



L&T Technology Services



Imagination in our **mind**.
Innovation in our **heart**.
Engineering in our **soul**.



ANNUAL REPORT 2016 - 17

INDEX

This report contains forward-looking statements, which may be identified by their use of words like 'plans', 'expects', 'will', 'anticipates', 'believes', 'intends', 'projects', 'estimates' or other words of similar meaning. All statements that address expectations of projections about the future, including but not limited to statements about the Company's strategy for growth, product development, market position, expenditures and financial results, are forward-looking statements. Forward-looking statements are based on certain assumptions and expectations of future events. The Company cannot guarantee that these assumptions and expectations are accurate or will be realised. The Company's actual results, performance or achievements could thus differ materially from those projected in any such forward-looking statements. The Company assumes no responsibility to publicly amend, modify or revise any forward-looking statements, on the basis of any subsequent developments, information or events. The Company has sourced the industry information from the publicly available resources and has not verified those information independently.



To view our online reports,
please log on to
www.Inttechservices.com



18 Founder Chairman's message



30 Business segment review



40 Nurturing people in a culture of innovation

01-43 Corporate Overview

- 02 L&T Technology Services Limited: Backed by a rich engineering heritage
- 04 Overview: L&T Technology Services
- 16 Numbers that define our growth
- 18 Management messages
- 24 Case studies
- 30 Business segment review
- 36 Board of directors
- 39 Corporate information
- 40 Nurturing people in a culture of innovation
- 42 Engineering with responsibility

44-102 Statutory Reports

- 44 AGM Notice
- 52 Directors' report
- 91 Management discussion and analysis

103-218 Financial Statements

Standalone

- 103 Auditors' report
- 108 Balance sheet
- 109 Statement of profit and loss
- 110 Statement of changes in equity
- 111 Cash flow statement
- 113 Notes to accounts

Consolidated

- 163 Auditors' report on consolidated financial statements
- 166 Consolidated balance sheet
- 167 Consolidated statement of profit and loss
- 168 Consolidated statement of changes in equity
- 169 Consolidated cash flow statement
- 171 Notes to consolidated accounts
- 218 Information on subsidiary companies
- 219 Proxy Form



Where the mind
stimulates imagination

Where the heart
inspires innovation

Where the soul fuels
engineering

We welcome you into the world of
L&T Technology Services.

Steered by a heritage of excellence,

And enabled by unparalleled technological
prowess.

Driven by quality and capability,

And led by the collective curiosity of our people.

To deliver superior services and solutions across
industries, for a better tomorrow!

L&T Technology Services Limited: Backed by a rich engineering heritage

We are a leading global ER&D services company, backed by the rich engineering expertise and experience of our parent company, Larsen & Toubro Limited.

Larsen & Toubro is an Indian multinational engaged in technology, engineering, construction, manufacturing and financial services with USD 17 billion in revenue. It operates in over 30 countries worldwide. A strong, customer-focused approach and the constant quest for top-class quality have enabled the Company to attain and sustain leadership in its major lines of business for over seven decades.

L&T's integrated capabilities span the spectrum of 'design to deliver' solutions. With a strong focus on digitalisation, the Company is well equipped to provide smart solutions for city surveillance, intelligent traffic management systems, transport and logistics, as it partners the Indian Government in its Smart City mission, among other key national initiatives.

With manufacturing facilities and offices spread across the world, and a global supply chain to back it, L&T operates to the highest benchmarks of sustainable growth and corporate governance to support its customer in their progressive journey.



Finance



Process Industry



Technology Services



IT



Infrastructure



Defence



Products, Systems & Equipment



Hydrocarbon



Power



Real Estate



Standing Tall...

L&T has to its credit some of the world's most iconic projects that stand tall on the global engineering landscape. These include:

- Technological contribution to key missions: India's first nuclear-powered submarine and maiden missions to the moon and Mars
- Continuing support to smart cities in India
- First ever commercial network for grids for an American utility
- The world's longest heated and insulated waxy crude pipeline
- The world's largest coal gasifier, exported to China
- The world's biggest Ethylene Oxide reactor for a petrochemical complex in the Middle East
- One of Asia's largest nuclear-grade forging facilities
- Airports in India and the Middle East
- Metro rail systems for Riyadh, Qatar and major Indian cities
- Large infrastructure projects, including bridges and highways in Jordan and Malaysia
- Hydrocarbon projects in the Middle East, Africa, S.E. Asia and India
- Currently building the world's largest high-vacuum pressure chamber, the cryostat, for ITER
- Critical contribution to India's aerospace sector
- Shipyards on the west and east coast of India
- A wide range of switchgear

FROM EARTH TO MARS

L&T IS A TRUSTED PARTNER TO ISRO IN DEVELOPING PROCESSES AND TOOLING FOR PRODUCING THE ENTIRE RANGE OF SOLID PROPELLANT MAIN BOOSTERS FOR ALL INDIAN SPACE LAUNCH VEHICLES.

Building on over four decades of association with the Indian Space Programme, L&T has played an important role in the success of India's Maiden Mars Mission (Mangalyaan). The Company supplied critical launch systems and tracking equipment for the prestigious project. The electronic packages were mounted on the upper stage of the satellite launch vehicle and the heat shield using honeycomb deck panels were manufactured at L&T's Advanced Composite facility at Vadodara.

The spacecraft was tracked using a Deep Space Network Antenna installed and commissioned by L&T.

Vision

L&T shall be a professionally-managed Indian multinational, committed to total customer satisfaction and enhancing shareholder value.

L&Tites shall be innovative, entrepreneurial and empowered team constantly creating value and attaining global benchmarks.

L&T shall foster a culture of caring, trust and continuous learning while meeting expectations of employees.

 **261,341**
crores

Order Book
as on March 31, 2017

 **110,011**
crores

Revenue
as on March 31, 2017

L&T Technology Services: An entity led by innovation

Entrenched in the belief that curiosity shapes the contours of a better future, we, at L&T Technology Services Limited (LTTS), have crafted an innovation-led strategy to steer our growth trajectory, enabling us to evolve into a global leader in Engineering R&D (ER&D) services.

As the only Indian pure play engineering R&D company of its kind to offer high-end services and solutions to all major industries viz. Transportation, Industrial Products, Telecom & Hi Tech, Medical Devices and Process Industry, we have a range of technological expertise and depth of engineering that is truly unparalleled in the world.

We provide ER&D services to more than 200 customers globally, including 48 of the top 100 Global Engineering R&D spenders, and offer significant growth opportunities for both existing and new customers.

L&T Technology Services (LTTS) enjoys the unique advantage of inheriting a deep engineering legacy over the years.



254

Patents filed (197 patents co-authored with global customers and 57 by LTTS)



223

Global clients



6

India delivery centres



7

Onshore delivery centres



34

Labs



27

Sales offices



48

of World's top 100 Global
Engineering R&D spenders as clients



10,463

Employees



Our Vision

- To be technology explorers, engineering better products, services, and life
- To be amongst the top 10 global engineering services companies in the world



Our Mission

- We aim to be the best, lead the curve, nurture brilliance, obsess about customer delight and become the only partner of choice for our stakeholders



Our Values

- Ethical and professional organisation with respect for individual and diversified global talent
- Social harmony & peaceful existence

Our offerings and value proposition:

L&T Technology Services offers a portfolio of engineering services across industries. We closely follow the technology trends in the ER&D industry and have focused on key technology areas that impact the various verticals in which we operate. These include digital engineering, mobility and augmented reality, IoT (IIoT, NB-IoT), automation of knowledge, robotics, autonomous & near-autonomous vehicles, energy efficiency and imaging and video. We not only focus on solutions in these areas but also build cross-domain solutions for our customer. These cross-domain solutions, developed across verticals, can be applied by our existing and

prospective customers to drive non-linear revenue growth for the Company. In order to execute this strategy, we are also building and strengthening our alliances with technology companies. Our services across our business segments can be classified broadly into the following categories:

- **Imagineering:** We work closely with our customers, especially with their sales, marketing and R&D arms to conceptualise products. We help them develop processes and infrastructure required to deliver such products and services to their end customers. Once the concept is formed, we validate the concept with the consent of our customers through the PoC process.

Once the concept is proven, it is taken ahead for further development. We refer to this entire process as imagineering.

- **Engineering:** As a provider of engineering services, we focus on developing the product once the concept is finalised. The process includes design, development, verification, validation and certification.
- **Adjacent Engineering:** We help our customers with aftermarket support including product lifecycle management and technical publication. Our manufacturing and sourcing services help customers to improve their productivity, reduce cost and improve their go-to-market strategy.

Our business model

We offer customers flexible business models like Build Operate Transfer, End to End managed R&D services, Fixed Price, Time & Material and Outcome-based Pricing including Risk Reward, Transaction-based Pricing and Revenue share. Our ER&D services help customers reduce time-to-market for their products and services, innovate to create new products and solutions, reduce cost of development and meet regulatory requirements.

Leveraging Cross-Poll!nnovation for R&D

With a multi-sectoral presence enabling Cross-Poll!nnovation of ideas, we are continuously building on our strengths in products, processes and technologies to deliver differentiated engineering solutions.

Increased investment in innovation labs

Dedicated innovation labs, powered by hundreds of specialists, create solutions across 5 business units. We have 34 R&D laboratories for development and testing in specific industry verticals that simulate the environment needed by our customers.

Besides continued investment in new age technologies, we leverage pre-built accelerators and solutions to translate innovation to engineering.

We have a wide range of technology labs, industry-specific labs and compliance-testing labs.

- **Industry-specific Labs**
Auto Lab, Medical Lab, Industrial Products Lab, TCES Solutions Lab
- **Compliance Testing Labs**
Material Testing Lab, Wet Lab, EM/EMC Lab, RF Lab, Applied Physical Metrology Lab, Mixed Signal Hardware Lab

• Technology Labs

IoT Lab, Smart Manufacturing Lab, Optics Lab, Power Electronics Lab, Tear Down Lab

We work closely with international and national scientific institutions to continually source ideas for engineering solutions. Our events such as Tech Panorama, serves as a platform for our employees to showcase their skills and demonstrate ideas. In 2016, over 8,000 employees participated and over 2,534 technical abstracts were submitted.



INNOVATION LED PATENTED CULTURE

OVER THE YEARS, SUSTAINED INVESTMENT IN R&D HAS LED TO THE CREATION OF SEVERAL UNIQUE ENGINEERING SOLUTIONS, WHICH WE HAVE PATENTED. AS OF MARCH 31, 2017, WE HAVE CONTRIBUTED TO 197 CUSTOMER OWNED PATENTS AND 57 FILED EXCLUSIVELY BY LTTs.



Moving strategically forward

As part of our strategic focus, we acquired US-based Esencia Technologies Inc, a provider of design services from specification to final product in Digital Signal Processing for Communications, Video, Security and Networking. The move is in line with our long-term strategy to strengthen our footprint in ASIC, VLSI and Embedded design services.

The acquisition deepens our offerings to global customers, particularly in the realm of Perceptual Computing, Internet of Things, Advanced Silicon Products and Wireless Networking Technologies with fast, powerful & smart design tools and signal processing libraries. Esencia currently has a team Embedded, ASIC design and semiconductor experts in Silicon Valley.



Positioned in the HfS Industry 4.0 Services Winners Circle

In an endorsement of our manufacturing service excellence, we have been positioned in the "Winners Circle" by HfS Research – The Services Research Company™, the first Industry 4.0 Services Blueprint Assessment. HfS Research is a leading independent global analyst firm for the business and technology services industry. LTTs was rated for strong global capabilities in Manufacturing Data Analytics, Robots, Manufacturing Automation, Digital Clone Simulation, 3D Printing, Manufacturing IoT, Cybersecurity, AR in Manufacturing and Visual Analytics in Manufacturing.

Focussed on quality innovation - Winner of the Golden Peacock National Quality Award, 2017

Our quality focus is led by well-defined process improvement initiatives that are driven by a powerful measurement framework, backed by our compliance testing labs across various industry verticals. We have in place robust process performance models to govern our key

delivery processes, enabling us to predict performance and follow it up with proactive actions on our projects.

An independent and dedicated quality team, supported by senior management, is focussed on driving excellent delivery throughout the organisation. In addition, we have formed a cross-functional task force to work on continuous improvement of the efficacy of our quality systems.

L&T Technology Services Limited was awarded the Golden Peacock National Quality Award, 2017, as a recognition of the Company's consistent focus in high quality project delivery consistently for global businesses.

We have a robust and comprehensive Quality Management System (QMS), which has enabled us to meet the most stringent global quality benchmarks, as endorsed by our certifications and accreditations.

- ISO 9001:2008 certified delivery centres - Only companies that demonstrate the ability to consistently provide product that meets customer and applicable statutory



and regulatory requirements get this certification.

- Our Aerospace and Medical Devices practices are AS 9100C and ISO 13485:2003 certified. The certification upholds the quality and system requirements that L&T Technology Services incorporates in its management systems.
- Embedded systems and software activities are assessed at Maturity Level 5 of SEI's CMMi® Development Ver. 1.3. – signifying high standard of consistency in performance and delivery.



The Zinnov recognition

Zinnov has recognised L&T Technology Services Limited as an Expansive and Established player in Zinnov Zones 2016 Product Engineering Services and in the Leadership Zone across 10 major industries appreciating the Company's best-in-class solutions, capabilities and offerings that seamlessly combine cutting-edge infrastructure with a robust innovation-led portfolio.

The global rating survey has positioned L&T Technology Services as an "Expansive and Established" engineering partner with deep domain competencies across both Embedded Systems and Mechanical Engineering domains. Zinnov has rated us in the "Leadership Zone" across verticals such as Automotive, Aerospace, Telecom, Semiconductors, Consumer Electronics, Energy & Utilities, Industrial Automation, Transport, Construction & Heavy Machinery and Medical Devices.

It is the sixth consecutive year in which L&T Technology Services has been distinguished as a overall leader in Industrial Automation by Zinnov. L&T Technology Services has also been rated as the overall leader in the Construction & Heavy Machinery vertical for the third straight year.

L&T Technology Services Industry 4.0 Capabilities

