IT & TECHNOLOGY SERVICES

LTI's Delivery Center in Warsaw, Poland

■ L&T INFOTECH

Overview:

L&T Infotech (LTI) is a global technology consulting and digital solutions company helping more than 420 clients succeed in a converging world. With operations in 32 countries, the business goes that extra mile for its clients and accelerates their digital transformation with its Mosaic platform – enabling their mobile, social, analytics, IoT and cloud journeys. Founded in 1997 as a subsidiary of Larsen & Toubro Limited, its unique heritage gives it an unrivalled real-world expertise to solve the most complex challenges of enterprises across all industries. Each day, the team of more than 30,000 LTItes enables clients to improve the effectiveness of their business and technology operations and deliver value to their customers, employees and shareholders.

The business has a strong presence in each of the following verticals:

- Banking and Financial Services
- Insurance
- Manufacturing
- Energy and Utilities
- Consumer packaged goods (CPG), Retail and Pharma
- Hi-Tech, Media and Entertainment

To further augment its digital capabilities, LTI announced two acquisitions in FY 2019-20. In July 2019, it acquired Lymbyc, a specialist in AI, machine learning and advanced analytics. The Lymbyc acquisition adds to LTI's Mosaic platform offering. In October 2019, it acquired Powerup, a born-in-cloud company, with cloud consulting capabilities across all three leading cloud platforms – AWS, Microsoft Azure and Google cloud. In addition to cloud-consulting capabilities, Powerup also adds 2 AI products to LTI's powerful suite of offerings.

Business Environment

The global Information Technology-Business Process Management (IT-BPM) market, excluding hardware and Engineering, Research & Development (ER&D), grew 5.6% over the last year and stood at USD 1.5 trillion in 2019. Indian IT-BPM industry revenues including hardware and ER&D spend stood at USD 191 billion in FY20. The industry added ~USD 14 billion in incremental revenues last year, representing year-on-year growth of ~ 7.7% in USD terms. IT-BPM export revenues for the industry for FY 2019-20 are expected to reach USD 147 billion, a growth of 8.1% over the past year.

LTI Headquarters, Powai, Mumbai

The share of digital in industry revenues has jumped from ~20% last year to a range of 26%-28%. Nine digital technology areas will emerge as the fastest-growing and highest-impacting, with the combined potential to deliver one-third of the USD 100 trillion. The nine areas include three foundational technologies – Big Data and Analytics, Cloud Computing, and Cybersecurity – and six advanced technologies – Artificial Intelligence, Internet of Things, 3D Printing, Robotics, Blockchain, and Immersive Media.

The strong digital foundation that Indian technology has built over the last decade underpinned the remarkable agility and resilience in responding to the COVID-19 crisis; ensuring business continuity for all global clients while prioritizing the safety of its professionals.

The vertical specific key trends observed are as follows:

a) **Banking and Financial Services:** With the Banking industry being a fast adopter of advanced data analytics and AI-based strategies, as customer data segmentation and enhanced decision support become key priorities, this sector saw an increase in spend on digital technologies. COVID-19 has the potential to change the way people bank, forever marking a clear shift towards digital and cloud. It is expected that most routine operations would move to the cloud as cloud-native technologies can enhance customer experience while reducing costs at the same time.

b) **Insurance:** Cost optimization and legacy systems' modernization are the key drivers of growth, and many insurers are shifting from the product-centric to a customer-centric business model, so insurance companies are open to form partnerships with 'InsurTechs' which will help them cut costs and improve business process efficiencies, as well as provide a better customer experience.

c) **Manufacturing:** This sector includes Industrial Manufacturing, Automotive & Aerospace. The automotive industry has been facing an unprecedented technology and business model transformation, driven mainly by Connected, Autonomous, Shared and Electric mobility (CASE). These trends will continue to drive the industry evolution going forward. The industrial manufacturing sector is witnessing the importance of the Digital Twin in maintaining operations within the manufacturing ecosystem, and the emerging and expanding role of collaborative robots, remote work and the 'virtual shift' in the manufacturing sectors.

d) **Energy and Utilities:** Cloud migration has helped companies leverage solutions for automated adaptive planning and scheduling of production, logistics and service processes, which in turn will enhance operational efficiency by reducing human interventions.

e) **CPG, Retail and Pharma:** Competition from Direct-to-consumer companies is changing business

Mosaic Experience Centre

models for CPG players. Companies are investing in customer-centric digital technologies, such as Virtual Shelves, Digital Kiosks, Self-Checkout, Digital Reality, etc. As pharma companies generate a huge amount of health data, linking them to new technologies to build digital platforms is the way forward to transform their businesses. Emerging technologies, such as mHealth, Robotic Surgeries and 3D Printing, are paving their way in the Life Sciences industry.

f) **Hi-Tech, Media and Entertainment:** Direct-to-Consumer is a strong theme emerging from the necessity to understand customer preferences and behaviour. In the Media and Entertainment sector, content creation and prediction, along with personalization, are the keys to providing a seamless user experience. In Hi-Tech, 5G technology is slated to drive the market for the next several years and open opportunities in Over-the-top (OTT) and E-commerce.

FY 2019-20 marks the fourth consecutive year of industry-leading double-digit growth from LTI in constant currency terms.

Major Achievements

In FY 2019-20, LTI further strengthened its partnership and alliances ecosystem. LTI received the AWS SAP Competency partner certification, positioning it on an exclusive list of AWS global partners. Elevation of LTI to 'Gold' partnership with Pega and 'Premier' partnership with MuleSoft reaffirms the resolve of the business to remain relevant to clients.

During the year, LTI's long-term rating has been upgraded by CRISIL to AAA/Stable from AA+/Positive. The National Stock Exchange of India Ltd. (NSE) has included LTI in its Nifty Next 50 Index.

Large Deal Wins

a) A US based insurance company, a new logo has selected LTI for a multi-year, multi-million-dollar managed services deal for its IT infrastructure and IT security operations

b) A US based utility company, a new logo has selected LTI for multi-year, multi-million-dollar deal to provide Cloud and Infrastructure Managed services

c) Won a multi-year, multi-million-dollar managed services engagement with a European financial institution, a new logo

d) A leading power generation company chose LTI as its partner for a greenfield and organization-wide implementation of SAP S/4 HANA

e) A multi-year, multi-million-dollar deal for transforming the global application operations of a global auto ancillary manufacturer

LTI's state-of-the-art Delivery Center in Johannesburg, South Africa

f) An apex government body selected LTI to create a conceptual framework on Data Management, integrating and harmonizing the available data sets in various key sectors through a single-window system for better governance

g) A multi-year, multi-million-dollar deal for complete digital transformation, enhancing productivity and quality of service of a key government ministry by implementing new microservices-based applications and building a data and analytics platform

h) A large energy retail company selected LTI for an end-to-end managed services deal for its IT applications and infrastructure operations

Awards and Recognition

a) LTI ranked as a Leader in AI-based Automation Capability in Software Testing Services: AI and Digital Next-Gen Testing NelsonHall NEAT report 2019

b) LTI's Digital Transformative Agribusiness case study recognized in ISG's Global Digital Excellence: 25 Winning Partnerships Book

c) LTI ranked as HFS Top 10 IoT Service Providers 2019

d) LTI featured as a Major Contender in Everest Group Talent Readiness for Next-generation IT Services PEAK Matrix™ Assessment 2020

e) LTI positioned as a Major Contender and Star Performer in Everest Group Application and Digital Services in Banking – Services PEAK Matrix™ Assessment 2020

f) Won the SAP Pinnacle Award for Industry Innovation Partner of the Year 2020

g) LTI is now a constituent of the FTSE4Good Index Series following the June 2019 index review

h) LTI has been felicitated with the ZEE Business National CSR Leadership Award 2019 for Innovation in CSR practices

Significant Initiatives

The advent of newer and efficient technologies is driving extraordinary changes across different industry verticals all over the world. During these tumultuous shifts, there are early signs of winners who would outgrow their competitors and establish themselves as Breakaway Enterprises. The common thread across these companies is they are fast adopters of technology and are reshaping their organisation at a pace and agility that has not been witnessed in the past.

LTI Welcome Center in Powai

At LTI, we believe enterprises need to master four essential plays to be a breakaway leader:

- Operate to transform – leveraging automation in everyday operations and solving for the unstated needs

- Data driven Organization – harnessing the power of analytics

- Experience Transformation for their customers and employees

- Digitize the Core by leveraging real-world know-how of the client's industry domain

LTI's go-to-market strategy that is believed to help enterprises to be breakaway leaders continues to be the same as last year. It is continuously working towards 'strengthening to solve' along these four plays by investing in people and sharpening capabilities. LTI's programmatic capability building focuses on hiring and re-skilling employees in digital technologies, developing vertical-centric platforms, augmenting key partnerships and acquiring unique capabilities.

xFH – LTI Design for Thriving in the WFH Future

For the foreseeable future, WFH is the new global norm. As with any competitive landscape, some organizations will find ways to adapt and thrive under a fully distributed model, while others will, unfortunately, flounder.

That's what the xFH model is all about: helping organizations make sense of their own WFH model, understand the layers that comprise it, then drive meaningful and impactful interventions at each of those layers – and across all layers – to ensure optimal business outcomes.

At LTI, the WFH is broken down into five layers, each with a specific set of interventions, tools, governance and outcomes – these layers traverse foundational needs to include both team and individual requirements.

LTI has demonstrated agility and nimbleness to adapt to the challenges posed by COVID-19. This, combined with its strategy to help customers become Breakaway Enterprises, is enabling LTI stand out in the marketplace.

Human Resources

LTI crossed the 30,000-employee mark in FY 2019-20. The LTI culture is one of inclusivity and transparency. A gender-inclusive workforce is a natural result of this outlook, which is deeply woven into its ways of working. As of March 31, 2020, 31% of its workforce comprises women. LTI's unique recruitment programme 'Revive with LTI' provides return-to-work opportunities to experienced women professionals, who are currently on sabbatical, under which they receive on-the-job training, mentorship from senior leaders and the opportunity to work on trending technologies in LTI.

In the area of talent management and digital skilling, the business has launched an AI-based solution that will help

LTI's Delivery Center at Pune

LTI's Delivery Center in Bengaluru, India

contextualize and speed up hiring, skilling – specifically focused on digital – and deployment. It provides accurate ways of matching the right talent with the relevant job at speeds that significantly cut down on sourcing and hiring times. Besides providing a business-context based skill map-gap analysis, it also ensures an improved employee as well as candidate experience.

A key goal for the business in FY 2019-20 has been to focus on continuous reduction in attrition. Towards this, LTI launched the 'iLead' series to help first-time managers develop their leadership skills and help in talent retention.

To tap the vast talent pool in colleges, LTI flagged off the 'Brand Icon' initiative – a strategic programme designed to engage with selected colleges, not just for branding but from a 360-degree-development perspective between academia and corporates. Student development programmes like webinars and workshops were conducted by the LTI industry experts.

The global sales leadership incubation programme – 'iRise' – has won recognition at the '2019 Stevie Awards for Great Employers'. Currently in its 3rd batch, iRise is a 12-month onboarding programme aimed at building the global sales leaders of tomorrow. In its recent report "Talent Readiness for Next-generation IT Services PEAK Matrix™ Assessment 2020: Closing the Demand-Supply Gap", the Everest Group has ranked LTI as the leading service provider for talent readiness for next-generation data services skills. This

ranking is on account of LTI's focused talent development efforts across the entire data value chain of data storage and management, data gathering, and data analytics.

In response to the COVID-19 outbreak, LTI has swiftly enabled the work-from-home option for almost all of its employees, ensuring the safety and well-being of its employees, while maintaining continuity of operations. A global helpline and email address have been set up to answer questions about COVID-19. Regular updates and information to employees through emails, Intranet and other communication channels have been ensured. An internal portal has been set up which acts as a one-stop destination for accurate information and guidelines about COVID-19.

For India-based employees, LTI SafeRadius - a GDPR-compliant return-to-work app-based solution was launched to track and monitor an employee's health and safety, and for issuing regional alerts from the HR and Admin teams.

Risks and Concerns

Client relationships are at the core of the business. LTI enjoys a history of high client retention and continues to derive a significant proportion of revenue from repeat business built on the successful execution of prior engagements. Also, efforts are on to expand the client base and geographies, as well as increase the value-add of deliverables.

Mindtree West Campus, Bengaluru

The major risks faced by the business include failure to align the services portfolio with newer and in-demand technologies, leading to lower operating revenue. A technology architecture group has been created to ensure continuous skill alignment with market needs. Evolving geo- political and economic conditions may affect the client's business and LTI's delivery, which is mitigated by regular monitoring. Changes in immigration policies of countries where LTI has significant business may affect its ability to position consultants at client locations.

With a majority of the revenue being foreign currency denominated, the business carries translation and transaction foreign exchange risks. However, expenses in respective currencies provide a natural hedge.

Employees are the real assets for the IT industry. In order to compete effectively, the ability of the business to attract and retain qualified employees is critical. Attrition of experienced and talented employees impacts organizational knowledge and relationships. LTI has launched programmes for employee engagement and has a framework in place to reward high-potential employees.

Outlook

The risks emanating from the global pandemic continue to evolve. With sustained investments in capabilities and clients concurring with a xFH approach in response to COVID-19, the business is confident of a robust, resilient and sustainable business model.

■ MINDTREE

Overview:

During the year, subsequent to acquisition of control, Mindtree was consolidated as a subsidiary in the L&T Group, from the second quarter of the financial year.

Mindtree is a global technology consulting and services company, helping Global 2000 corporations marry scale with agility to achieve a competitive advantage. 'Born digital' in 1999, more than 340 enterprise clients rely on the entity's deep domain knowledge to break down silos, make sense of digital complexity and bring new initiatives to market faster. Mindtree enables IT to move at the speed of business, leveraging emerging technologies and the efficiencies of continuous delivery to spur business innovation.

Mindtree offers an extensive range of technology-driven customized solutions. Mindtree's digital strategy is pivoted on multiple solutions, IPs, and frameworks cutting across several service offerings, covering areas such as real-time recommendations, social media intelligence, workforce productivity, customer analytics, and sales enablement. The entity's expertise in digital solutions span across

Immersive Aurora Experience Center

Adobe, Salesforce, and Sitecore. It services clients in diverse industries such as Retail, CPG and Manufacturing, Travel & Hospitality, Banking, Financial Services & Insurance, High-Technology and Media.

Mindtree is a Digital Next company with the main emphasis on the digital transformation of its clients to make them a better suited for future disruptions. Mindtree has grown as a trusted service provider for its clients and has repeatedly proven its technological expertise and domain capabilities.

Digital Next Intelligent Enterprise for Future Possibilities

Mindtree plays the foremost role in its clients' digital transformation and customer experience development. Mindtree's clients' businesses are highly influenced by their customer experience and the ease of use of all provided services. Emerging technologies are defining businesses even more than before. Therefore, companies have to be more aggressive in their uptake of new offerings, before they disrupt their business models.

Mindtree develops innovative solutions and platforms around such unique customer and cross-sector requirements.

Automation

At Mindtree, automation strategy is platform and technology agonistic. Niche technologies like Machine Learning and RPA are used to automate repeatable and reusable tasks. At present, 764 BOTs are employed along with Mindtree Minds to provide top-notch client deliverables.

Application Managed Services

Mindtree has developed unique end-to-end workflow-driven Application Managed Services that take complete lifecycle ownership of client enterprise applications. Through the AMS practice, Mindtree has grown to become a strategic partner for clients' business growth. The wide range of services provided to clients through this practice includes:

- Transition and planning management – Performing system audit and creating a tailored plan for IT transformation completely aligned to business objectives and relevant KPIs

- DevOps – Automation of all possible IT services and transforming existing business into an agile and lean IT system

- Test Automation capabilities – For complete software test automation of client application with reduced time to production

Kalinga Campus, Bhubaneswar

- End-to-end Managed Services – Providing omnichannel support and business aligned KPIs

- Application Modernization – To identify and eliminate redundancies in client systems, thereby enhancing customer experience through increased speed of operation, new features and add-ons

Expert Thinking

Mindtree helps its clients re-imagine their business, providing unique solutions and digital transformation by leveraging next-generation and emerging technologies, including Blockchain, Machine Learning and Artificial Intelligence, Internet of Things and Cloud. Services ranging from ideation to customized solution building and implementation are carried out across the entire digital value chain.

Alliance and Partnerships

- **Microsoft:** Gold Cloud Partner, through which access to all Microsoft resources is available, delivering the best possible solutions to its customers

- **Salesforce partner ecosystem:** A Platinum partner, specialising in Salesforce implementation strategies to drive digital growth through client engagement

- **SAP:** Mindtree is the world's only integrated service provider with expertise on the SAP HANA platform

- **Amazon Web Services:** Advanced Consulting Partner in the Amazon Partner Network (APN) for AWS

- **Adobe:** Business Partner within the Adobe Solution Partner Programme, which brings together a full suite of customer experience transformation services and Adobe Experience Cloud solutions to accelerate the digital transformation journey

Business Environment

The IT BPM sector in India grew at the rate of 6.1% year-on-year. The IT and ITES industry grew from USD 170 billion in FY19 to USD 181 billion in FY20. India's IT industry contributed around 7.7% of the country's GDP. India has become the largest digital capabilities hub in the world with about 75% of the global digital talent being present here.

The COVID-19 pandemic has had an unprecedented impact at different levels viz. health and safety risks for Mindtree Minds, impact on clients which may lead to reduction in customer discretionary IT spends, delivery disruptions as well as increase in financial, compliance and operational risks. Mindtree set up a War Room consisting of senior leaders from different functions to co-ordinate response to COVID-19.

Digital Pumpkin, London

Digital Pumpkin, Bengaluru

Significant Initiatives

Customer satisfaction is one of the key performance indicators in Mindtree. Customer feedback is regularly gathered through quarterly Project Feedback Survey (PFS) and annual Customer Experience Survey (CES) which helps in monitoring account health and interest.

Awards

The entity has been recognized on multiple fronts for its capabilities in a wide range of offerings including Digital, Cloud, Automation and other next generation developments. A few highlights include:

- Mindtree has been placed on 'The Best of The Global Outsourcing 100®' list by the International Association of Outsourcing Professionals (IAOP)

- Zinnov positions Mindtree in the Leadership Zone in Overall Digital Services and across Six Categories in the Zinnov Zones for Digital Services 2019 Report

- Mindtree named Overall Winner of the 2019 ISG Star of Excellence Awards™ for Core Technology Services

- Mindtree won at the 2019 Paragon Awards™ in the Excellence Category for Outstanding Service Delivery for a Global Airline

- Mindtree recognized as an Innovator in Avasant's Intelligent Automation Services RadarView™ Report 2019 - 2020

- Received several awards from The ISG Provider Lens™ Report viz. Leader for providing Professional Services for Salesforce Sales and Service Cloud in USA, Leader for Private/Hybrid Cloud – Data Center Services & Solutions, Rising Star in Service Operation and Delivery (US), Global Leader for Next-gen ADM services

- Conferred South Asian Federation of Accountants (SAFA) best-presented accounts award for its strong ethics, excellence in financial reporting and corporate governance

- Best Compliance Framework award by UBS Forums

Environment, Health and Safety

The entity is determined to reduce its carbon footprint through initiatives to conserve energy and water. It continuously strives to improve energy efficiency, increase the use of renewable energy, enhance water sustainability and reduce waste to landfills.

The entity has installed a turbo core chiller, resulting in an average annualized reduction of power consumption. Installation of LED fixtures across locations, UPS optimization, AC retrofit activity, shift rationalization through Routematic Application, a common bus system and so on led to reduced carbon emissions. In order to reduce freshwater consumption and to make its Pune facility a zero-discharge facility, its sewage treatment plant was upgraded to a newer technology. At Bengaluru,

Digital Pumpkin, New Jersey

various water conservation programmes, such as installation of advanced aerators and reuse of RO reject water, resulted in saving of fresh water.

Gladius IoT, a full-fledged building IoT solution which integrates all aspects of building management systems with the IT systems, is operational at Mindtree Kalinga and Bengaluru West campus. The system monitors energy consumption in the building, across the floors and prevents avoidable energy losses.

The entity is committed to providing a safe and healthy workplace to employees. The aim is to make it a zero-incident campus. Post COVID-19, the entity is closely following WHO guidelines for health and safety. It has set up a 24-hour medical hotline for all employees to report any COVID-19 concerns, including diagnoses. Top priority has been given to safeguarding the health and safety of employees, while also ensuring the continuity of customer deliverables.

Human Resources

Mindtree creates a work environment where Mindtree Minds feel recognized for their efforts and contribution, thus creating an organization nurturing high performance, innovation and execution excellence. Through its focus on diversity and inclusion, women-centric leadership programmes cover more lady minds throughout the organization. The onboarding programme for new Mindtree Minds and Mindtree Kalinga – The Global Learning Center was designed to create Engineers of Tomorrow. The homegrown, cloud-based learning platform – Yorbit – has over 2400 courses that cover 900+ skills. More than 87,000 courses have been completed on Yorbit in the current FY. The entity also has an Enterprise Leadership Programme for leaders identified from a combination of Talent Review and Leadership nominations to ensure a diverse group across functions (sales, delivery, enabling functions) and geographies. SpotOn – Mindtree's Rewards and Recognition tool – has been built to strengthen the ways by which Mindtree Minds can recognize each other, and provides People Manager and Peer Awards that focus on instantaneous recognition.

Risks and Concerns

As a global enterprise, Mindtree is exposed to a range of external as well as internal risks that have a significant impact on its performance. In order to efficiently manage these, a strong risk management architecture has been built. The entity identifies, assesses, manages and reports on the principal risks that could affect its ability to implement strategies and deliver commitments. Its robust enterprise risk management programme propels a culture of informed and responsible risk handling to achieve the desired growth.

Network Operations Center, Bengaluru

LTTS prototype of the Battery Management System used in Electric Vehicles

The business faces the risk of revenue concentration with top clients. Changes in immigration policies of countries like the US, which is tightening its visa norms, where Mindtree has significant business, may affect its ability to position consultants at client locations. It could face margin pressures due to competitive pricing, tactical movements by competitors to gain market share, or escalating costs. With a majority of the revenue being foreign currency denominated, the business carries translation and transaction foreign exchange risks. A formal Board-approved hedging strategy is reviewed periodically.

Cyber Risk has emerged as a top risk across industries as organizations are moving to newer areas of engagement such as social, mobile computing and cloud computing. The entity has leveraged leading industry standards to develop cyber security frameworks. In the knowledge industry, attracting and retaining people with the right skills is imperative for long-term success. Employee-friendly policies, learning plans and career growth options have ensured that attrition remains at tolerable limits.

Outlook

The COVID-19 outbreak has been creating an unprecedented level of uncertainty with major economies virtually coming to a halt. The business is well equipped to handle the global crisis based on the business continuity plan that has been successfully implemented to ensure the health and safety of employees while fully supporting clients worldwide. Looking ahead in 2020-21, the business anticipates a drop in demand, curtailment of discretionary spends and cost-optimization pressure within clients' business. At the same time, the business also expects demand from clients for digital and transformational services as they invest into data, cloud-enabled solutions, customer-centric and end user experience businesses.

Focus would be on signing multi-year annuity deals, rationalizing tail-accounts and going deeper into the limited set of strategic clients. The business will continue co-selling with long-standing strategic partners.

The business will continue to drive operational efficiencies for margin-expansion and continue the profitable growth journey.

■ L&T TECHNOLOGY SERVICES

Overview:

L&T Technology Services Limited (LTTS) is a leading global pure-play Engineering Research & Development (ER&D) services company. It offers design and development solutions throughout the product development chain and provides services and solutions in the areas of mechanical and manufacturing engineering, embedded systems, engineering analytics and plant engineering. LTTS' customer base includes 69 Fortune 500 companies

Headquartered at Knowledge City, Vadodara, L&T Technology Services helps clients gain the competitive edge by building smart products, enabling smart manufacturing and offering smart services.

and 53 of the world's top ER&D companies across industrial products, transportation, telecom & hi-tech, medical devices and plant engineering. The business also provides digital engineering advisory services to some of the world's leading enterprises. The key differentiators for LTTS' business are its customer-centric industry innovations, domain expertise, and multi-vertical presence spanning major industry segments.

Transportation: LTTS offers the complete gamut of engineering services and solutions for its global customers in the transportation industry, including OEMs and Tier 1 suppliers in the Automotive, Trucks & Off-Highway Vehicles and Aerospace sectors. In the automotive sector, LTTS helps its customers through best-in-class platforms and solutions in areas such as Advanced Driver Assistance System (ADAS), Autonomous Drive (AD) and Electrical Vehicles (EV). In the Aerospace sector, LTTS' offerings encompass a wide spectrum, including aero engine, aero structure & systems, avionics, air traffic management and new-age disruptive digital transformation solutions, which cater to all phases of the Aircraft Lifecycle – design, manufacturing, and aftermarket services. LTTS has over a decade of domain expertise in the Trucks and Off-highway segment, and offers services across industries like Construction & Mining, Cranes & Material Handlers, Commercial Vehicles, Agricultural & Gardening Equipment, Powersports and Polymer.

Industrial Products: LTTS helps its OEM customers across building automation, home and office products, energy, process control and machinery backed by its deep domain expertise across software, electronics, connectivity, mechanical engineering, industrial networking protocols, User Interface/User Experience (UI/UX), test frameworks and enterprise control solutions.

Telecom & Hi-tech: LTTS' Telecom and Hi-tech vertical provides engineering services and solutions that cater to five key sectors: Telecom, Consumer Electronics, Semiconductor, ISV, and Media & Entertainment. For the Telecom sector, the services provided include product variant design & development, maintenance, testing, support, optimization, system integration and professional services (pre-deployment, deployment & post-deployment). For the Semiconductors industry, LTTS provides turnkey design services, IC design services, hardware system design, platform software, modem services, verification & validation, multimedia, connectivity, storage, mechanical engineering, and customer engineering support. For the Consumer Electronics segment, it provides services in the areas of product conceptualization, design & development, platform software, testing & certification, manufacturing support, product maintenance, and product launch support. For the Media & Entertainment industry, it provides services in product engineering, product conceptualization,

The IoT Innovation Hub in Bengaluru is where IoT solutions come to life - from connected workers to smart fuel dispensers

design & development, testing & certification, manufacturing support, product maintenance, and value engineering. And in ISV, LTTS undertakes application engineering, VLSI, cloud engineering, product uplift, platform development & migration, product support, testing and certification.

Plant Engineering: As an engineering, procurement, and construction management (EPCM) specialist, LTTS supports every phase of a plant's lifecycle, from concept to commissioning. The business enables its customers to address all their engineering requirements to streamline their processes, resolve downtime issues, and adhere to statutory, human safety, machine safety, regulatory compliance as well as local and global standards. LTTS provides end-to-end solutions in the areas of plant design, process engineering, project management, construction management, MOC (management of change), and handover of operations to its customers in the Chemical, Consumer Packaged Goods (CPG), and Oil & Gas sectors.

Medical Devices: LTTS helps medical device OEMs address various industry challenges, including acceleration of the product development cycle, reduction of time-to-market, value engineering, and product launches in various geographies in compliance with the regional regulatory requirements. It focuses on delivering solutions

in in-vitro diagnostics, patient mobility services, musculoskeletal services, surgical services, cardiovascular, home healthcare and general medical. LTTS also provides pre-compliance testing and validation support, including product/ compliance remediation, complaint management, and regulatory documentation support.

Business Environment

According to NASSCOM, India's ER&D services sector (comprising embedded systems, ER&D and product engineering services) is the fastest growing sector within the Indian technology space – estimated to grow at 11 percent Y-o-Y to reach USD 32.7 billion in FY20. NASSCOM reports that, over the last 5-6 years, India's ER&D services sector has been a story of consistent double-digit growth, even as the overall IT industry has grown in single digits.

The global ER&D spend remained strong at USD 1.5 trillion in the calendar year 2019 (growth of 5.3% Y-o-Y), driven by increasingly software-led engineering and digital technologies (like IoT and analytics). Digital Engineering is going to be the focus area for enterprises with growing requirements for a better user experience and personalization, greater adoption of platforms and cloud, and consolidation to build full-stack capabilities.

Zinnov reiterates this fact by observing that the global ER&D spend is resilient and has witnessed growth despite the slowdown and geo-political factors. Zinnov also forecasts that enterprises will continue to invest in Digital

LTTS' Motor Dyne system conducts troubleshooting of power electronics
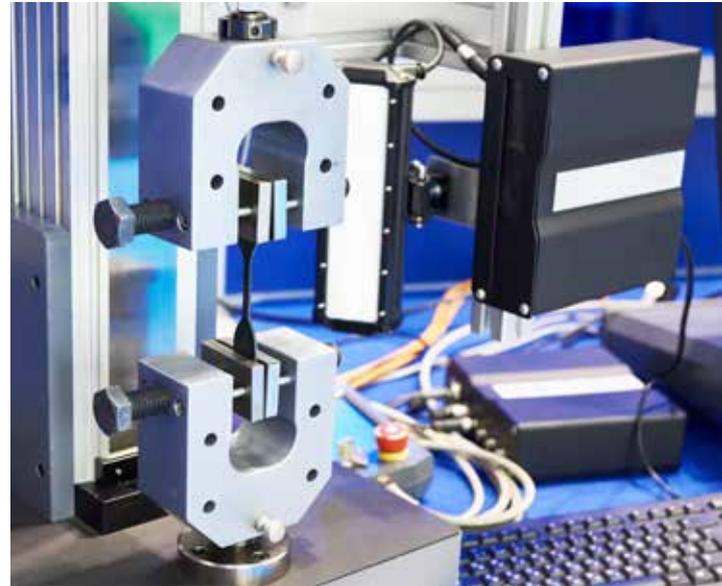
LTTS' Hardware & Test Equipment covers sectors like avionics, communication, and security systems

Engineering initiatives to stay relevant. The global spend of Digital Engineering is expected to grow at a CAGR of 19 percent, from USD 403 billion in 2019 to reach USD 1153 billion by 2025.

LTTS' service portfolios have well-defined offerings in the ER&D sector. Through its services and solutions in the areas of Core Engineering, Digital Engineering and Digital Advisory Practice combined with its Innovation Engine, the entity is well- positioned to provide customers with business value propositions throughout their value chain needs across domains and industries. This is further corroborated through its positioning as an established technology leader by industry experts such as Zinnov, ISG, ARC, IDC, NelsonHall, and Frost & Sullivan.

Major Achievements

LTTS had a healthy inflow of projects across all its verticals. Several multi-million-dollar deals were won across the globe.

Order Wins

Transportation

- Airbus India selected LTTS to manage their Avionics Software Development, V&V (Validation & Verification) and Data Analytics

- A European components supplier for autonomous vehicles has selected LTTS as its engineering partner for

key programmes in Advanced Driving Assistance Systems (ADAS) and Automated Driving (AD) domains

- A leading Swedish Automotive OEM has awarded LTTS a multi-year programme to set up a SCRUM team to develop and manage the software components in Brakes, Steering, Suspension and Climate Control Domains

- A leading auto parts maker has awarded LTTS a multi-year programme for design and development of their Engine Control Unit (ECU) for enhanced fuel efficiency for a new range of powertrains for their vehicles

- A global automotive manufacturer has chosen LTTS for the development of their AUTOSAR platform and integration of 5G telematics modules

- LTTS was selected as strategic partner by a European automotive manufacturer for its electric Powertrain (ePowertrain) practice

Industrial Products

- For an industrial automation company, LTTS won an order to develop IoT firmware for next-generation motor drives and controllers

- LTTS is setting up a development and design centre in India for a European manufacturer to provide engineering projects across Embedded, Mechanical and Connectivity domains

Engineers develop and test microscopy software in LTTS' Microscopy Lab

LTTS' automation frameworks for 5G rollout will enable clients to get first mover advantage

- A global manufacturer of Drinking Water Management solutions has chosen LTTS to be their sole engineering services partner to support various advanced digital programmes including NPD and sensorization

- A major industrial automation company has awarded LTTS a multi-year contract to develop an electrical power module using end-to-end engineering protocols

Telecom and Hi-Tech

- LTTS won a contract from a global technology conglomerate for VLSI engineering services spanning its product suite of AR and VR enabled solutions

- One of the world's leading technology firms has awarded LTTS a multi-year deal involving an engineering analytics program for next-generation wireless laptops and processors

- The world's leading datacentre solutions provider has awarded LTTS a programme to validate their family of high-speed platforms and to set up a Centre of Excellence (CoE)

- LTTS will deploy its intelligent buildings framework i-BEMS to help a multinational technology company optimize energy conservation, implement analytics and enhance UX

- A European media and communications conglomerate awarded LTTS a contract to develop next-generation Hybrid Boxes that support 4K resolution

- LTTS has been awarded a programme by a global media firm to design and develop a next-generation chipset for broad-band and video security

Medical Devices

- For a leading medical device manufacturer, LTTS is executing a complete Design History File (DHF) and European Union (EU) Medical Device Regulation & Remediation project in the Newborn Care and Neurology markets

- LTTS has secured the next phase of development of a digital health programme for one of the top life sciences companies in the US

- A global medical devices OEM awarded LTTS a contract to develop a new IoT platform to remotely monitor their life sciences products installed globally

- For a global healthcare company, LTTS was chosen to be their engineering partner to set up a CoE that will provide support investigating and analysing reporting of complaints for regulatory filing in the US and Europe

- LTTS secured an order from a medical equipment manufacturer for the design and development of a new bedside patient-monitoring device

Plant Engineering

- A leading German chemical company has awarded LTTS a programme to offer end-to-end services for a brownfield plant expansion

5G Test Solutions are vital in the deployment and success of evolving 5G networks
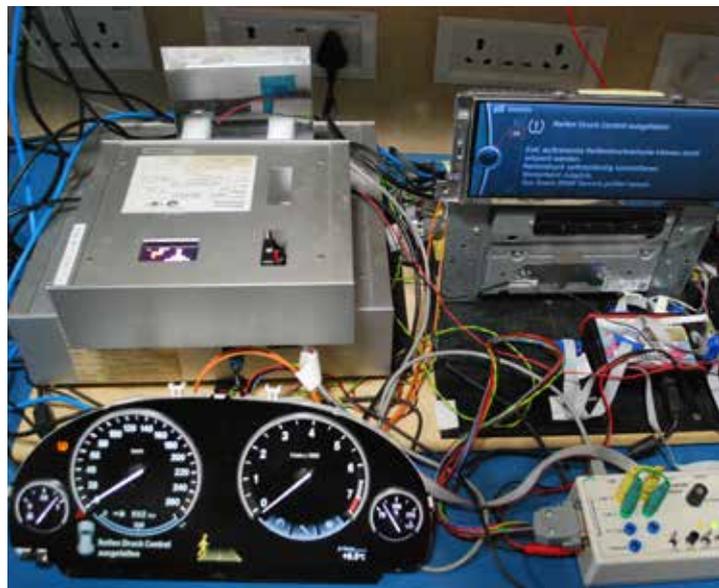
LTTS' Transport Instrument Cluster takes signals from various sensors and conveys them to the driver

- LTTS won a large deal to implement over 600 engineering applications for a leading US-based EPC company

- One of the largest beverage companies in the world has selected LTTS for an Engineering, Procurement and Construction Management Programme (EPCM) to replace the age-old wastewater treatment system at one of its key manufacturing plants

- LTTS was awarded a project to set up an Engineering Value Centre (EVC) by a multinational brewery company for execution of site-based projects

Customer Recognition

- LTTS launched the 'Smartest Office Campus in the World' in Israel for a leading technology conglomerate, which runs on its proprietary smart building platform i-BEMS

- Agappe Diagnostics, a diagnostics reagents and equipment manufacturer, launched the first indigenously developed blood cell counter in partnership with LTTS. The blood cell counter provides accurate diagnostics for critical ailments such as dengue fever, rat fever, allergic conditions, leukaemia, typhoid, and anaemia

- LTTS was conferred with the 'Performance Excellence Award' by a leading global OEM for exceeding performance standards including quality, cost and service

Awards and Recognition

- The Confederation of Indian Industry (CII) conferred LTTS with the CII Industrial Innovation Award, 2019 and recognized it as one of the most innovative Indian companies in the Services category in the 'Large Enterprises' segment

- LTTS was awarded recognition for 'High Growth in Women Employment' and 'Highest Exporter-IT (Mysuru Region)' by the Software Technology Parks of India (STPI)

- LTTS was rated as an 'Expansive and Established Leader' across 10 verticals by Zinnov

- LTTS was recognized as a 'Leader' in Product Engineering and Manufacturing Services in the Automotive & Aerospace sectors by ISG

- NelsonHall rated LTTS as an overall leader in Digital Manufacturing Services

- LTTS was rated as 'Leader' in Worldwide Business and Industrial IoT Engineering and Managed Services 2020 by IDC

- Everest Group recognized L&T Technology Services as 'Leader' in Automotive Engineering Services

Significant Initiatives

LTTS believes in incremental efforts to enhance its technology and service footprint across the industry

LTTS' Creative Think Studio showcases design aspects of the product to create delightful customer experiences

sectors that it caters to globally, and has launched various initiatives that enable it to realize its vision and demonstrate its commitment towards excellence.

- LTTS inaugurated an Aerospace and Defence Engineering Design Centre in Rockford, Illinois, to cater to the new-age digital requirements of the aerospace and defence markets

- LTTS developed the world's first cost-effective Robotic Endo-training Kit in association with GITA and Department of Science and Technology (DST). This kit is a futuristic surgical training robot that gives a high-definition observation of the patient's anatomy and the instruments. The research and development for the kit has been a joint effort between India and the Republic of Korea

- LTTS' new framework unveiled a line-up of Digital Manufacturing Solutions that can unlock value-based digital transformation and help global manufacturers scale-up their digital initiatives

Environment, Health and Safety

LTTS has aligned its sustainability goals with that of its parent, L&T, with the objective of contributing to the creation of a sustainable world by minimizing environmental impact, maximizing social outreach and offering sustainable solutions. As part of this roadmap, LTTS

is constantly undertaking various initiatives in the areas of water and energy conservation as well as efforts to reduce the carbon footprint.

From water-cooled chillers, occupancy sensors, LED lighting, and elevator operation optimization to pressmatic taps, wastewater treatment and usage of technology to reduce travel and logistics, LTTS ensures optimal measures to safeguard the environment. LTTS also follows and implements all the industry standards, protocols, and best practices to ensure the workplace health, safety, and well-being of its workforce of over 16,000+ employees.

Human Resources

LTTS' HR policies have strongly focussed on creating a culture of excellence and achievement. Abiding by the People, Process, and Portals parameters, the entity is striving towards making employees at all levels an integral part of the decision-making system. LTTS launched multiple new employee support and welfare initiatives this year.

A few of these are:

Global Engineering Academy (GEA): The GEA provides an invaluable opportunity for LTTS employees to reskill and reboot their domain knowledge. There are 15 technology tracks that employees can select from to advance their digital skillsets and be eligible for new opportunities across technology domains.

At LTTS' Imaging Lab, engineers develop various Innovative AI-based imaging solutions

The Tear Down Lab is where engineers disassemble products for detailed analysis

DIGICIANDOS: This programme helps employees gain proficiency in the latest technologies. With over 400 attendees, 3 sessions have successfully trained participants on AI and Mobility. An additional USP, byte-sized learning modules that can be accessed through handheld devices will be launched soon, enabling employees to learn on-the-go.

Risks and Concerns

The economic slowdown in key geographies or cyclical downturns in key segments could materially affect revenue growth and profitability. The inability to innovate and develop new services and solutions to keep up with customer expectations and evolving technologies could result in lower growth traction. Changing immigration laws and policies can impact the entity's ability to provide services to customers. Exchange rate fluctuations could materially impact the results of operations.

Outlook

According to NASSCOM, the Indian ER&D landscape has been growing at a healthy rate of 11 percent y-o-y. As an ER&D leader in the industry, this bodes well for LTTS. The entity's strategic approach is to assess the changing business needs of customers and build innovation

infrastructure to meet those needs, thereby enabling customers to gain a market share and the technology edge.

Current circumstances have presented a unique opportunity for providing unwavering support to the customers at a difficult time. LTTS has identified areas where it can support customers to see through the current challenges as well as help them come out stronger. It has launched services for the manufacturing industry to address the shift in demand with its Manufacturing Line Expansion/Re-Design/Transfer services, achieve business continuity with its AGILE Sourcing and Supply Chain services and plan healthcare for their machines with the Remote Asset Care services.

Furthermore, based on conversations with the customers and industry experts, to address the RoI disparity in the implementation of the digital initiatives, the business has carved out a Digital Advisory Practice (DAP). The practice goes beyond selling solutions and services and helps companies to architect and execute their digital roadmap with LTTS as a consulting partner.

The industry outlook points to a steady demand for ER&D-led innovation in the form of cutting-edge technology solutions that will help transform customer experiences. LTTS aspires to be the transformation agent that customers can bank upon to realize their vision and aspirations.