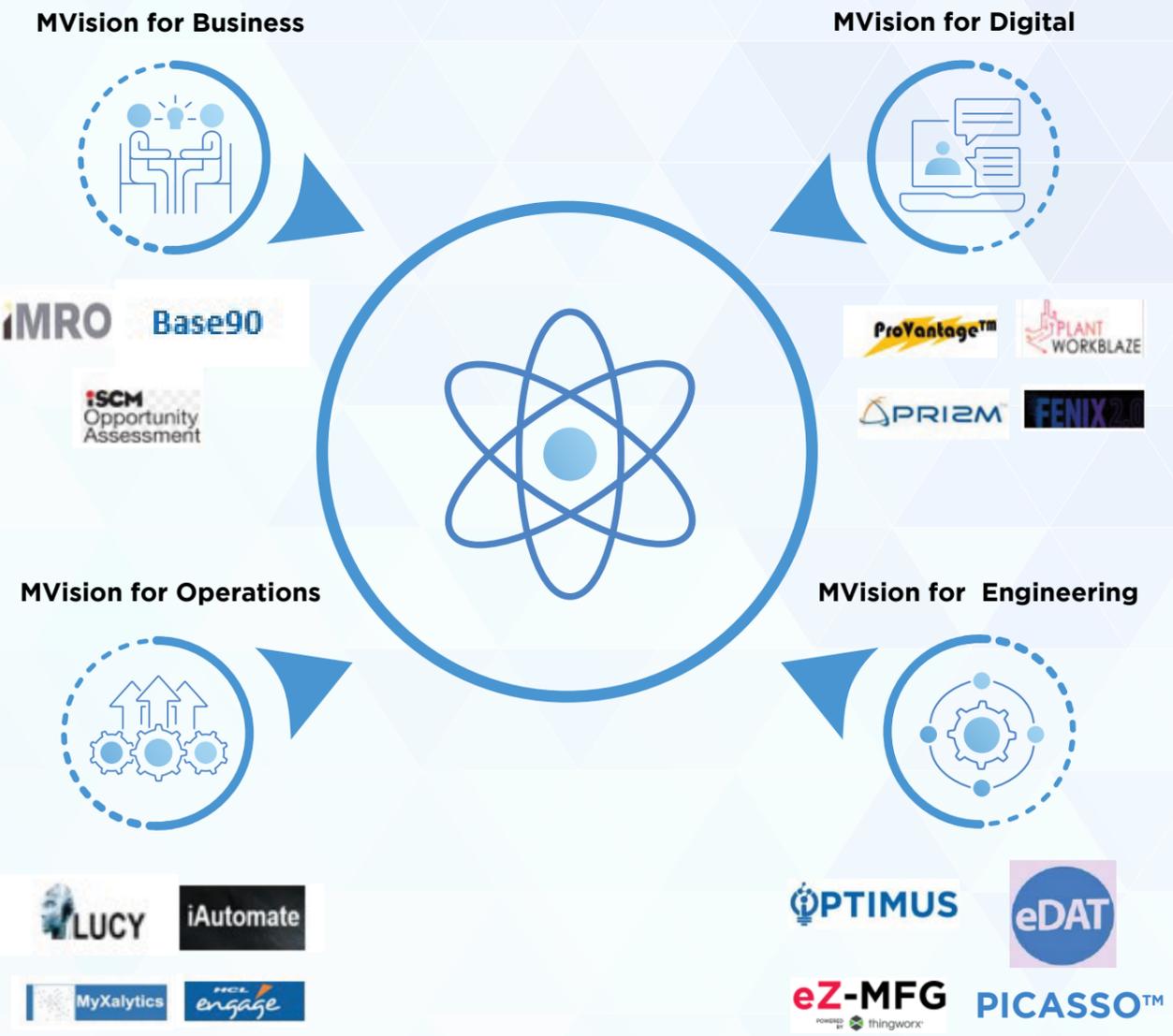
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|---|--|--|
| <ul style="list-style-type: none"> ● Factories of future ● Operational excellence ● Asset management ● Inventory management | <ul style="list-style-type: none"> ● Supply chain resilience ● Supply chain optimization ● Greener technologies ● Yield/Energy/Waste | <ul style="list-style-type: none"> ● Cost rationalization ● Optimized sourcing and sales ● Process transformation, automation ● Portfolio mix optimization |
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HCL MVision: Reimagine, innovate and transform

With over 40+ years of experience in managing manufacturing organizations across the globe, HCL helps customers transform their traditional business processes into next-generation enterprises geared for performance. HCL's MVision framework helps the manufacturing companies navigate the current dynamic landscape to deploy cutting-edge solutions that help innovate and ensure profitability by improving the bottom line and creating an avenue to increase the topline. HCL's MVision framework is built for organizations preparing for the future hyper-connected enterprises by helping them stay reimagined, resilient, reinvested, and resistant to embrace the future.



HCL MVision framework



MVision Nucleus powered by Industry 4.0

- Additive Manufacturing (3D Printing)
- Augmented Reality (AR)
- Virtual Reality (VR) Simulations
- Autonomous Robots
- Big Data & Analytics
- Cloud
- Cybersecurity
- Systems Integration
- Industrial IOT

HCL MVision for Business

HCL helps its customers build customized strategies that drive operational transformation through new technologies, experience, operating models, and operations to drive growth. (HCL provides business strategy consulting for achieving lean operations excellence Institutionalize change programs with a focus on productivity, competitiveness, innovation and customer-centricity; designs and implement impending cutting edge technologies for organizations to become digitally ready from shop floor to the top floor; and cutting-edge enterprise solutions to rationalize, simplify & automate business processes with advisory & implementation services.)



Case-in-point

Built a unified platform for a 5-modal transportation transformation roadmap for a multinational food processing and commodities trading organization.

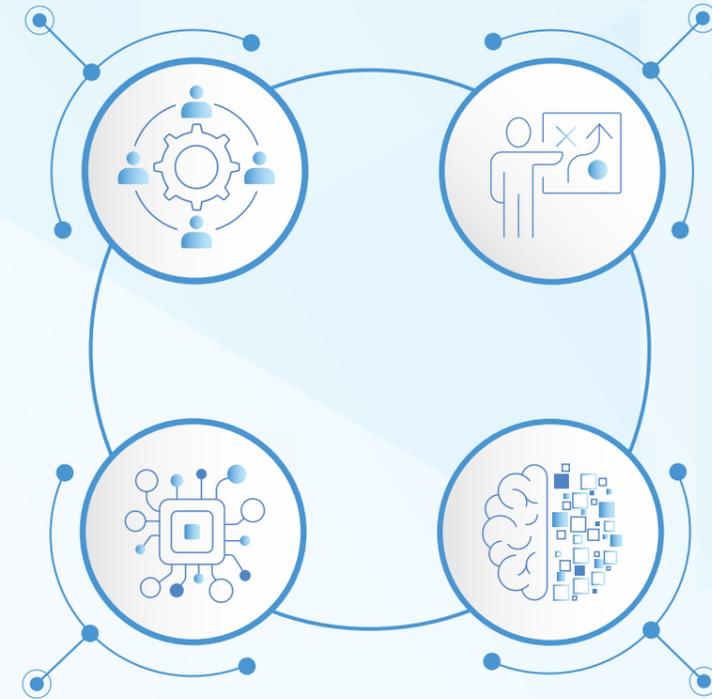
Enabled a new revenue model for a multinational company pioneer in office technology with a co-innovation-driven office refreshment solution.

People and process

Institutionalize change programs with a focus on productivity, competitiveness, innovation and customer-centricity

Strategy

Digital strategy road mapping to facilitate business transformation business process mapping and engineering

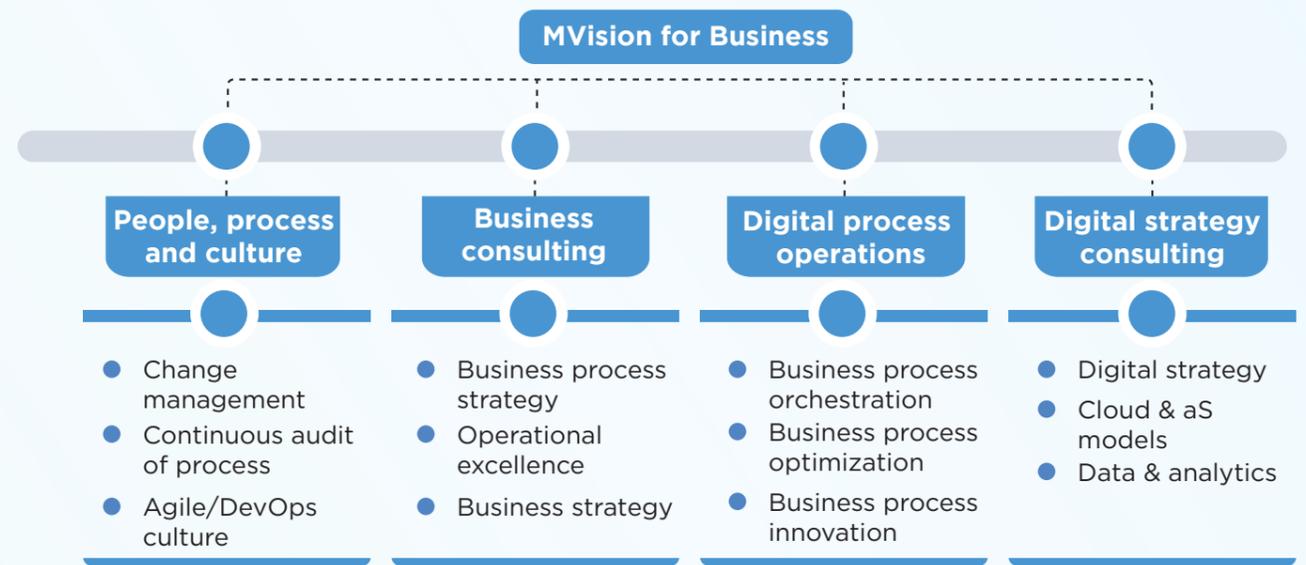


Digital strategy consulting

Introduction of cutting-edge enterprise solutions to rationalize, simplify and automate business processes with advisory and implementation services

Digital process ops

The next-generation of business needs an experience-driven business process management to transform into the enterprises of tomorrow



HCL MVision for Digital

The next-gen digital consulting approach focuses on making the manufacturing organization insight-driven and customer-centric by defining digital strategy and roadmap, adapting and responding to security risks, managing, monitoring, and controlling digital initiatives, and providing assessment review programs. and health checks.

Technology consulting core services

Strategic planning

We define a digital strategy and roadmap to find out the current state of your core systems and identify gaps, components to be changed and use cases for new technology introduction

Design and implement

We leverage our Fenix 2.0 framework to derive the strategy roadmap to select, design, and implement modern and innovative solutions

Cyber-security

We understand cyber challenges, adapt, and respond to the risks in your business ecosystem, protect assets, and help comply with regulatory requirements

Governance and scale

We propose the governance structure, processes, and standards required to manage, monitor, and control digital initiatives within your business

Program management

We assist you in reviewing and assessing projects and programs' health status and providing solutions to better manage and deliver projects and programs

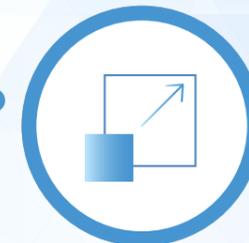
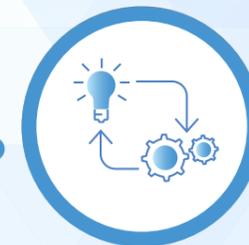
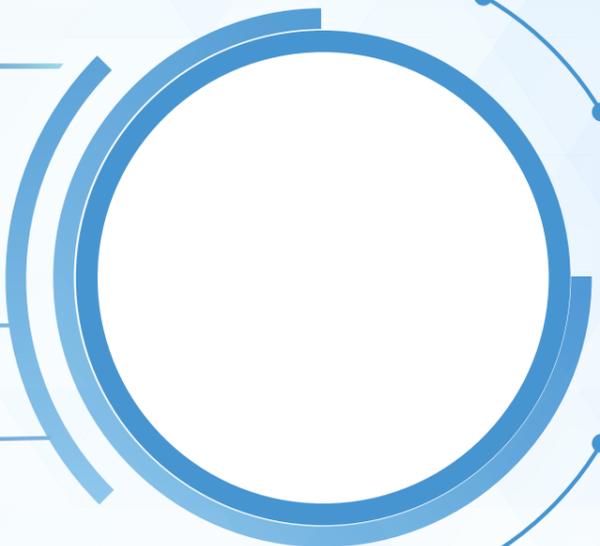
Case-in-point



Developed a unified dealer and distribution B2B2C platform for real-time visibility of procurement, sales warranty and claims for a multinational corporation that designs, manufactures, and distributes engines, filtration, and power generation.



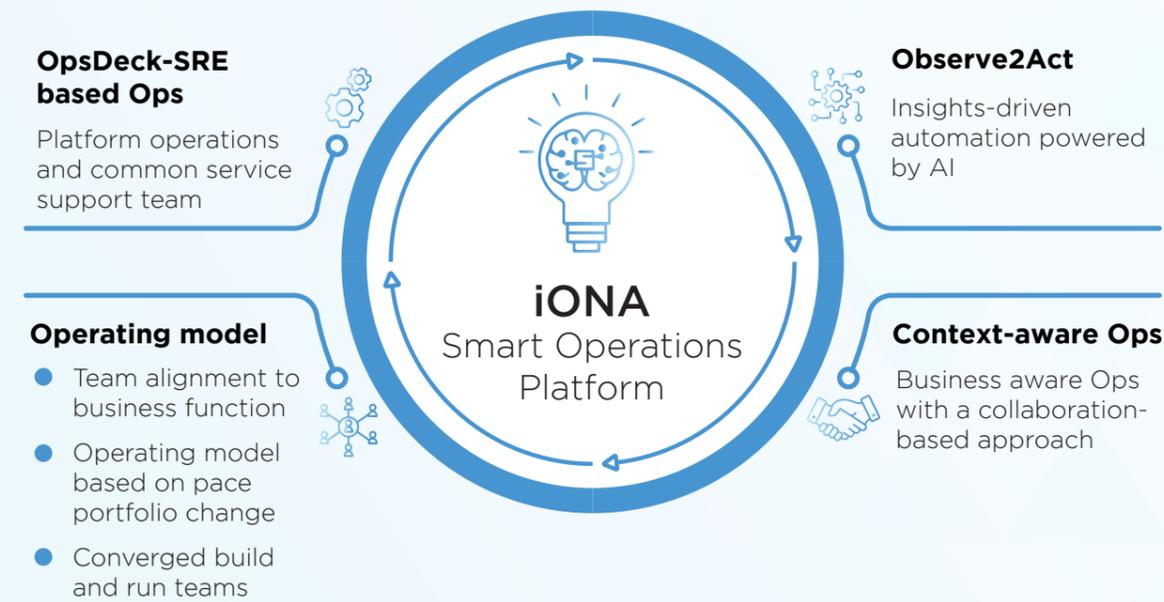
Enabled enterprise-wide cloud migration and agile DevSecOps adoption at scale for a global manufacturer and distributor of chemical products and a leading U.S. manufacturer of ammunition



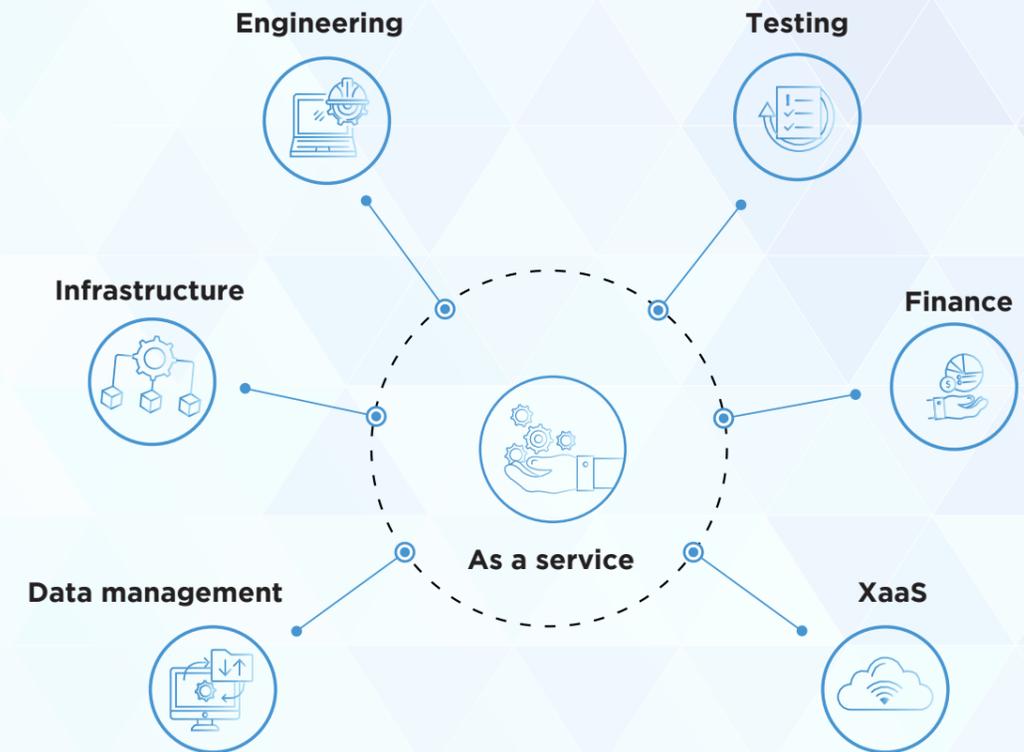
HCL MVision for Operations

HCL helps customers automate business and IT processes through robotic process automation and catalog based technologies. This creates as models to reduce operating costs and enhance quality management. Building on the MVision Nucleus approach, HCL focuses on modernization and helps the clients build an "as a service"- based IT consumption and application portfolio, to reduced cost and become more lean and agile on IT. HCL strives for continuous improvement and delivers predictive operations through extreme application automation by implementing end to end observability and AI driven decision making using our "iONA" framework.

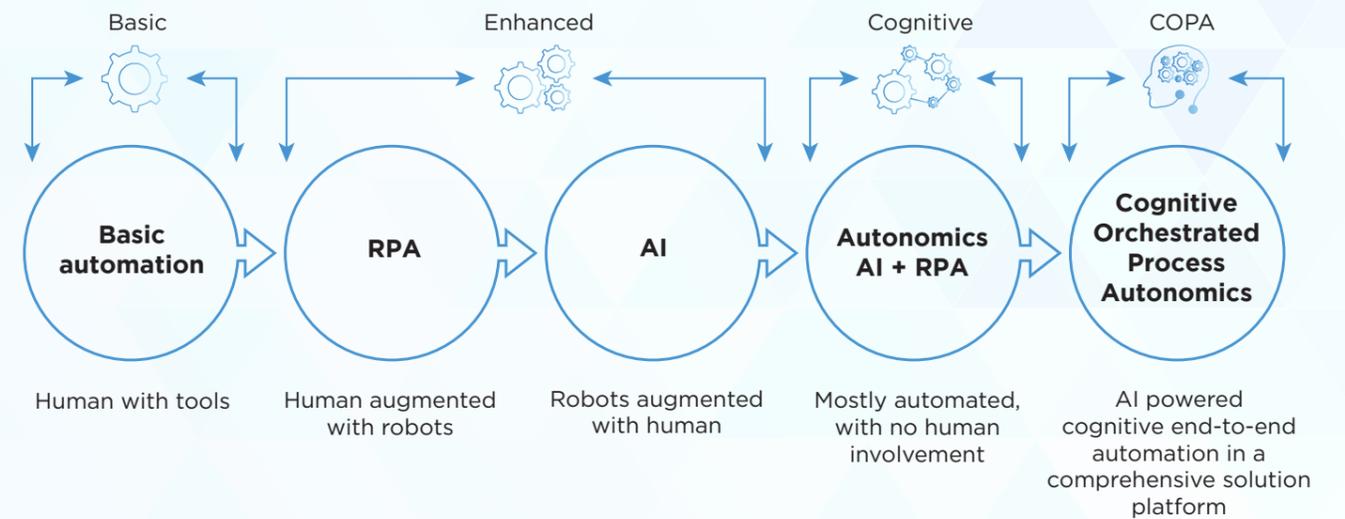
ASM 2.0 - Next-gen integrated operating model



Product culture



Automation & shift left



Case-in-point

Integrated operating model focusing on scaled digital operations across applications infrastructure and engineering services for leading global manufacturer of industrial tools and household hardware and provider of security products

Caterpillar - Integrated heterogeneous systems across dealers using various payment system models for a Fortune 100 construction equipment manufacturer



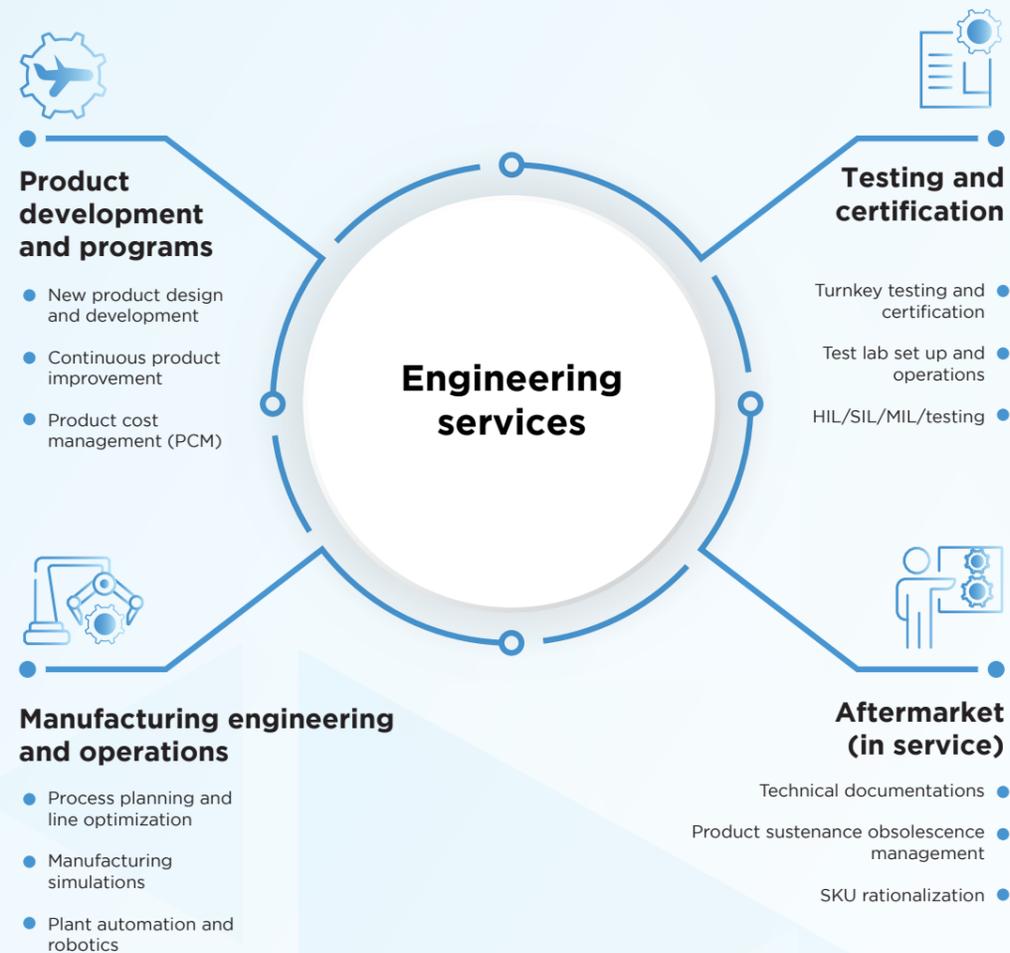
AppOps efficiency through run advisor offerings like 3R analyzer and shift left opportunities derived from focused automation



HCL Mvision for Engineering

As global manufacturing organizations adopt digital practices and trends across businesses and divisions, HCL understands the importance of product engineering and R&D, IoT, and therefore industry 4.0 becomes a necessity to our customers. HCL's strength lies in product engineering and R&D, leveraging offshore R&D centers for agility and scale. HCL helps its customers accelerate product development by leveraging the latest technologies, monetizing product services, and providing immersive customer experiences. HCL helps customers hyper automate operations in design, manufacturing, supply chain, and aftermarket with a vision for autonomous factories and a connected ecosystem.

HCL Mvision for Engineering



Case-in-point

IoT-based preventive maintenance solution to ensure optimal utilization of assets for an American multinational home appliances corporation

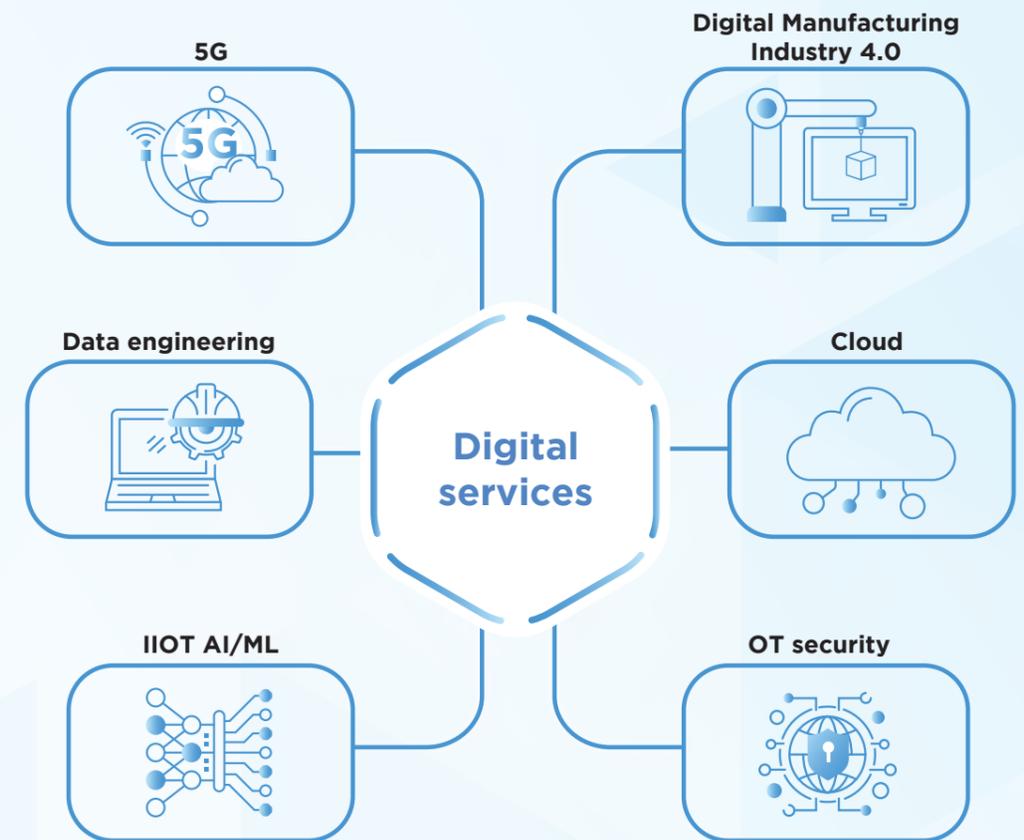
Designed and developed innovative product solutions to improve aesthetics, functionality and cost of floor category products for a leading global appliance company

Operations technologies

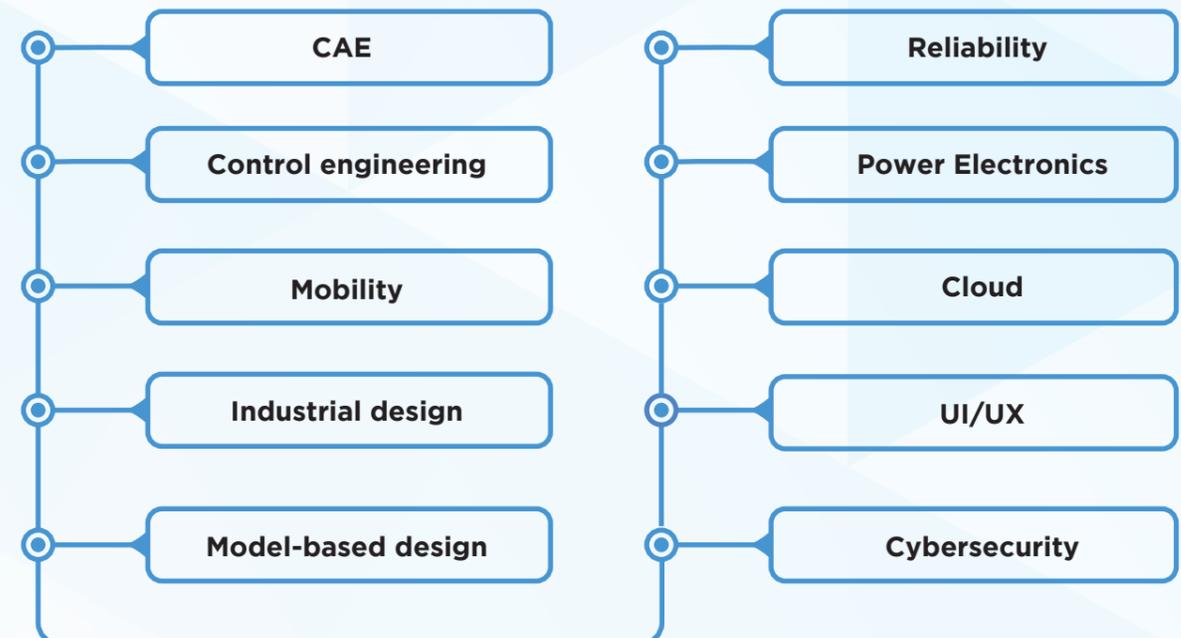
NextGen PLM

MES / MOM

Digital twin

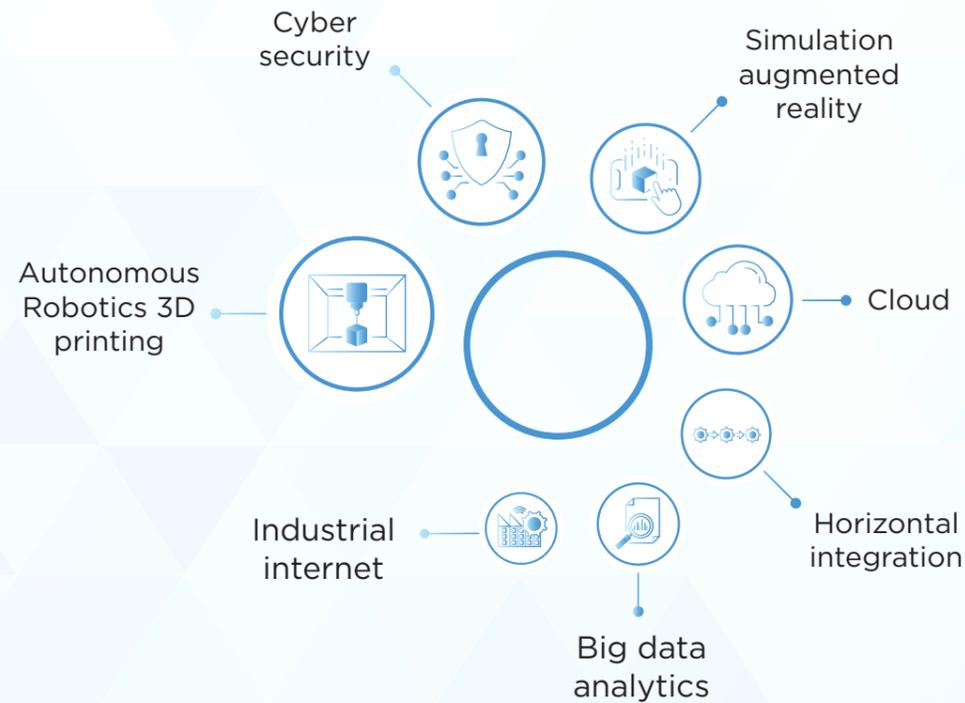


Center of excellence



MVision Nucleus: Powered by industry 4.0

HCL Mvision nucleus is built to empower manufacturing customers to benefit from unprecedented levels of digital adoption for scaling effectively to become a data-driven and insightful organization. By leveraging accelerated services across various technologies and solutions, Mvision nucleus helps customers align to industry 4.0 adoption. HCL Mvision nucleus through HCL's automation, AR/VR, and other smart solutions, including IT/OT integration and UX/UI services, helps manufacturing customers change their traditional landscapes.



Automate order fulfillment, inventory movements, and supplier/factory orders activity based on predictive maintenance and utilization

Improve customer management through real-time analytics, and deploy new business models that increase value capture

Improve efficiency through smart metering of utilization with smart, collaborative work spaces

Case-in-point

Improved plant efficiency, shop floor visibility, and TCO by deploying industry 4.0 and digital manufacturing solutions for a leading American beverage brewing system manufacturer

Provided blockchain and IoT solutions to solve business problems, including pilferage, audit issues, and processing transactions for a Swiss multinational plant equipment manufacturer

Smart products

- Predictive quality
- Asset tracking
- Smart edge/edge
- Data collection and analytics
- Sensors
- Digital twin/thread

Smart services

- SIO
- Data collection/analytics
- Distributed ledger
- Asset performance management
- XR
- DECoDe

Smart manufacturing

- AR/VR, RMI, PdM / PdQ
- Digital twin/Thread, Asset tracking, WIP tracking
- Smart production system
- ZIP, Smart edge/Edge
- Cloud/Private cloud, IT/OT convergence & management
- Sensors, Data collection/Analytics

Smart supply chain

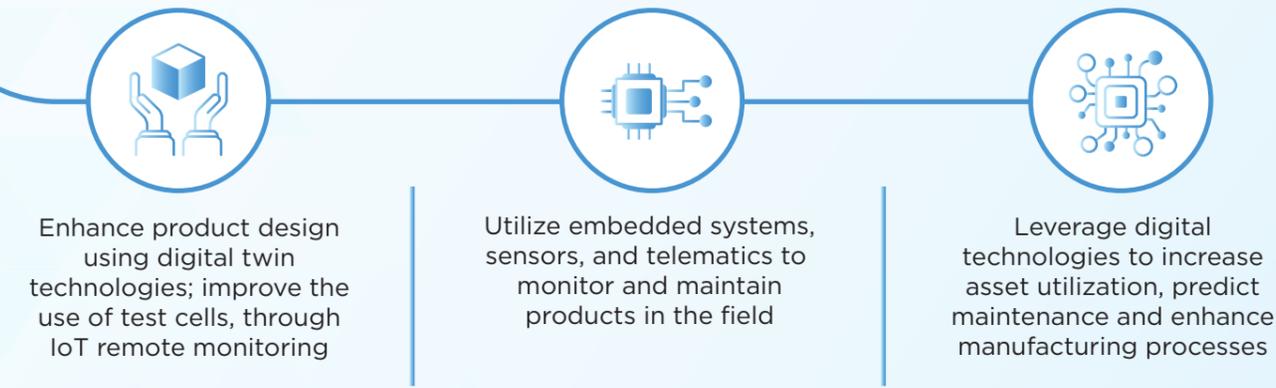
- Cognitive supply chain twin/SC twin
- Track and trace for products/RTLS smart warehouse solution
- Cold chain tracking
- Distributed ledger
- Container tracking
- Smart edge/Edge Cloud/Private cloud Platform as a service
- Sensors
- Data

Smart experiences

- AR/VR
- Asset performance management
- SIO
- Data collection & Analytics
- IMRO
- Fleet T&T
- DPHM
- MRO tracking
- Product smart edge/Edge
- Cloud/Private cloud

Smart workforce

- AR/VR
- Worker safety
- IoT enabled S&OP
- Digital thread
- Plant workBlaze
- DECoDe
- ZIP
- Analytics factory
- Smart edge/Edge
- Cloud/Private Cloud
- Platform as a Service
- IT/OT Convergence & Management
- Sensors
- Data Collection/Analytics



Enhance product design using digital twin technologies; improve the use of test cells, through IoT remote monitoring

Utilize embedded systems, sensors, and telematics to monitor and maintain products in the field

Leverage digital technologies to increase asset utilization, predict maintenance and enhance manufacturing processes

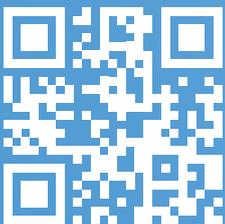
To know more, reach out to us at mega-It@hcl.com

HCL

HCL Technologies (HCL) empowers global enterprises with technology for the next decade today. HCL's Mode 1-2-3 strategy, through its deep-domain industry expertise, customer-centricity and entrepreneurial culture of ideapreneurship™ enables businesses to transform into next-gen enterprises.

HCL offers its services and products through three lines of business - IT and Business Services (ITBS), Engineering and R&D Services (ERS), and Products & Platforms (P&P). ITBS enables global enterprises to transform their businesses through offerings in areas of Applications, Infrastructure, Digital Process Operations, and next generation digital transformation solutions. ERS offers engineering services and solutions in all aspects of product development and platform engineering while under P&P. HCL provides modernized software products to global clients for their technology and industry specific requirements. Through its cutting-edge co-innovation labs, global delivery capabilities, and broad global network, HCL delivers holistic services in various industry verticals, categorized under Financial Services, Manufacturing, Technology & Services, Telecom & Media, Retail & CPG, Life Sciences, and Healthcare and Public Services.

As a leading global technology company, HCL takes pride in its diversity, social responsibility, sustainability, and education initiatives. As of 12 months ending on March 31, 2021, HCL has a consolidated revenue of US\$ 10.17 billion and its 168,977 Ideapreneurs operate out of 50 countries. For more information, visit www.hcltech.com



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