

# ENGINEERING THE CHANGE



*L&T Technology Services*



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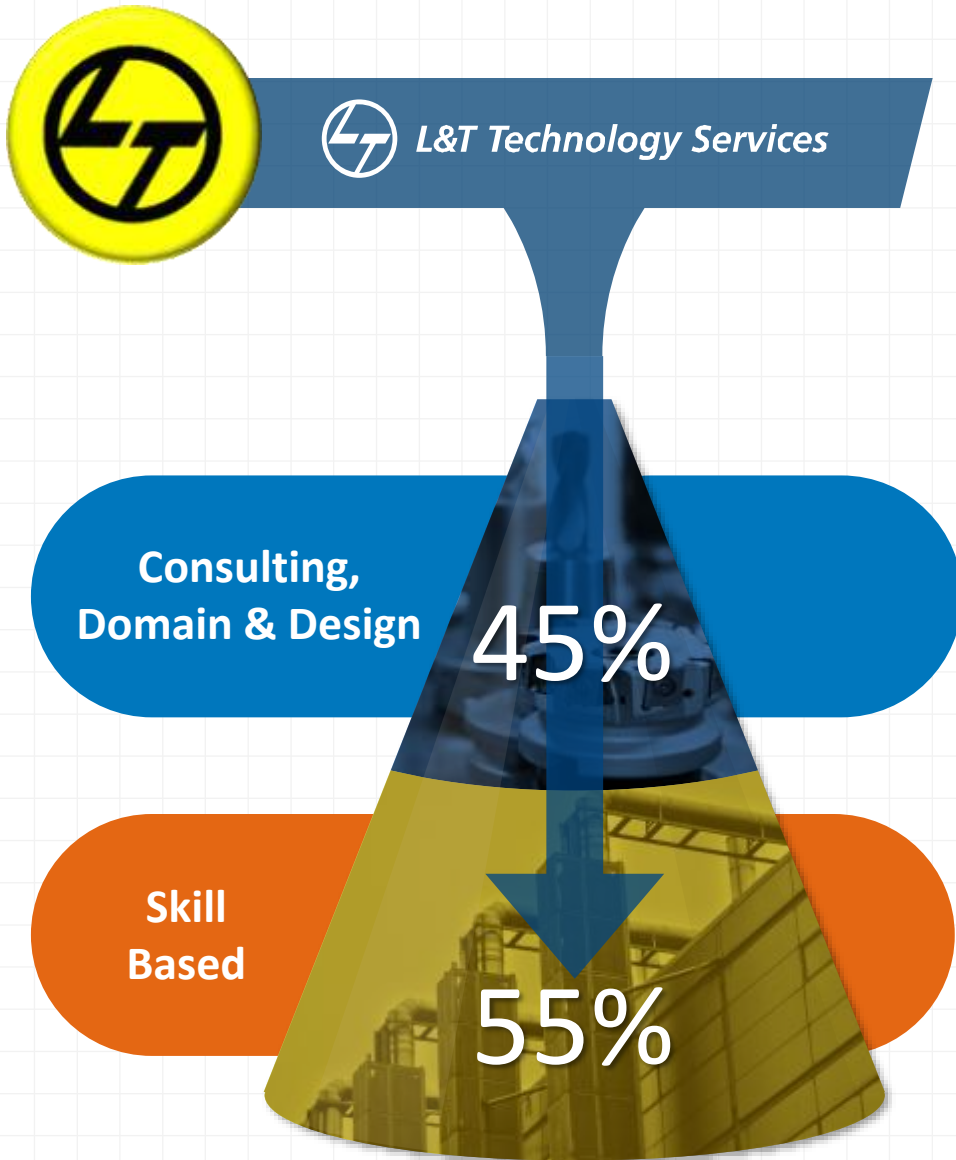
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# L&T Technology Services – At a glance

Global Leader: Pure Play Engineering Services Company



# Our Engineering heritage and multi-domain capabilities...



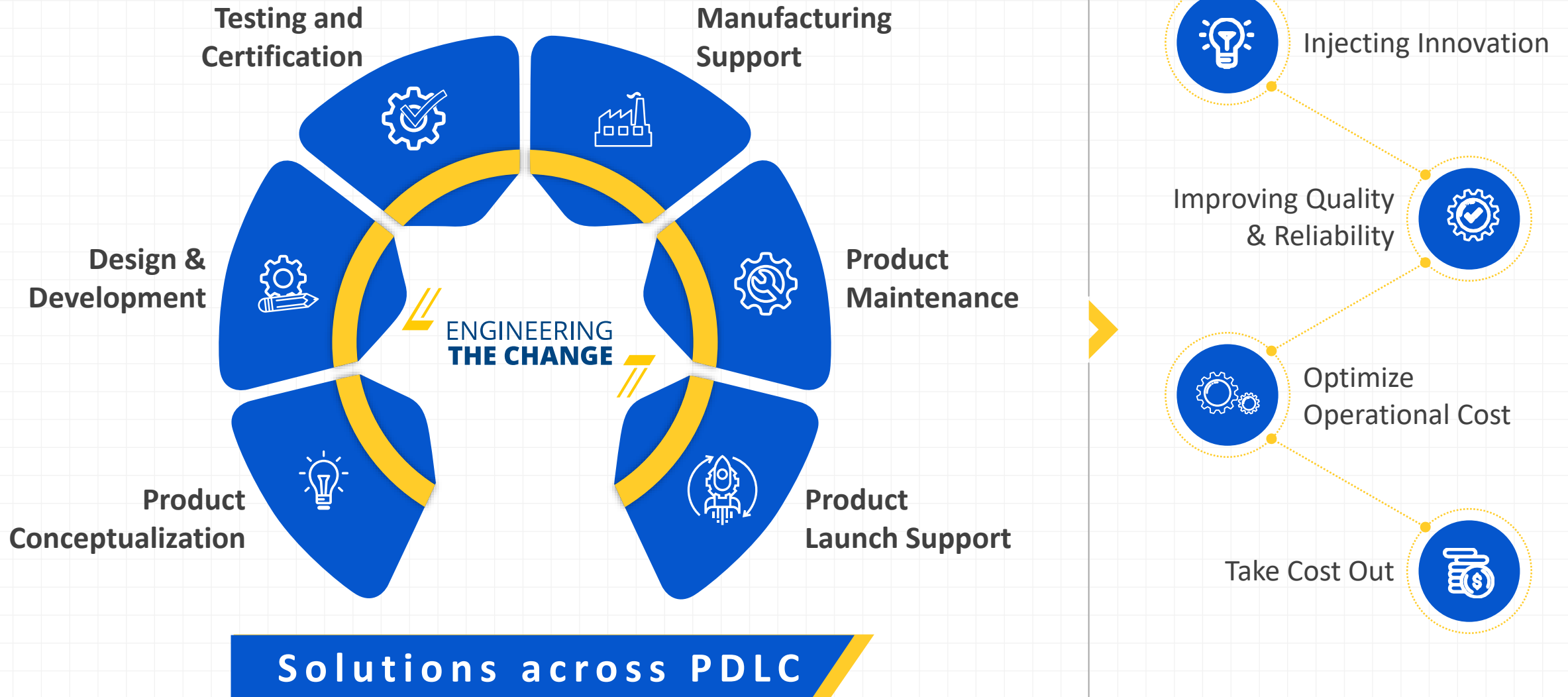
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# ...supported by best in class infrastructure



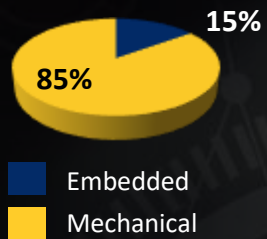
# ...allows us to be the end-end engineering partner for our clients



# LTTS Evolution...

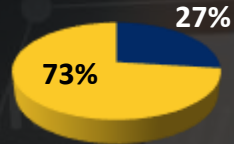
DO IT CHEAPER

Discrete business units working in silos



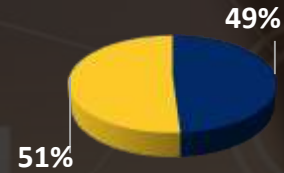
DO IT BETTER

Consolidation and building synergy



DO IT DIFFERENTLY

Building capabilities through investments



IMPROVE BUSINESS

Org and operational re-structuring

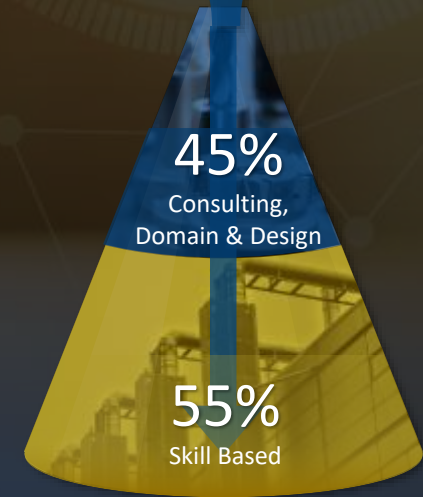


TRANSFORM BUSINESS

ENGINEERING THE CHANGE



**30%+**  
Digital Engineering Revenues

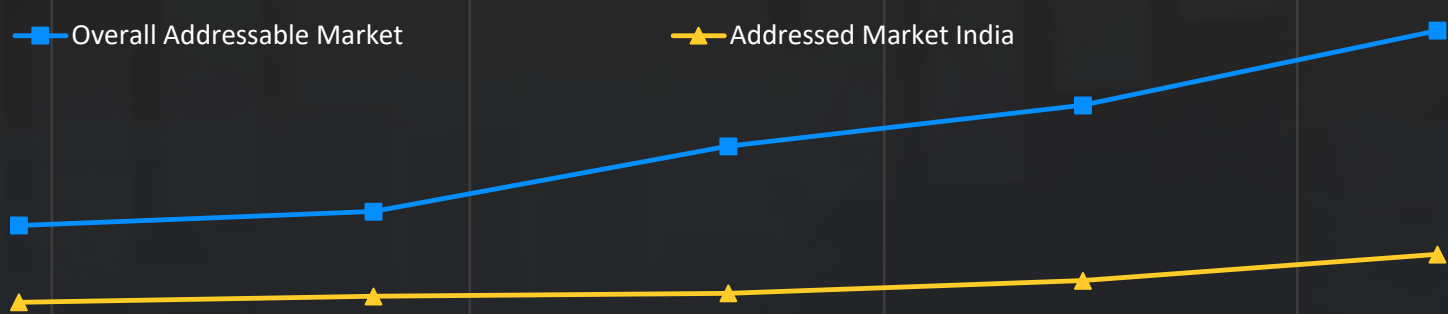


Overall Addressable Market **5.5%** CAGR 17-21

India Addressed Market **12.3%** CAGR 17-21

Overall Addressable Market

Addressed Market India



Significant Increase despite ESP growing at 10-13% annually

Pre-2009

2009

Phase 1

2012

Phase 2

2015

Phase 3

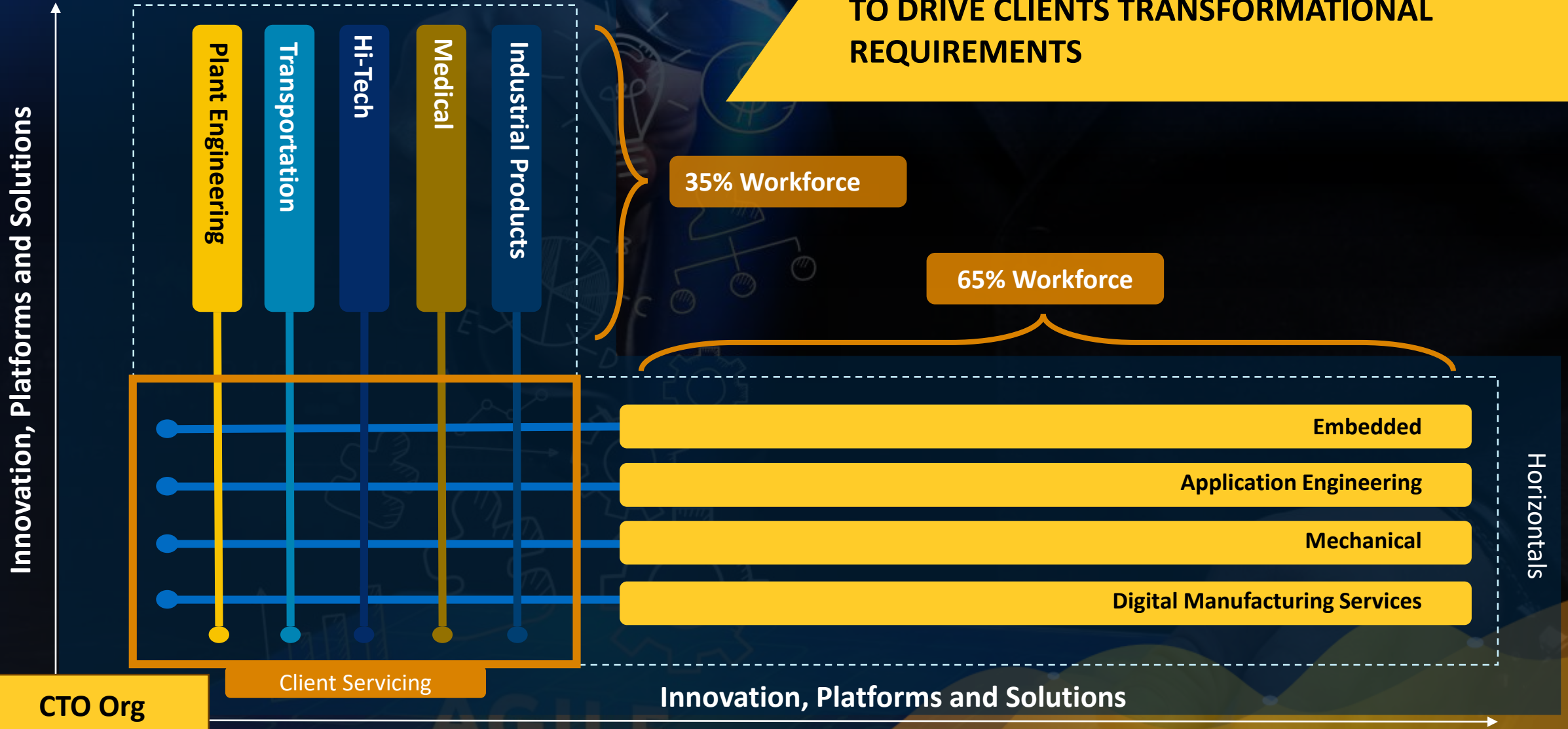
2017

Phase 4

2021

# 1 Customer requires partners with...

**AGILITY, ENGINEERING AND DOMAIN EXPERTISE TO DRIVE CLIENTS TRANSFORMATIONAL REQUIREMENTS**





## 2 Customer requires partners with...



Leaders



Other Positions



No Positions

**MULTI-VERTICAL AND MULTI-DOMAIN CAPABILITIES ENABLING TO LEVERAGE ADJACENCIES...**



### Vertical Rankings

### Horizontal Rankings

	Vertical Rankings											Horizontal Rankings				
	Auto	Off-highway	Aero	Medical	Consumer Electronics	Telecom	Semicon	Industrial	Chemicals	O&G	FMCG	IoT	IIOT	Embedded	Plant Engineering	
LTTS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
TCS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14
HCL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	11
Wipro	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓	✓	11
Altran	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	9
Quest	✓	✗	✓	✓	✗	✗	✗	✓	✓	✓	✓	✗	✗	✓	✗	4
Cyient	✗	✓	✓	✓	✗	✗	✓	✗	✗	✓	✗	✗	✗	✗	✗	3
EPAM	✓	✓	✗	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	0

# 3 Customer requires partners with...

## TRANSPORTATION

- Digital Cockpit
- Additive Manufacturing
- Autonomous Car Middleware
- Active Safety
- EV/ Hybrid
- V2X

## MEDICAL

- Real-time Remote Monitoring
- 3D Printing
- AI in Medical Imaging

## ENABLING DIGITAL PLATFORMS

5G : Enabling Next-Gen Connectivity

Augmented Reality/Virtual Reality

Cognitive Computing

(AI/Engineering Analytics/DL/ML/NLP)

Vision Based Computing

(Image Processing)

Security/Blockchain

Sensor Fusion

## INDUSTRIAL PRODUCTS

- Building management
- Digital Twin
- Energy Storage/Management
- Industrial IoT
- Condition based monitoring

## TELECOM & HI-TECH

- 5G and IoT chipset module
- ASIC - Frontend, PD
- Smart Homes & Gateways
- Next-Gen Media Streaming
- Embedded AI in chips
- OTT Solution, App Frameworks

## PLANT ENGINEERING

- Plant control mobility solution
- Digital Factory
- Integrated manufacturing & supply chain
- Plant energy management solutions

...READY 2 DEPLOY SOLUTIONS (R2DS) TO SPEED UP THEIR GTM...

# We have a marquee list of clients today ...



...which gives us a long runway for growth

RELIABLE AND PREFERRED PARTNER FOR FUTURE

51 of Top 100

Our Customers among Top R&D Spenders

117 of Top 500

Revenue

\$1.7 Trillion

12%

R&D Investment

\$75 Billion

4%

LTTS Revenues

\$376 Million

23%

T-30 Customers

6+ Yrs

Avg. Customer Relationship for T30

117 Customers

Revenue

\$5.3 Trillion

8.7%

R&D Investment

\$286 Billion

8.5%

# Industry Tailwinds for us to harness



## Transportation



### Autonomous Vehicles

Autonomous market to be worth \$556 Bn by 2026; CAGR 39.5%



## Industrial



### Industrial IoT

IIoT market to reach \$91.40 Bn by 2023, CAGR of 7.39%



## Medical



### Personalized Care

Global self-care devices market to grow at CAGR of 9%



## Hi-tech



### 5G

Global 5G Market to Reach \$105 Bn by 2023, CAGR 27%



## PE



### Digital Manufacturing

Smart Manufacturing Market to Reach \$548 Bn by 2024



### Safety Systems

Automotive Safety System market to reach \$196Bn by 2026



### Go Green

Global Energy Management market to reach \$49 Bn by 2023



### Regulation

Federal regulation on Medical Devices on the rise



### Media OTT

OTT market to be worth \$62Bn by 2020



### AI in Supply Chain

AI in Supply Chain Market worth \$10 Bn by 2025



### Exper - tainment

Infotainment market to expand at CAGR 6.36% till 2024



### Condition Monitoring

Machine CBM market to reach \$3.50 Bn by 2024, CAGR of 6.7%



### Active Implants

Active implantable medical devices market at \$28.8 Bn by 2023



### Semiconductors

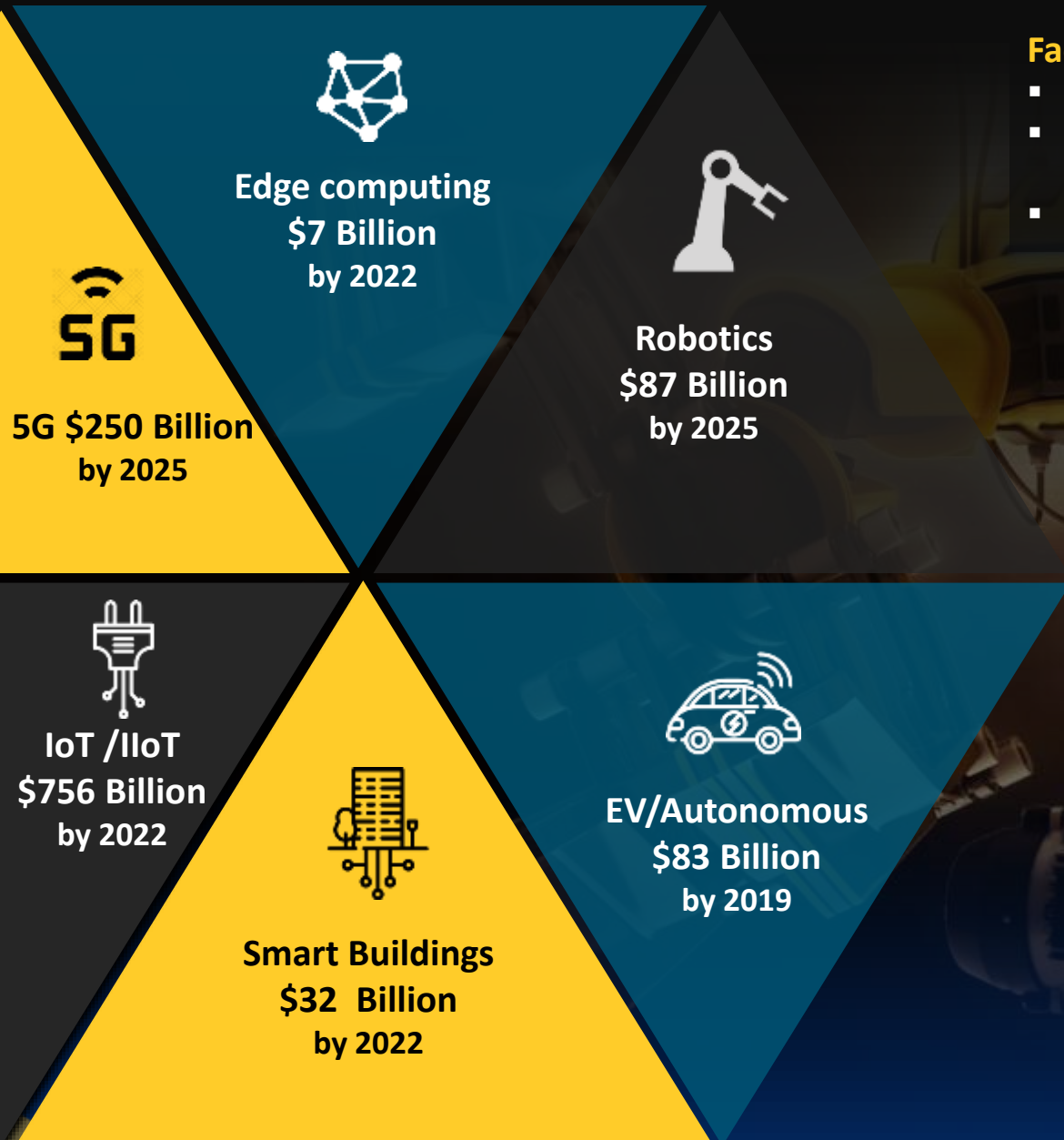
7nm Semiconductor processor market on the rise



### Heterogenous Product mix

Refineries Tweaking the Mix, diversifying products

# Focus areas for the future



## Factories of Future

- Process control & Automation
- Intra/Interenterprise communication
- Connected supply chain

## eHealth

- Remote Health Monitoring & Robotics
- Smarter Medication

## Energy Management

- Grid Management

## Automotive

- Autonomous Driving
- Digitization of transport & Logistics
- Information Society on the road

## Media & Entertainment

- On-site Live Event Experience
- UHD Content
- OTT Enablement



# Transportation: Co-creating the next-generation of mobility

Revenue: USD235mn+

(Q3FY19 annualized)

An automotive engineering service provider with strong expertise across the value chain, strong innovation credentials and a solid presence in the off-highway vehicle segment.

-HfS Research,  
Automotive Engineering Services Blueprint

- Automotive practice rated in Winner Circle by HfS Research
- Off-highway practice rated as the Leading ESP for 5 consecutive year by Zinnov Management Consulting.
- 10+ State-of-the-art labs across Infotainment, ADAS/ Autonomous drive, Electric vehicles, EMI/EMC, Smart Manufacturing, Design & Tear Down.



# Telecom & Hi-Tech : Strengthening Connectivity

**Revenue: USD200mn+**  
(Q3FY19 annualized)

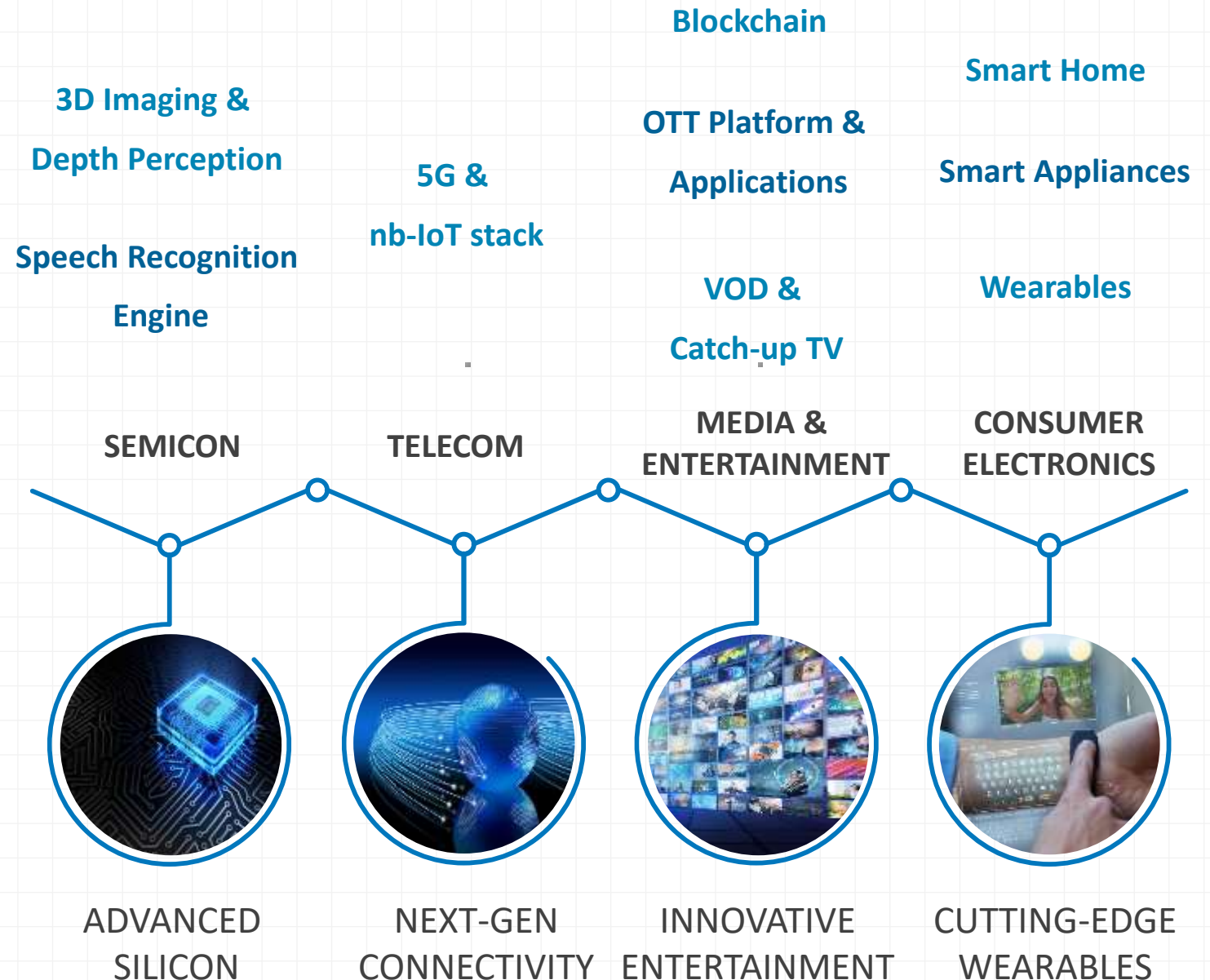
LTTTS stood out for clients' very positive impressions of its operations and service delivery. Reference clients have praised LTTTS's capability for design to manufacturing solutions.

-HfS Research  
Embedded & Semicon Engineering Services Blueprint

Rated as one of the leading global ESPs in embedded space by Zinnov Management Consulting

Rated among the top 5 embedded & semicon ESPs globally by HfS Research

20+ partnerships and 40+ in-house solutions, IPs and accelerators.





# Industrial Products: Infusing Technologies

Revenue: USD150mn+  
(Q3FY19 annualized)

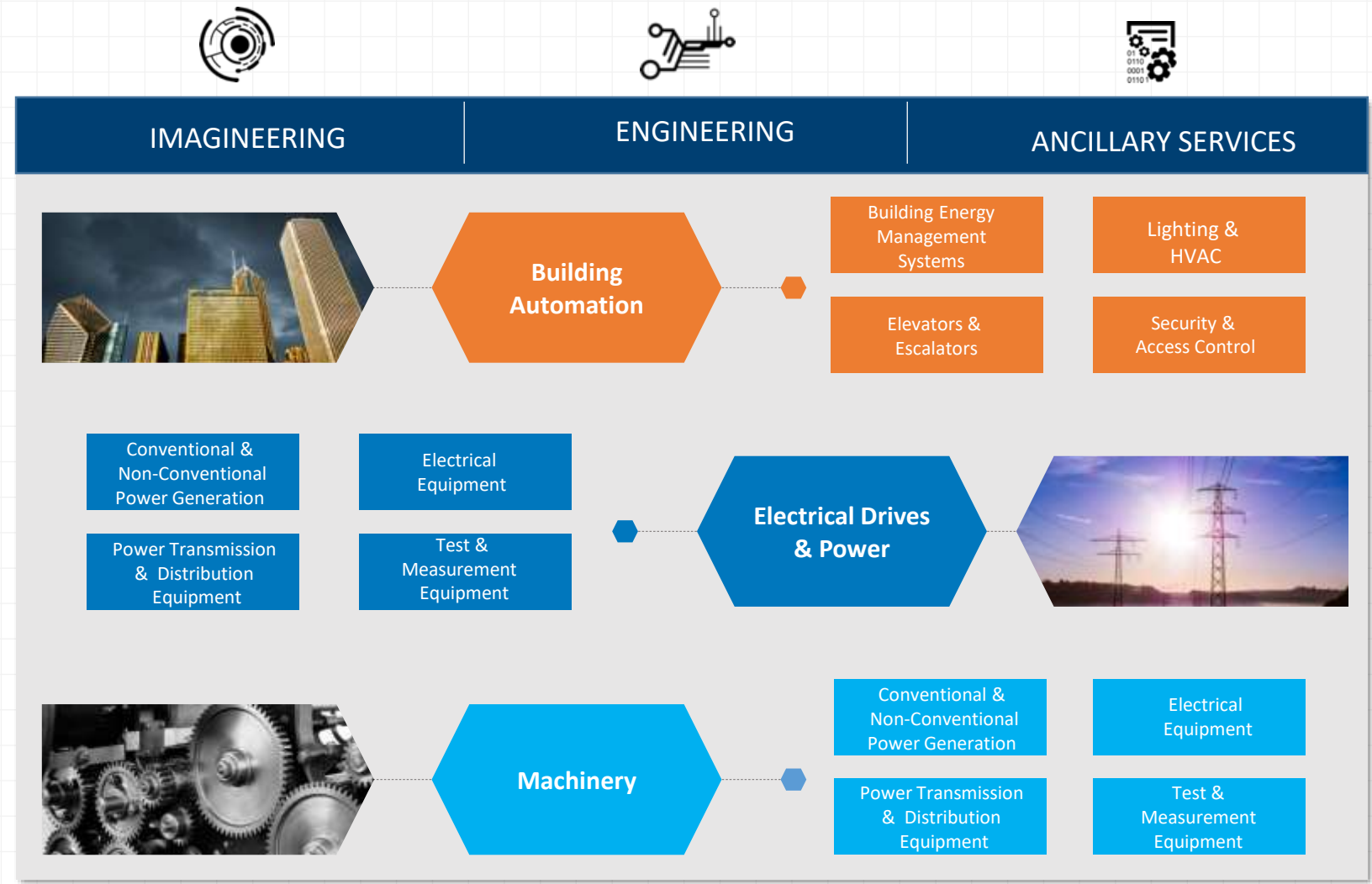
L&T Technology Services' deep multi-vertical expertise, rich IP portfolio such as UBIQWeise™, iBEMS, W.A.G.E.S and innovation focused multi-domain labs gives it a clear advantage over its peers.

-Zinnov Management Consulting,  
Zinnov Zones 2017 for IoT Technology Services

Rated as #1 engineering services company for the last 7 years by multiple industry experts

Rated in the Winner Circle by HfS Research for deep domain capabilities in IIoT

20+ labs and over 150+ authored/co-authored patents



# Process Industry : Extending Industry 4.0

Revenue: USD105mn+  
(Q3FY19 annualized)

L&T Technology Services' deep understanding of Plant Engineering and track record of making products and manufacturing smarter, established it in the Winners Circle

-HfS Research  
Industry 4.0 Services Blueprint Assessment

Rated in the Winner's Circle by HfS Research in their Industry 4.0 Blueprint

Extensive global reach and expertise with geographically distributed resource base working across 200+ global manufacturing locations

Consumer  
Packaged Goods

Speciality  
Chemicals

Energy &  
Utilities

## Industry 4.0 Enablers

- IoT and M2M Consulting
- Analytics
- Mobility
- Cloud

## Operations & Business Management

- ERP and EAM
- Applications and Systems
- Integration Services
- Testing Services
- AMS and ADM

## Infrastructure

- Hosting & Cloud Services
- End User Computing
- Network
- Security

## Monitoring and Control

- SCADA
- DCS
- Control Panel
- PLCs

## Data Acquisition

- CNC
- Robots
- Alarms
- Gateways
- RTU
- HMI
- Historian

## Engineering Expertise

- Product lifecycle Management
- Mechanical Design Expertise
- Electrical Design Expertise
- Embedded System Engineering
- Plant Designing
- Control and Automation
- Industrial & Device Security

## Sensors and Instrumentation

- RFID Equipment
- Sensors
- I/O Devices
- Device Integration
- Embedded System

# Medical Devices: Touching Lives

Revenue: USD50mn+

(Q3FY19 annualized)

The ability to pro-actively build and demonstrate proof-of-concepts, take risks, and explore new ways of doing things has created stellar results for our partnership with LTTS.

- Leading American Medical Devices & Lifesciences conglomerate

Rated as one of the leading global ESPs for Medical devices for the past 3 years consecutively

Innovation focused culture with 50+ patents to credit

cGMP focused manufacturing practice

## Patient Mobility

- Critical Care Bed
- Patient Handling
- Surfaces
- Wheel Chairs



## Therapeutic & Life Science

- Oncology
- Drug Delivery
- Inhalable
- Histopathology
- Hematology
- Mass Spectroscopy



- Endo
- Vascular
- Wound Closure
- Ultrasound Systems
- CT Scanners
- MRI Scanners
- Patient Monitoring



- Joint Replacement
- Trauma
- Biologics
- Dental Equipment
- Orthodontic



## Surgical & Diagnostic

## Musculoskeletal

# LTTS Platforms & Solutions

Trigger to these platforms are new age technologies like IoT/IIoT, Edge Computing, Autonomous Car & Smart Building trends

## Current - Platforms & Solutions

**AiKno™**  
LTTS AI Framework

**nBon™**  
NB-IoT – 3GPP Std Protocol

**i-BEMS™**  
LTTS Smart Building Soln

**Integrated MCare™**  
Predictive Maintenance

**VLSI – IPs**  
Semiconductor IPs

**Connected Platform**  
IoT Platform

## Automation Frameworks

**COGMATION**  
Device Testing Framework

**VANGEN**  
Automotive Imaging Tool

**WFA**  
Work Flow Automation Tool

## New Platforms/IP Exploration

**Autonomous Vehicle SW**

**Compute Vision Platform**

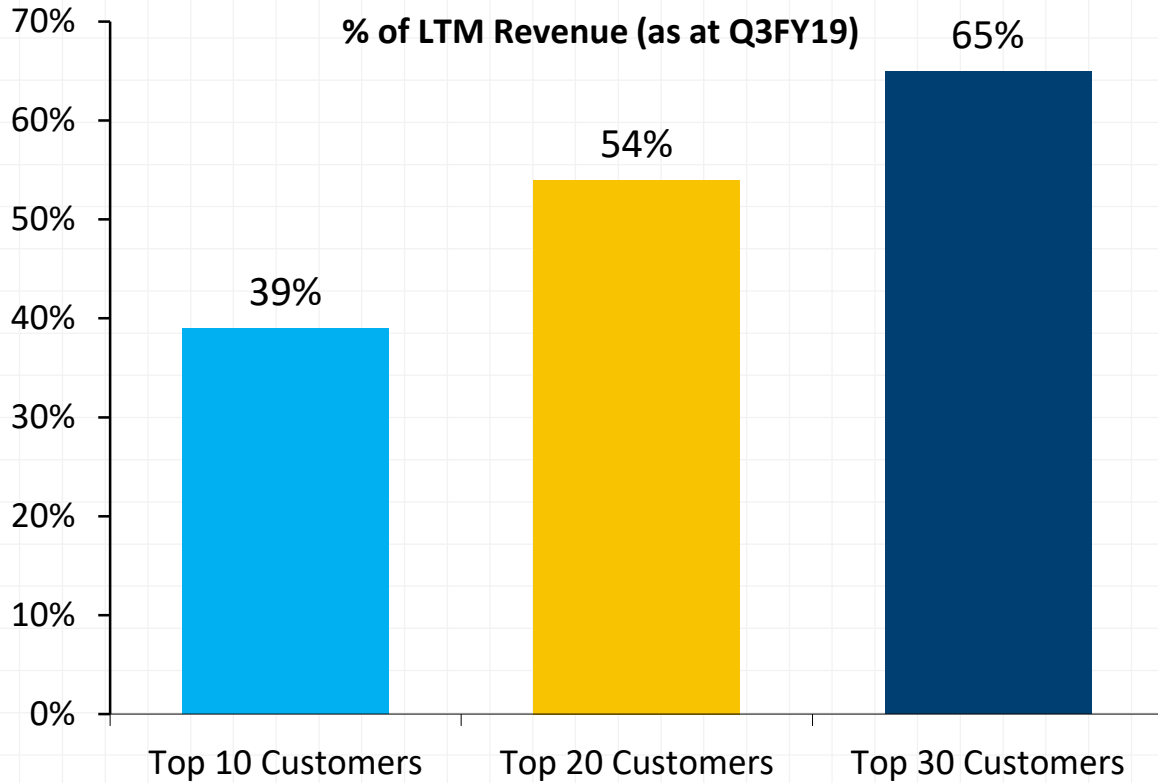
**Car Security**

**AI in Hardware**

**Robotics**

# Diversified Customer Base

## Top Clients Contribution

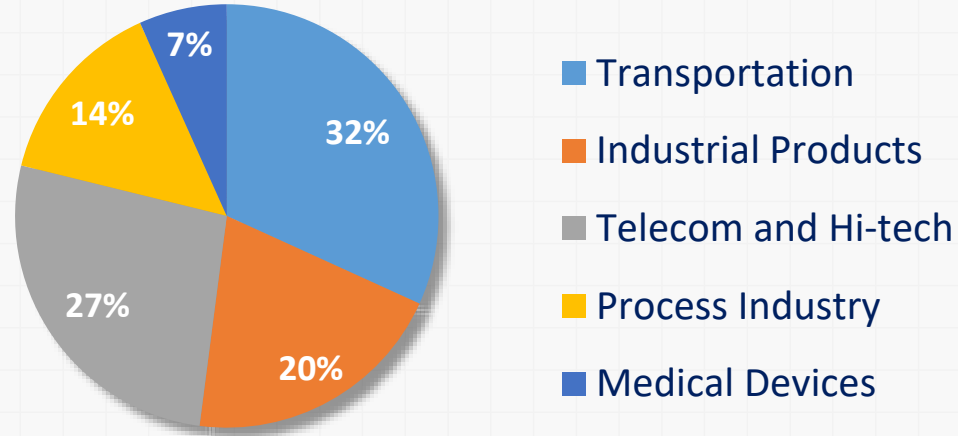


## Scale-up of million dollar clients

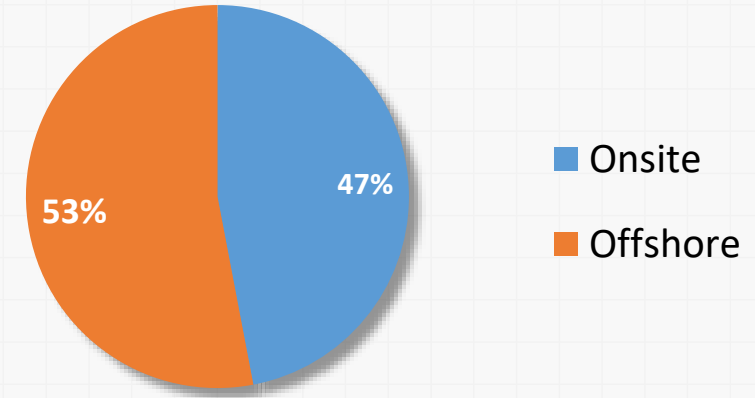
Customer Revenue (USD Mn)	FY16	FY17	FY18	Q3FY19
50 Million +	0	0	0	2
30 Million +	0	1	3	3
20 Million +	3	3	4	5
10 Million +	11	9	12	16
5 Million+	28	30	31	39
1 Million +	72	79	84	98

# Diversified Business and Geographical Mix (Q3 FY19)

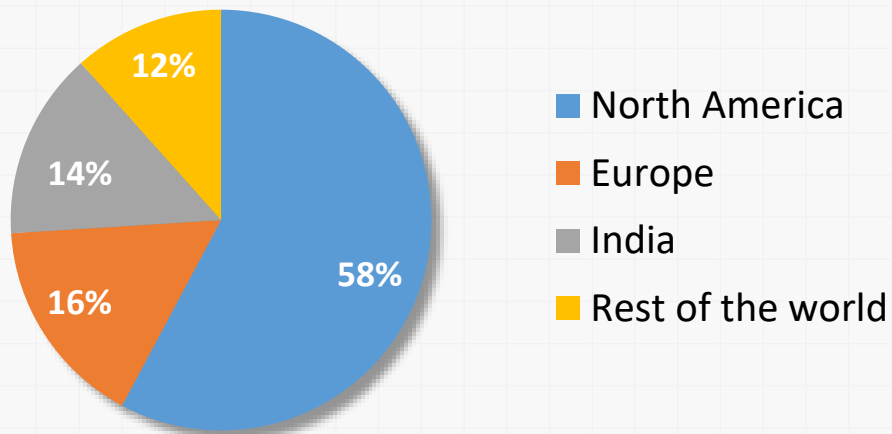
## By Vertical



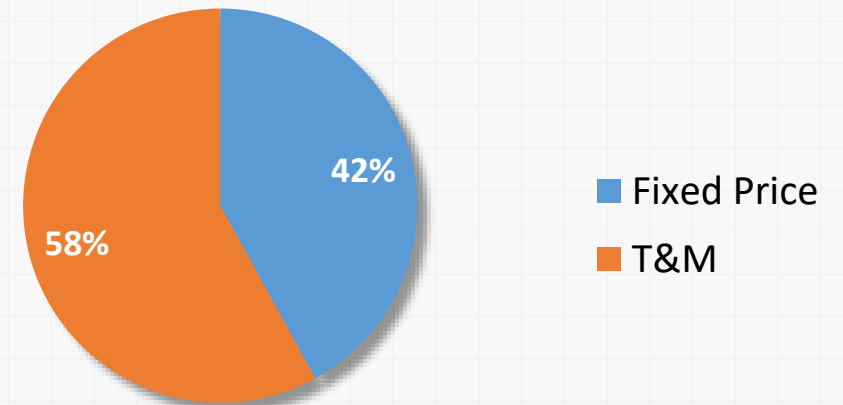
## Onsite vs. Offshore Split



## By Geography



## Fixed Price vs. T&M



# Performance Highlights

FY15	FY16	FY17	FY18	Parameters	Q1FY19	Q2FY19	Q3FY19
428	468	484	580	Revenue from Operations (USD mn)	169	177	186
26,186	30,662	32,483	37,471	Revenue from Operations (INR mn)	11,522	12,661	13,169
15.2%	16.9%	18.0%	15.5%	EBITDA Margin	17.0%	18.1%	18.4%
13.4%	15.0%	16.1%	13.0%	EBIT Margin	14.8%	15.9%	16.5%
252	845	561	1,910	Other Income (INR mn)	978	546	353
3,109	4,191	4,249	5,060	Net Income (INR mn)	1,975	1,910	1,856
11.9%	13.7%	13.1%	13.5%	Net Income Margin	17.1%	15.1%	14.1%
61.1	65.5	67.1	64.6	Avg. Exchange Rate (USD/INR)	68.2	71.5	70.9

# Financial performance

Amount in INR mn

Income Statement	Q3FY18	Q2FY19	Q3FY19	QoQ	YoY
Revenue	9,691	12,661	13,169	4.0%	35.9%
Cost of sales	6,892	8,732	9,269		
<b>Gross Profit</b>	<b>2,799</b>	<b>3,929</b>	<b>3,900</b>	<b>-0.7%</b>	<b>39.4%</b>
Selling, General & Administration Expenses	1,314	1,640	1,483		
<b>EBITDA</b>	<b>1,485</b>	<b>2,289</b>	<b>2,417</b>	<b>5.6%</b>	<b>62.8%</b>
Depreciation & Amortisation	145	270	239		
<b>EBIT</b>	<b>1,340</b>	<b>2,018</b>	<b>2,178</b>	<b>7.9%</b>	<b>62.6%</b>
Other Income, net	426	546	353		
Income tax expense	501	646	670		
Minority Interest	2	8	5		
<b>Net Income</b>	<b>1,263</b>	<b>1,910</b>	<b>1,856</b>	<b>-2.8%</b>	<b>47.0%</b>
<b>Margins (%)</b>					
Gross Margin	28.9%	31.0%	29.6%		
EBITDA Margin	15.3%	18.1%	18.4%		
EBIT Margin	13.8%	15.9%	16.5%		
Net Income Margin	13.0%	15.1%	14.1%		
<b>Earnings Per Share</b>					
Basic	12.36	18.51	17.86		
Diluted	12.00	18.17	17.58		



# Financial performance

Amount in INR mn

Balance Sheet	FY18	Q3FY19
Assets		
Property and equipment	1,251	1,273
Intangible Assets and Goodwill	5,844	6,285
Accounts Receivable	9,623	11,063
Unbilled Revenues	2,154	3,054
Cash & Investments	3,749	4,841
Other current assets	3,081	2,371
Other non-current assets	1,349	1,663
<b>Total Assets</b>	<b>27,051</b>	<b>30,550</b>
<b>Liabilities and Shareholders' Equity</b>		
Shareholders' Funds	19,364	22,205
Short term borrowings	702	524
Other current liabilities	6,935	7,527
Other non-current liabilities	47	272
Minority Interest	3	22
<b>Total Liabilities</b>	<b>27,051</b>	<b>30,550</b>

Amount in INR mn

Cash Flow Summary	FY18	YTD FY19
Net cash provided by operating activities	4,136	4,800
Capex	-511	-501
<b>Free Cash Flow</b>	<b>3,625</b>	<b>4,299</b>
Free Cash flow to Net Income (%)	72%	75%

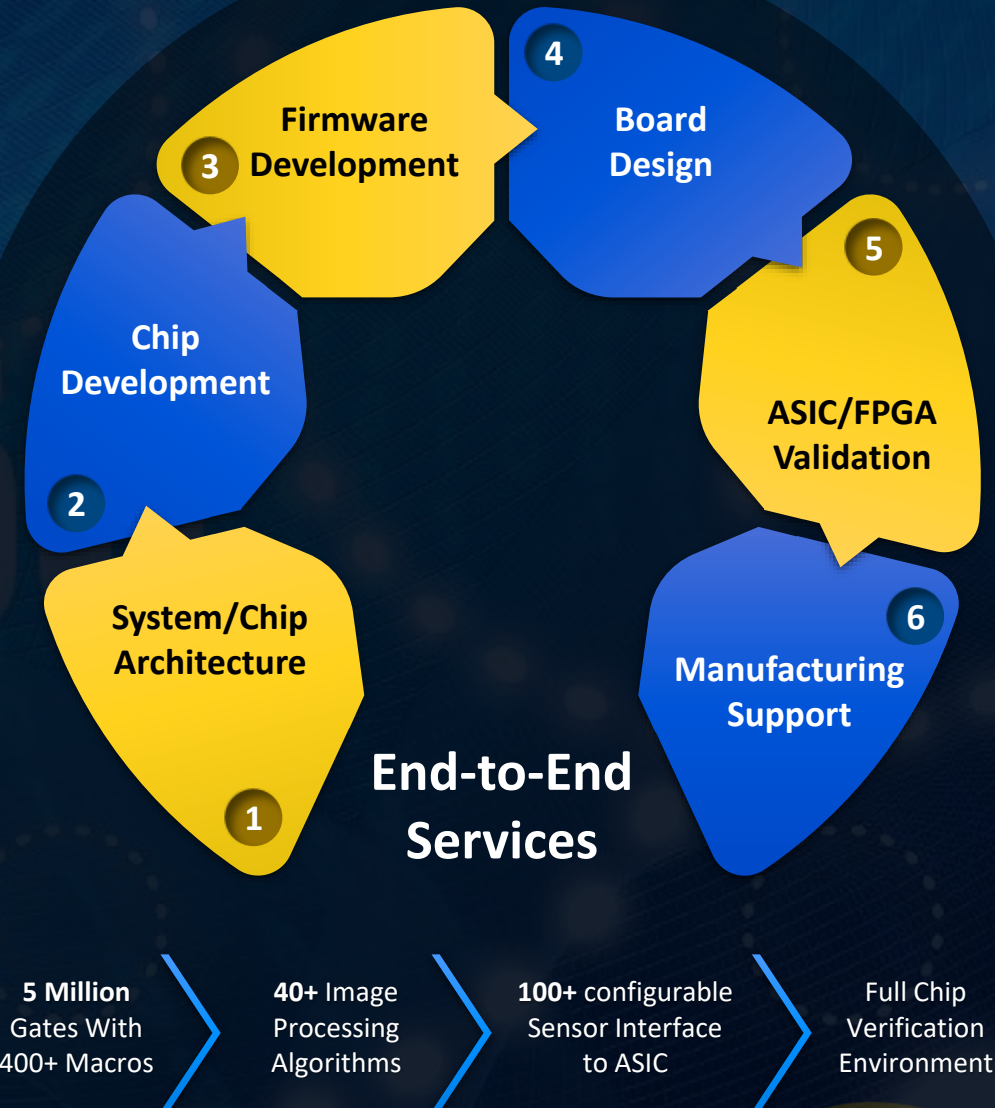
# Case Study: Turnkey SoC

## Project Highlights

- Complete physical design and verification including mass production of image processing SoC
- Executed chip development plans using low power process methodology
- Achieved high chip processing efficiency by optimizing die size, pin count, and power/memory/performance/sensor requirements

Application: Industrial Camera

LTTS proprietary VLSI IPs



# ARCHITECTING THE SMARTEST CAMPUS IN THE WORLD

Powered by *iBEMS™* - Ingenious platform for smart buildings

## WHAT WE ENABLED

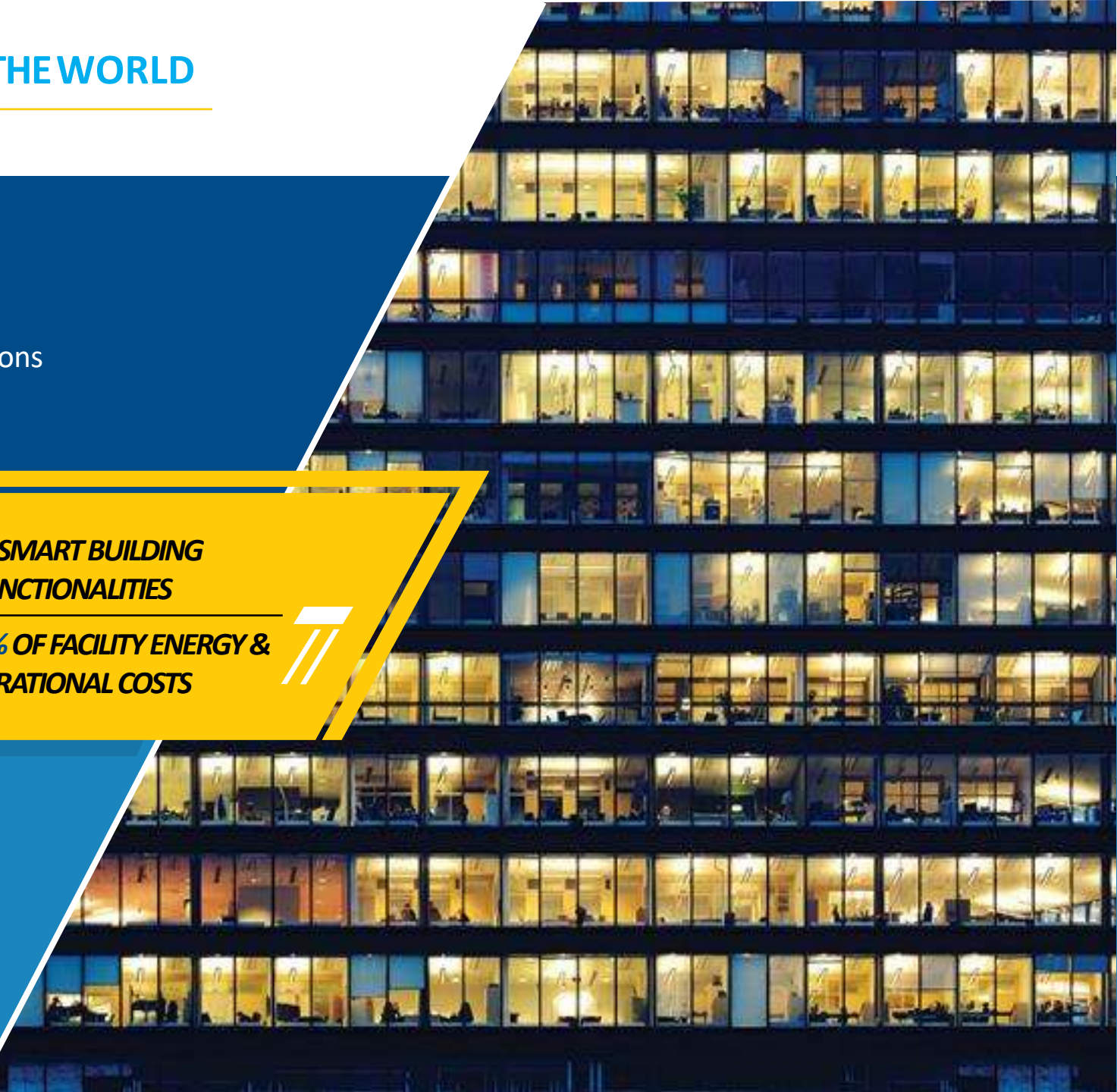
- Integrated View of complete facility operations
- Enabling Net Zero Buildings and environmental certifications
- Predictive Maintenance of Building Assets
- Customized experiences for building occupants

**100+ SMART BUILDING  
FUNCTIONALITIES**

**SAVES >30% OF FACILITY ENERGY &  
OPERATIONAL COSTS**

## OUR EXPERTISE

- Master Platform Integration
- Edge & Cloud Analytics
- Machine Learning
- Custom User Experiences



# ASSET CONDITION MONITORING ON THE SHOP FLOOR

## WHAT WE ENABLED

- Predictive Maintenance of Critical Manufacturing equipment – identifying & fixing issues long before they occur.

This involved-

- IoTification of machinery
- Analysis of critical parameters on the edge & cloud
- Real-time notifications on any anomalies

*20% REDUCTION IN DOWNTIME*

*PAPERLESS ROOT-CAUSE ANALYSIS*

*PROACTIVE HEALTH NOTIFICATIONS*

## OUR EXPERTISE

- Machine Sensorization
- Predictive Analytics
- Data Encryption
- Edge Computing

