Tata Technologies

Play on the fast-growing ER&D market

Information Technology ▸ IPO Note ▸ **November 19, 2023**

Tata Technologies (Tata Tech) is a leading global engineering services company that offers product development and digital solutions (including turnkey solutions) to global OEMs and their tier-1 suppliers. The company's offerings focus on manufacturing-led verticals – Automotive (75% of the revenue), Aerospace, and transportation and construction heavy machinery (TCHM). Its areas of expertise include product engineering and manufacturing engineering in the mechanical domain (such as body engineering), while it is adding capabilities in the software and embedded engineering segments. The IPO is completely an offer of sale (OFS) of 60.85mn shares. Tata Tech's growth trajectory over FY16-23 remains slower than peers', but has seen improvement in the last three years because of traction in select accounts. Weakness in a large client in H1FY24 due to near completion of the large full-vehicle development projects may weigh on the company's near-term performance which, in our view, is adequately captured in the IPO valuations. At the upper end of the price band, Tata Tech is being valued at ~32x its FY23 EPS vs. peers' such as LTTS (~40x its FY23 EPS), Tata Elxsi (~69x its FY23 EPS), KPIT (~110x its FY23 EPS), and CYL (~37x its FY23 EPS).

Financial Snapshot (Consolidated)

Y/E March (Rs mn)	FY20	FY21	FY22	FY23	H1FY24
Revenue	28,521	23,809	35,296	44,142	25,267
EBIT	3,712	2,935	5,599	7,264	4,150
PAT	2,515	2,392	4,370	6,240	3,519
Adj. EPS (Rs)	6.0	5.7	10.5	15.4	8.7
EBITM (%)	13.0%	12.3%	15.9%	16.5%	16.4%
Revenue growth (%)	-4.3%	-20.0%	47.3%	15.7%	33.8%
Adj. EPS growth (%)	-28.2%	-4.9%	82.7%	47.2%	35.7%
RoE (%)	13.9%	12.0%	19.8%	23.7%	26.4%
RoCE (%)	13.4%	11.2%	18.5%	22.2%	24.7%

Source: RHP, Emkay Research

Large exposure to the automotive vertical offers strong headroom for growth

Tata Tech caters to the automotive vertical—the second-largest in terms of global R&D spend (USD180bn in 2022) with third-party outsourcing mix of ~10% (USD17-18bn). A focal point for Tata Tech is body engineering, constituting ~40% of the total third-party outsourced spending. Although Tata Tech concentrates its outsourced spending in key areas, the emerging sectors of hybrid and electric mobility/powertrain and AD-ADAS align with competitors such as KPIT, TELX, and LTTS. Growing investment in electric /hybrid vehicles underscores the need for lightweight architecture, a domain in which Tata Tech with its mechanical expertise would play a significant role. Further, expenditure on mechanical engineering by OEMs/Tier-1 players is more established and likely to witness increased outsourcing compared with software-related spending. OEMs/Tier-1 players tend to retain software-related expenses in-house, as these areas are still evolving and their differentiation lies in the software embedded within the vehicles. Moreover, there are cross-selling opportunities in the aerospace and TCHM verticals, which typically follow a spending trajectory similar to that of the automotive vertical, albeit with a lag.

Marquee list of clients; reduced dependency on anchor clients to drive consistent performance

While Tata Tech's capabilities were predominantly developed via its association with Tata Motors and JLR over time, it has successfully expanded presence to other OEMs/Tier-1 players, which include new energy companies like VinFast. The company now serves 35 traditional OEMs/Tier-1 suppliers and 12 new-energy vehicle companies as its customers. Its major accounts comprise 7 of the top-10 and 12 of the top-20 global automotive ER&D spenders, and 5 of the 10 prominent new-energy ER&D spenders globally. It has reduced its dependency on anchor clients (Tata Motors and JLR) to 46.0% in H1FY24, from 54.4% in FY20. The company has recently been empaneled by Airbus, which is expected to become a strong growth avenue, and diversify its revenue base further.

Education services: Untapped upskilling opportunity in India

There is an increasing need to equip engineers and technical staff with emerging skill-sets with the advent of Industry 4.0. The need for upskilling is evident, with studies showing that investment in upskilling could strengthen the country's economy by USD570bn and generate additional employment of 2-2.5mn by 2030. According to Zinnov, Tata Tech is currently the only player positioned to address the needs of educational upgradation in India with its global partner ecosystem and system-integration capabilities.

Issue Details

Price Band (Rs/sh)	475-500
Bid Lot	30 shares and its multiples thereof
Face Value (Rs)	2
Issue Opens	22-Nov-2023
Issue Closes	24-Nov-2023
Issue Size (mn shares)	60.85
Issue Size (Rs bn)	28.9-30.4
Shares o/s pre-issue (mn)	405.67
Shares o/s post-issue (mn)	405.67
Post issue market cap (Rs bn)	192.7-202.8

Issue Structure

QIBs	50%
Non-Institutional Category	15%
Retail	35%

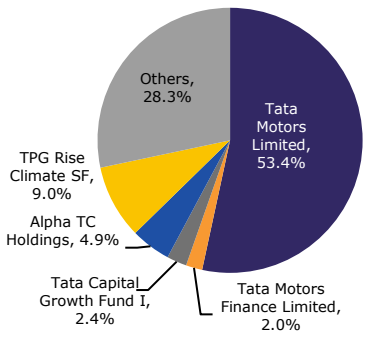
*employee reservation portion: 2.02mn shares; TML shareholders reservation portion: 6.08mn shares

Objects of the issue

a) Offer for sale of 60.85 mn shares

Selling shareholders:
TML: 46.27mn shares
Alpha TC Holdings: 9.72mn shares
Tata Capital Growth Fund I: 4.86mn shares

Shareholding pattern (%) Post issue



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Industry overview

ER&D services are a set of services offered to enterprises on activities that involve the process of designing and developing a device, equipment, assembly, platform, or application such that it may be produced as a product for sale through software development or a manufacturing process. Players in the ER&D services industry typically focus on the design, development, testing, rollout, and maintenance aspects of the product and process development chain, and not on mass manufacturing.

The ER&D services market comprises product engineering services and process engineering services. Product engineering services commonly address the product development lifecycle for companies, while process engineering services involve services to assist in the production of facilities and processes that produce value-added outputs and components through plant design engineering, manufacturing engineering, industrial engineering, and process-control systems.

Exhibit 1: ER&D services provided across various industry verticals

	Verticals												
	Manufacturing					Hi-tech				Services			
Service lines	Automotive	Aerospace & Defense	Industrial & Heavy Machinery	Energy & Utilities	Pharma & Medical devices	Software & Internet	Semiconductor	Consumer Electronics	Telecom	FMCG & Retail	Healthcare Payers & Providers	BFSI	Media & Entertainment
Mechanical/Electrical engineering	✓	✓	✓	✓	✓		✓	✓	✓				✓
Embedded engineering	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Manufacturing engineering	✓	✓	✓	✓	✓		✓	✓	✓	✓			
Plant engineering	✓	✓	✓	✓	✓		✓	✓	✓	✓			
Software engineering	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Source: RHP, Emkay Research

Global ER&D services spending is expected to register a 10% CAGR over CY22-CY26E

In 2022, ER&D spending continued its upward trend as enterprises, committed to sustaining innovation while funding it through cost optimization and productivity improvements, have maintained their focus on future-proofing and transformation, with an intensified emphasis on digital engineering. The engineering services and technology solutions industries are characterized by rapid technological changes, evolving industry standards, changing client preferences, and new product and service introductions. For 2021, the global ER&D spend is estimated at USD1.8trn, of which USD810bn was attributed to digital engineering spend. Despite macro headwinds such as the extended geopolitical situation, continued high inflation, and expected recession, ER&D spending is expected to stay resilient and continue to grow steadily. The digital engineering spend mainly comprises spending on new-age technologies like IOT, blockchain, 5G, AR/VR, cloud engineering, digital thread initiatives, advanced analytics, embedded engineering, and AI/ML. Further, the digital engineering spend is expected to post a CAGR of ~16% from CY22 to CY26.

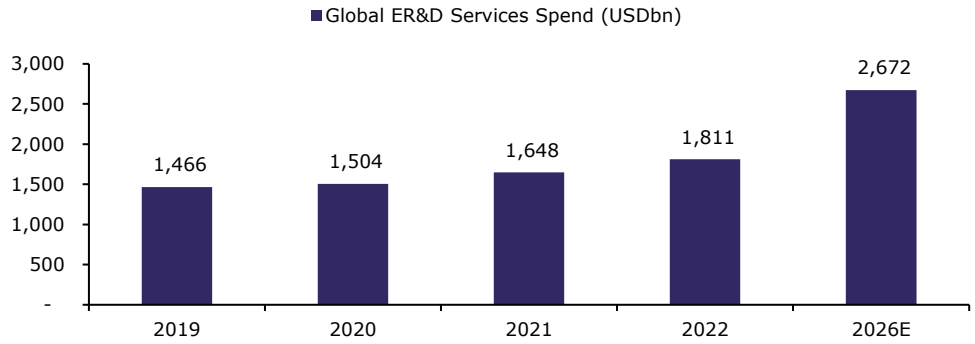
Global ER&D spend is highly consolidated with Z1000 enterprises (defined as the top 1000 global ER&D spenders across more than 20 verticals by Zinnov), which account for ~85% of the overall ER&D market.

Manufacturing-led verticals have been the largest contributors and account for almost half of the global ER&D spending. In terms of expenditure, the automotive sector is the largest manufacturing ER&D vertical, and the second largest ER&D vertical overall, accounting for ~10% of global ER&D spend for 2022. Hi Tech-led verticals currently account for ~40% of the global ER&D spend. Software and internet is the largest ER&D vertical, accounting for ~20% of the global ER&D spend and is among the fastest-growing verticals. Services-led verticals account for ~12% of global ER&D spend, primarily driven by digital engineering investments. Though this vertical makes up the smallest portion of the ER&D spend pie, it is the fastest-growing category.

Among geographies, North America has the highest share of global ER&D spend and is expected to grow the fastest due to the higher penetration of software and internet firms in the region.

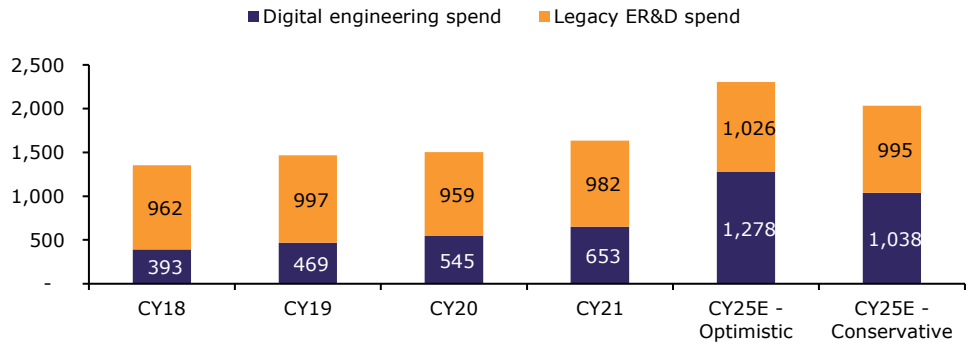
The APAC region led by increased ER&D spending by Southeast Asian enterprises and high digital engineering spend from hi-tech enterprises is expected to overtake Western Europe. China accounts for more than a tenth of the global ER&D spending, with automotive, semiconductor, and software and internet accounting for ~50% of the region's spend. China is also the largest market for battery EVs, with companies like BYD and Nio continuously increasing their R&D expenditure.

Exhibit 2: Global ER&D services spend is expected to post a CAGR of 10% over CY22-26E



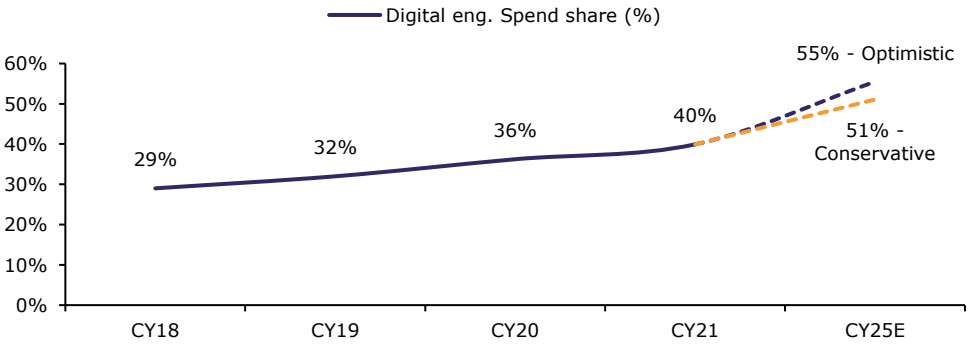
Source: RHP, Emkay Research

Exhibit 3: Digital engineering spend is expected to register a ~16% CAGR over CY22-26E



Source: RHP, Emkay Research

Exhibit 4: Share of digital engineering spend is expected to be ~50% by CY25



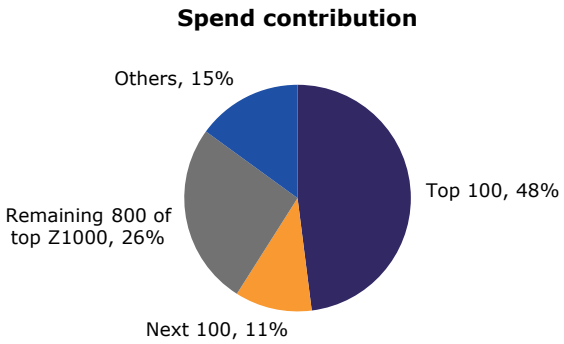
Source: RHP, Emkay Research

Exhibit 5: Key difference between IT and ER&D services model – Significant headroom for the ER&D industry to deliver stronger growth compared with IT services

Particular	IT Services	ER&D Services
Key service lines	1) Application services; 2) Infrastructure services	1) Product development (Mechanical, Embedded, Software); 2) Product sustenance and support; 3) Manufacturing engineering, MRO and network engineering
Strategic partnerships	Activities involving cost reduction and integration	High trust, mission-critical, revenue-generating partnership
Deal structure and size	Long duration with T&M or fixed-price engagement models	Mid to long-term strategic partnerships; Discrete work packages often involving integration with client teams
Growth headroom	15% of the global IT spend is currently outsourced	Only 5.5% of the global ER&D spend is currently outsourced
C-suite relationship	CIO – Often low involvement, brought in later in the process	CTO/Product owners/Head of Engineering with often Day 0 involvement
Win factors	Global delivery model, competitive rates	Knowledge assets (IP/Solutions), R&D infrastructure, data protection, specialized talent
Barriers to entry	More replaceable, rate-card focused	Deeply embedded projects with specific skillsets, high switching cost

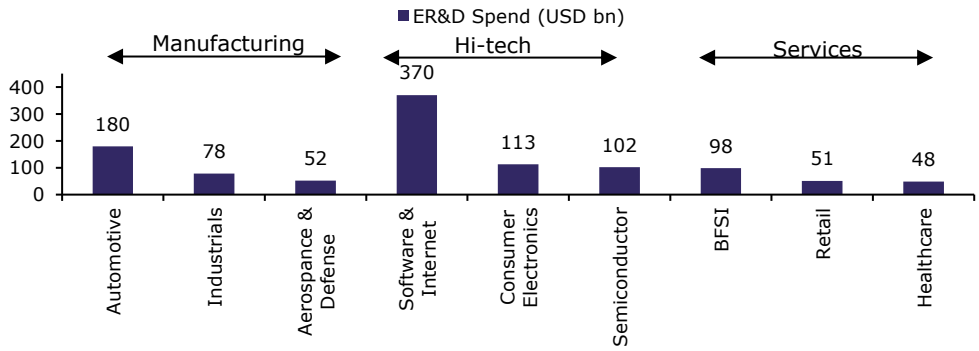
Source: RHP, Emkay Research

Exhibit 6: ER&D spend of the top 1,000 enterprises in 2022



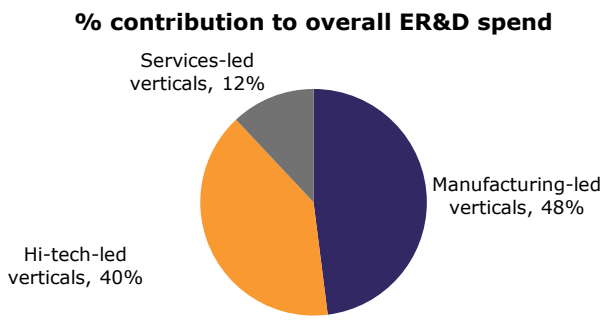
Source: RHP, Emkay Research

Exhibit 7: ER&D spends (USD bn) across industry verticals in 2022



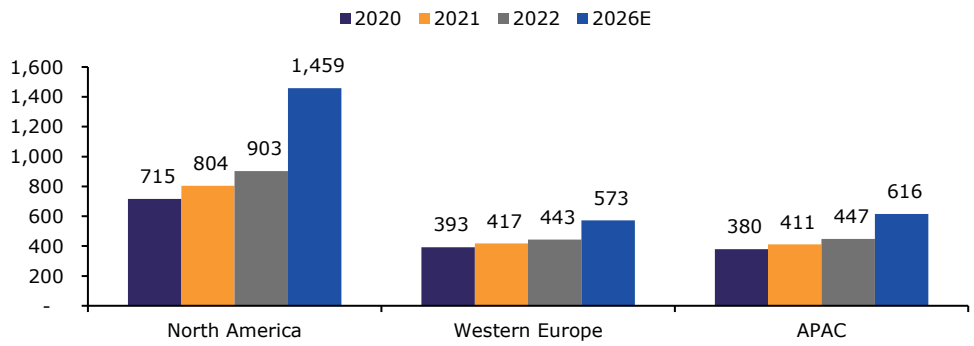
Source: RHP, Emkay Research

Exhibit 8: Manufacturing-led vertical contributed ~48% to ER&D spend in 2022



Source: RHP, Emkay Research

Exhibit 9: ER&D spend (USD bn) across geographic regions



Source: RHP, Emkay Research

Exhibit 10: Industry-wise ER&D spend and intensity

USD bn	CY13	CY14	CY15	CY16	CY17	CY18	CY19	CY20	CY21	CAGR (%)
Top 2500 R&D spend	538	607	696	742	736	823	904	909	1,094	9.3%
Revenue	16,723	17,973	17,687	17,910	18,448	20,352	21,018	18,952	23,090	4.1%
R&D as a % of revenue	3.2%	3.4%	3.9%	4.1%	4.0%	4.0%	4.3%	4.8%	4.7%	
Top 5 industries' R&D spend	**359**	**409**	**483**	**520**	**525**	**591**	**651**	**658**	**797**	**10.5%**
Pharmaceuticals & Biotech.	97	110	132	144	139	154	167	171	213	10.3%
Software & Computer Services	51	63	79	88	94	118	143	154	200	18.7%
Technology Hardware & Equip.	87	95	111	120	117	128	140	140	164	8.3%
Automobiles & Parts	84	95	108	114	117	128	133	125	138	6.4%
Electronic & Electrical Equip.	41	46	52	53	57	64	69	68	83	9.0%
Top 5 industries' revenue	**5,184**	**5,767**	**6,397**	**6,862**	**7,141**	**7,567**	**7,925**	**7,482**	**9,144**	**7.4%**
Pharmaceuticals & Biotechnology	669	755	844	953	912	968	1,049	1,029	1,292	8.6%
Software & Computer Services	489	627	725	814	1,117	1,086	1,213	1,245	1,605	16.0%
Technology Hardware & Equipment	1,085	1,180	1,271	1,377	1,348	1,522	1,557	1,544	1,940	7.5%
Automobiles & Parts	1,978	2,172	2,465	2,588	2,590	2,708	2,754	2,412	2,713	4.0%
Electronic & Electrical Equipment	961	1,034	1,092	1,129	1,174	1,282	1,352	1,252	1,595	6.5%
Top 5 industries' R&D spend as a % of revenue	**6.9%**	**7.1%**	**7.5%**	**7.6%**	**7.3%**	**7.8%**	**8.2%**	**8.8%**	**8.7%**	
Pharmaceuticals & Biotechnology	14.5%	14.6%	15.7%	15.1%	15.2%	15.9%	15.9%	16.6%	16.5%	
Software & Computer Services	10.4%	10.1%	10.9%	10.8%	8.4%	10.8%	11.8%	12.4%	12.5%	
Technology Hardware & Equipment	8.0%	8.0%	8.7%	8.7%	8.7%	8.4%	9.0%	9.1%	8.5%	
Automobiles & Parts	4.2%	4.4%	4.4%	4.4%	4.5%	4.7%	4.8%	5.2%	5.1%	
Electronic & Electrical Equipment	4.3%	4.5%	4.8%	4.7%	4.9%	5.0%	5.1%	5.4%	5.2%	

Source: European Commission, Emkay Research

Exhibit 11: Key characteristics of service providers across different geographies

	India	Eastern Europe	Western Europe	North America
Total spend in 2022 (USD bn)	25	8	37	16
Characteristics	Large IT services companies and pure-play ER&D services	Focused on software engineering and ISV clients	Large key vertical-focused service providers	Large onshore staffing organizations
Focus verticals	Diversified	Software/Internet, Telecom, Automotive	Automotive, Aerospace, Energy	Aerospace, Automotive, Software, Telecom
Key players	HCL, LTTS, TCS, Tata Tech	DXC, EPAM Softserve	Alten, Bertrandt, Capgemini, Tieto	Allegis, Belcan, CDI
Customer segments	North American and European end-markets	Nearshore outsourcing for European companies as well as U.S. companies	Local Europe customers meeting onshore needs and staffing requirements	Local R&D units of large companies
Advantages	Availability of next-generation digital talent pool; Annual graduate STEM talent pool of ~2.14mn, providing an opportunity to scale; Attractive billing rates when compared with peers from other nations	Emergence as a strong nearshore presence due to the existence of skilled workforce; Favorable ecosystem and costs to build scalable teams	Onshore presence for manufacturing heavy verticals	Vibrant tech start-up ecosystem
Avg. billing rates (USD/FTE/year)	35K-45K	60K-70K	90K-110K	90K-110K

Source: RHP, Emkay Research

Key growth drivers in ER&D spending

a) Focus on sustainability: Global enterprises have clearly defined timelines and targets to incorporate carbon net zero and/or carbon neutrality as sustainability is gaining an increasingly important role in developmental plans. This has led to an enhanced focus on energy-efficient product design and clean energy transition for operations across industries. Countries across the globe are announcing plans to phase out internal combustion engine (ICE) powered vehicles, with electrification-powered modes of transport expected to replace them. Across industries, electrification is expected to be at the core of sustainable decarbonization, offering the most effective way to cut carbon dioxide emissions from end-use sectors such as heating and cooling, transport, and industrial applications.

b) Shrinking innovation cycles: As consumers evolve, the market is forced to produce more innovative products to meet their demands at a faster pace. This has led to shortened product lifespans and rapidly shrinking product-innovation cycles. From 2022 to 2026, automakers are projected to introduce an annual average of 61 new models, which is 50% more than the average number of new models introduced in the preceding two decades.

c) Digital thread: Digital technologies are changing the way the manufacturing sector is developing, building, and servicing products around the globe. These technologies create value by connecting machines through a 'Digital Thread' across the value chain — making it possible to generate, securely organize, and draw insights from disparate sources of data. Product lifecycle management (PLM), manufacturing execution systems (MES), and enterprise resource planning (ERP) solutions are the fundamental aspects of product realization. The cornerstone of any 'Digital Thread' is strong digital integration across the digital foundation of any manufacturing enterprise, which includes PLM, ERP, and MES. Additionally, challenges faced in manufacturing operations such as the lack of collaboration between complex and scattered infrastructure, lack of flexibility due to individual dependency on separate platforms, restrained decision-making due to the lack of integration between channels, and restricted data visibility due to the lack of centralized monitoring platforms and high costs of connectors are further driving the need for integration. This IT/OT convergence enables real-time manufacturing insights about a product's performance and use – from design to production, sale, use, and disposal. Accordingly, many large manufacturing firms are increasing their focus on factory automation by leveraging the Industry 4.0 technology stack. The need for 'Digital Thread' is further accentuated by macro factors like supply chain disruptions, capital re-allocation needs owing to demand swings, reconfiguration of management and manufacturing flows due to remote work, and increasing focus on the environmental impact of manufacturing.

d) Growing product complexity: Technology advancements are accelerating at a rapid pace across industries, leading to an increasing level of product complexity – from the development phase to aftermarket support. For example, in the automotive industry, digital technologies have percolated across the value chain in the wake of changing consumer patterns. Connected experiences, for instance, have replaced driving experience as a car-maker's primary source of competitive advantage. Car-makers are also investing in digitizing their sales and services operations while offering a range of add-on services such as battery-as-a-service (BaaS) and over-the-air updates.

e) Advent of Generative AI: The rise of GenAI is spurring a wave of fresh investments as companies aim to enhance engineering efficiency and pioneer intelligent products and services. While still in its infancy, GenAI carries a transformative potential and is ready to reshape industries. This surge in innovation is fueled by increased funding, paving the way for numerous cutting-edge applications. This technology is on the verge of transforming business operations and products, heralding a new era of innovation and efficiency.

ER&D spend outsourced to third-party ESPs

Industry trends and technological advancements are transforming the way companies develop and manage products as well as their ability to provide engaging user experiences, leading to changes in business models, operations, and supply chains. As the pace of innovation accelerates, enterprises across industries are turning to trusted third-party engineering services providers (ESP) for support. These service providers with comprehensive end-to-end capabilities help enterprises upgrade and service existing products and processes, as well as develop new products and processes to better compete and drive competitive differentiation. Technological advancements and the pace of innovations in areas of cloud, 5G, AI/ML,

traditional/established and new-energy enterprises are leveraging the ESP ecosystem. The demand from traditional enterprises is primarily focused on addressing capacity requirements as they look to balance their R&D investments between traditional and new products and services. As enterprises focus on building new core capabilities, they carve out traditional products through end-to-end relationships with service providers. Verification and validation, product sustenance, and end-of-life management offer the highest outsourcing opportunities. At the same time, new-energy enterprises require capacity and experience across domain areas and are open to leveraging the ESP ecosystem for ER&D outsourcing initiatives.

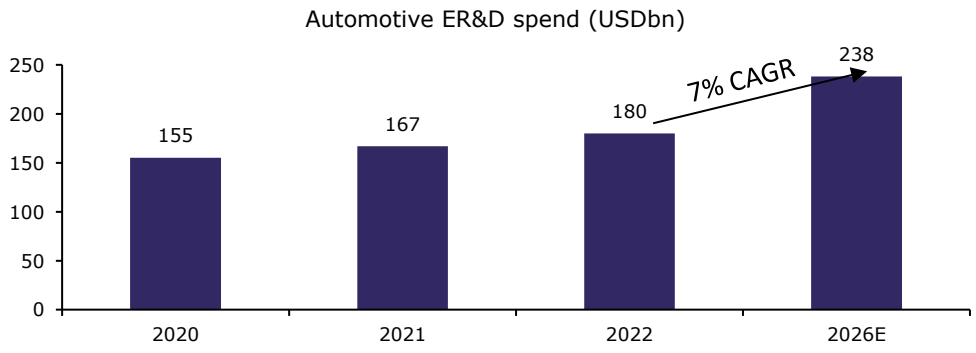
The key growth drivers for increased outsourcing opportunities include –

- Cost savings: Driven by cost reduction and product lifecycle pressures, OEMs are increasingly focused on developing effective outsourcing strategies that drive significant improvement in global engineering and ER&D operations. At the same time, they also look to leverage cost-arbitrage benefits from ESPs based out of low-cost countries like India and Romania.
- Need for skilled talent: Rapid innovation and the emergence of new-age technologies and processes are transforming the way products are designed, manufactured, and serviced. Increasing focus on sustainability, embedded and digital engineering, Digital Thread and factory automation has made new product development dynamic and more challenging. The shortage of skilled talent in these domains has accelerated the adoption of outsourcing to third-party ESPs by multiple large manufacturing firms.
- Shortening product development timelines: Rapid advancement of technology and faster innovation have translated to a drastic reduction in product development timelines. This increases the need for partnerships with experienced third-party ESPs with end-to-end capabilities in traditional as well as new-age products.
- Faster time to market: To realize faster time-to-market, enterprises are increasingly relying on the presence of a skilled workforce, which is geographically diversified to ensure round-the-clock product innovation and development.

Global Automotive ER&D market

The global automotive ER&D spend currently stands at USD180bn and is the largest contributor among manufacturing verticals, amounting to ~10% of the overall ER&D spend. It is estimated to register a ~7% CAGR to USD238bn by 2026. This spend is highly concentrated among the top 20 companies, accounting for ~73% of the global spend. Digital engineering spend in 2022 amounted to USD46bn and is expected to register a ~16% CAGR to USD85bn by 2026. Digital engineering comprises ADAS, infotainment, telematics and connected, cloud engineering, Digital Thread initiatives, hybrid and electric, embedded engineering, digital manufacturing, and digital twin-powered body design among others. In the past, companies in automobile manufacturing have rationalized their R&D budgets due to unfavorable macroeconomic and production trends to reduce their costs; but given the strategic nature of product development, OEMs continue to invest in product development even in recessionary environments.

Exhibit 12: Automotive ER&D spend is expected to post a 7% CAGR over 2022-26E



Source: RHP, Emkay Research

As demand for autonomous and connected technologies grows due to increasing pressure from regulations on passenger safety and cost pressures on OEMs, the company will continue to

connected and autonomous technologies. As the shift to meeting carbon targets intensifies, electrification is expected to be the top focus area for the automotive industry. Global automakers plan to spend an estimated USD1.2trn through 2030 to develop and build EVs and shift away from combustion engines. Additional growth drivers include a heightened focus on smart manufacturing, connecting the digital thread and enhanced customer experience.

Key trends driving ER&D spend in the automotive industry

Global automotive players are ramping up R&D investments across the broader theme of ACES being, autonomous, connected, electrification and shared mobility. This is further enabled by the transition to alternative propulsion systems – especially for EVs. As new technologies disrupt the automotive sector, ER&D complexity has increased, requiring specialized support. The focus of the automotive industry has been shifting from R&D lean manufacturing, fuel efficiency, material science, basic infotainment to electrification, fully autonomous, smart infotainment, automated production, and Factory 4.0.

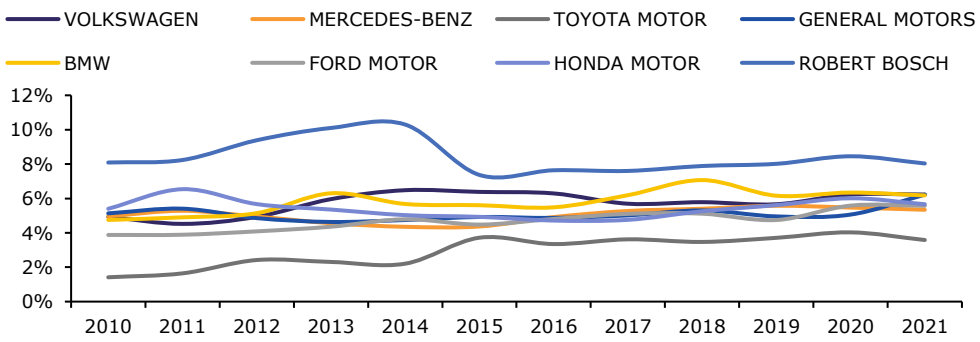
Autonomous: Automotive players are keen to provide advanced safety and autonomous driving with environmental sensor technologies. This includes AI/ML to provide enhanced levels of vehicle motion control.

Connected: OEMs are looking to create connected vehicles that can communicate bi-directionally with other systems outside of the car. The connectivity in a vehicle enables infotainment, safety, roadside assistance, diagnostics efficiency, navigation, and payments. Connectivity is among the prime differentiators for passenger vehicles.

Electrification: Electrification is expected to be the top focus for the automotive industry as the sale of EVs has increased by more than 55% annually in 2022 vs. 2021 (more than doubled in 2021 vs. 2020) and the focus on meeting carbon targets has intensified. Further, incentivization policies by governments across the globe are accelerating the transition towards EVs.

Shared mobility: The sharing of transportation services and resources among users has gained importance over the last few years with growth of the mobility industry.

Exhibit 13: ER&D spend (as a % of sales) of top automotive companies



Source: European commission, Emkay Research

Automotive outsourced ER&D market

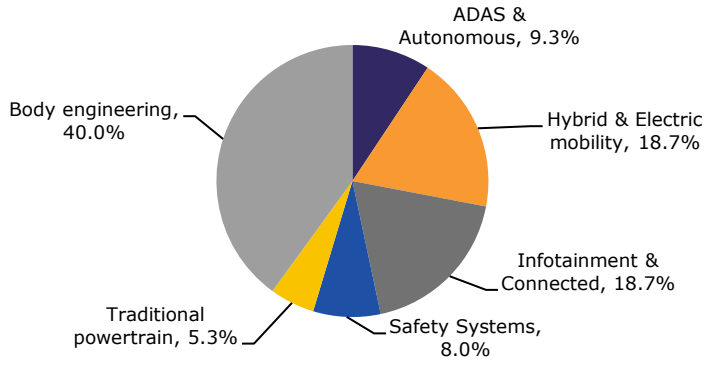
The automotive outsourced ER&D market is pegged at USD18-20bn in 2022 (~20% of the overall outsourced spend) and is expected to grow at a faster rate than overall automotive ER&D spending during 2022-2026.

With the increasing adoption of digitalization and high requirements for technology-enabled skills in the automotive industry, a lack of skilled workforce is expected to drive the outsourcing opportunity to plug the growing skills gap. This is expected to translate into an opportunity with the expertise of ESPs and their ability to build scalable engineering teams crucial for automotive enterprises with supply-side constraints plaguing automakers.

As companies focus on ACES initiatives, they seek to outsource body engineering segments completely to third-party service providers. Further, body engineering presents the largest opportunity for ESPs, accounting for more than 40% of the outsourced spend. Further, hybrid and electric mobility are expected to be the fastest growing sub-segments in the outsourced market, with enterprises looking to work with ESPs with full-body EV capabilities.

Traditional OEMs typically look to have increased autonomy over the product development process for new models as it is core to the enterprise. However, once the first model is out, the propensity to outsource work to the ESP ecosystem is higher. At the same time, multiple new-age OEMs (for example – Canoo, VinFast, Fisker, Li Auto, Nikola, NIO, and Rivian) have collaborated with and outsourced work to ESPs for new products as they focus on reducing product development time and cost.

Exhibit 14: Automotive outsourced ER&D market (USD bn) in 2022



Source: RHP, Emkay Research

Aerospace and Defense

The aerospace sector is experiencing a notable resurgence following the challenges posed by the COVID-19 pandemic. With air travel gradually rebounding and global demand for aviation services increasing, aerospace companies are reinvigorating their R&D efforts. According to Zinnov, ER&D spend for the aerospace and defense industry for the year 2022 stood at USD52bn and is estimated to grow by USD10bn to reach USD62bn in 2026. Currently, the highest spend comes from Europe, accounting for ~48% of the overall spend, followed by North America. France is a key geography, accounting for more than 20% of the overall ER&D spend in this industry. The top 10 aerospace ER&D spenders account for more than 65% of the overall spending of the industry.

The aerospace outsourced ER&D market stood at USD9-10bn for 2022, with service providers being leveraged across the value chain. The outsourced ER&D opportunity for this industry is estimated to be over USD8bn by 2025.

Growth in ER&D spend is driven by several factors. Post-COVID, there is a renewed focus on R&D within the industry, as companies seek to innovate in areas such as digitalization, sustainability, and improving manufacturing throughout to meet increased demand. The pandemic has led to a shift in focus towards narrow-body aircraft, as well as an increase in the demand for air cargo and passenger-to-freighter conversions. The MRO segment was impacted by plummeting passenger demand, but the overall outlook is positive as passenger air travel recovers.

Aerospace enterprises are focusing on digitalization to reduce costs, including shop-floor intelligence, smart supply chain, and predictive maintenance. Digital technologies are finding use cases all the way from asset tracking and inventory management to digital MRO, and the ER&D service provider ecosystem is being leveraged for digital thread enablement.

Aerospace tends to follow innovation in the automotive vertical. There is a growing interest in the use of hybrid and electric propulsion systems in the aviation industry, as advances in electric car technology have led to improvements in batteries, electric motors, and other hardware. Key aircraft and component manufacturers (for instance, Airbus, Boeing, GE, and Pratt & Whitney) have recently announced capacity expansion plans and new manufacturing plants to address aircraft backlog and meet customer requirements.

Transportation and Construction Heavy Machinery (TCHM)

The global TCHM ER&D spend was pegged at USD43bn in 2022 and is estimated to grow to USD49bn by 2026. The TCHM service provider outsourced ER&D market is currently pegged at USD2.5-3.0bn and is expected to grow to USD3.5-4.0bn by 2026. Mechanical design and manufacturing engineering are the key outsourced sub-segments of the TCHM industry.

The TCHM industry is investing in various digital engineering initiatives to improve asset utilization and optimize performance. Key focus areas include smart factories, electrification, and connected equipment. While TCHM industry lags behind the automotive sector in innovation by 3-5 years, it has similar regulatory, engineering and technology challenges, which will accelerate the demand for outsourced engineering services. Key trends for the industry's future include electrification, autonomous fleet, connected equipment, and reduced carbon footprint. OEMs are also looking to increase revenue and bring new products to market faster, reduce costs, improve customer experience, and rapidly scale up production and accelerate product development. The COVID-19 pandemic has resulted in rapid adoption of digitalization initiatives by off-highway and heavy engagement equipment OEMs as well as with digital connectedness and performance optimization emerging as key use cases.

Education services: Untapped upskilling opportunity in India

With the advent of Industry 4.0, there is an increasing need to equip engineers and technical staff with emerging skillsets. Studies by the World Economic Forum (WEF) in 2021 indicated that 92% of the companies surveyed wished to reskill their employees. Although India has a robust talent supply, the need for skill development is imminent. This requires upskilling on a national scale, especially in the fields of engineering and technology. The need for upskilling is evident with studies showing that investments in upskilling could strengthen the country's economy by USD570bn and generate additional employment of 2.0-2.5mn by 2030.

The demand-supply gap in tech talent is a global phenomenon. The current gap in India entails a huge opportunity to upskill the current supply of engineers and technical staff to meet future demand. According to an analysis by NASSCOM and Draup, there is a need to upskill nearly 1.4-1.9mn engineers to meet the demand in 2026.

According to Zinnov, Tata Tech is currently the only player positioned to address the needs of educational upgradation in India with its global partner ecosystem and system integration capabilities.

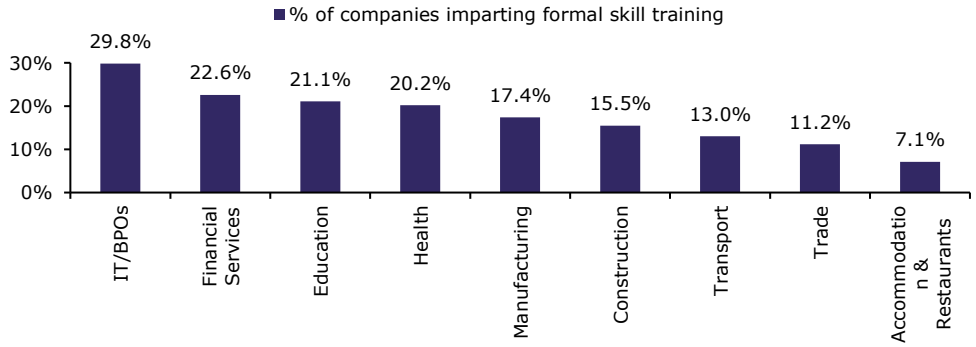
Increased manufacturing focus on education and upskilling

Rapid industry transformation and increased focus on new-age technologies, including ER&D and accelerated digital transformation, have increased the demand for digital talent. According to the Labour Bureau's Employment Economic Survey Q2 2021, ~18% organizations in the nine major sectors were imparting formal skill training in India. Manufacturing was the fifth-largest segment where ~17% of the firms in India were practicing this.

With the advent of Industry 4.0, the manufacturing sector is switching to next-gen technologies, aiding in automation and digitalization. While smart factories with connected machines (deliver real-time data) can help improve production and supply chain processes, there exists a significant skill gap in terms of employment. This gap has further widened because of the disruption taking place in the automotive industry due to ACES technologies.

The Ministry of Skill Development and Entrepreneurship estimates that the EV industry alone will create employment for 10mn people in the country by 2030. Accordingly, this development will generate employment for a huge portion of the country's total skilled workforce.

Exhibit 15: Sector-wise distribution of estimated establishments imparting formal skill training



Source: Company, Emkay Research

Government spending: MSDE expects to spend USD318mn in 2023

To address the widening skill gap in India, MSDE spent ~USD289mn in 2021. This spend is focused on the creation of standardized infrastructure for the delivery of skill development training equipped to run high-quality industry-driven courses. Further, MSDE has budgeted to spend nearly USD318mn in 2023 on skill development and infrastructure development.

Currently, there are 14,758 ITIs (government and private), of which ~2,000 have been upgraded or have plans to upgrade. States across the country have been investing heavily to upgrade ITIs by collaborating with various industry players to bring in the tools and technologies needed to set up the infrastructure. To upgrade one ITI, states spend around Rs300-400mn (USD3.6-4.8mn) on partners who modernize technology infrastructure, provide industry-oriented courseware, training, and support to help students get better employment opportunities.

According to Zinnov, Tata Tech is the only player uniquely positioned to address the needs of educational upgradation in India with its global partner ecosystem and system integration capabilities.

Company overview

Tata Tech is a leading global engineering services company offering product development and digital solutions, including turnkey solutions, to global OEMs and their tier-1 suppliers. It has deep domain expertise in the automotive industry and leverages this expertise to serve its clients in adjacent industries, such as aerospace and TCHM.

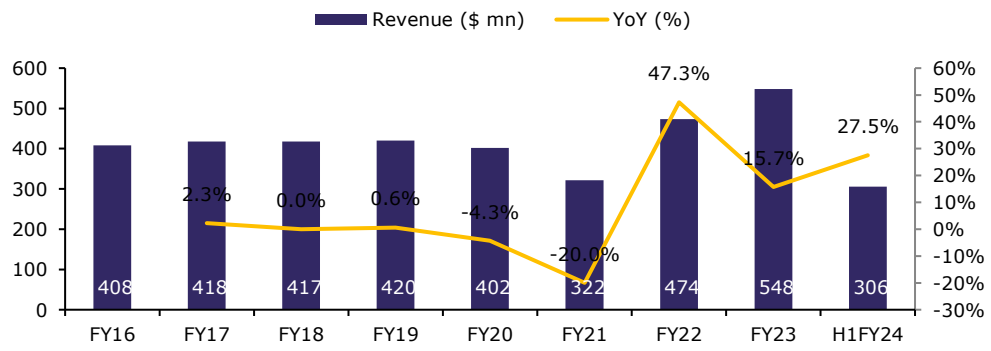
The company primarily categorizes its line of business into two segments: i) Services (~79% of H1FY24 revenue) and Technology Solutions (~21% of H1FY24 revenue). Tata Tech is a pure-play manufacturing-focused ER&D company, primarily concentrating on the automotive industry and is currently engaged with 7 out of the top 10 automotive ER&D spenders and 5 out of the 10 prominent new energy ER&D spenders in 2022. As of Sep-23, the company has 19 global delivery centers spread across North America, Europe, and Asia Pacific, with each center staffed by a majority of local nationals, enabling the company to provide continuous services.

- Services: The primary business line is services, which includes providing outsourced engineering services and digital transformation services to global manufacturing clients, helping them conceive, design, develop and deliver better products.
- Technology solutions: The company complements its service offerings with product and education businesses. Through this, the company resells third-party software applications, primary product lifecycle management software and solutions; it also provides value-added services such as consulting, implementation, systems integration and support. The education business provides 'phygital' (physical and digital) education solutions in manufacturing skills, including upskilling and reskilling in relation to the latest engineering and manufacturing technologies to public sector institutions and private institutions and enterprises through curriculum development and competency center offerings through its proprietary iGetIT platform.

Zinnov has estimated the global ER&D spend to be ~USD1.81trn as of 2022 and expects it to grow to ~USD2.67trn by 2026. The ER&D spend outsourced to third-party service providers reached USD105-110bn in 2022 and is anticipated to generate an 11-13% CAGR between 2022 and 2026. Key growth drivers within the ER&D market, particularly the automotive market, include an increasing propensity to outsource services (following the Covid-19 pandemic), increased regulatory interventions for safer and cleaner products, shrinking product innovation cycles, and next-generation product technologies that underpin autonomous, connected, electrification and shared (ACES) technologies.

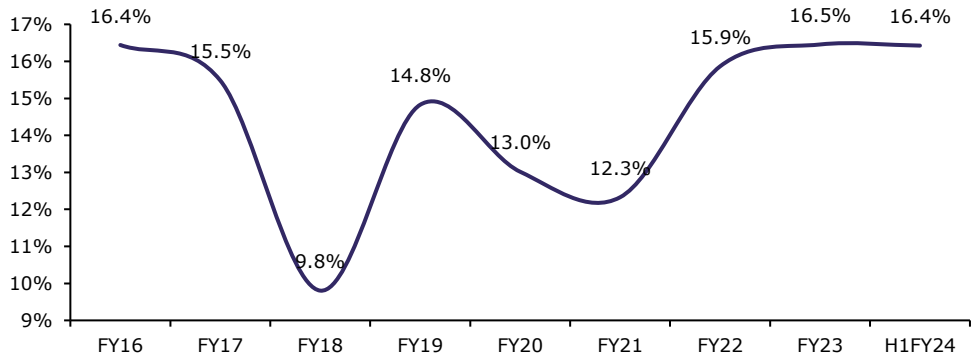
Additional growth drivers include a heightened focus on smart manufacturing, reducing product development time and cost, connecting the digital thread, and enhancing customer experience. Typically, the TCHM industry lags behind the automotive industry by 3-5 years, but the demand for outsourced engineering services is driven by similar regulatory and technological challenges. While the aerospace industry has been disproportionately impacted by Covid-19, the sector has shown signs of recovery, largely driven by increased focus on digitalization, sustainability, and improving manufacturing throughput to meet rising demand.

Exhibit 16: Revenue registered a ~4% CAGR over FY16-FY23



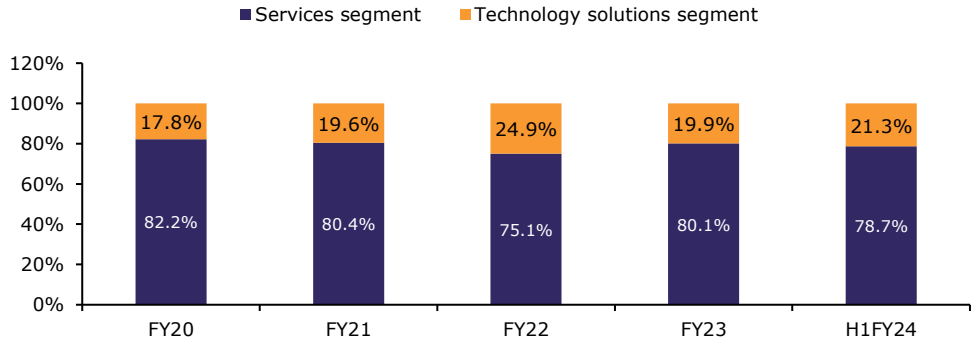
Source: RHP, Emkay Research

Exhibit 17: EBITM has been volatile due to change in the business mix



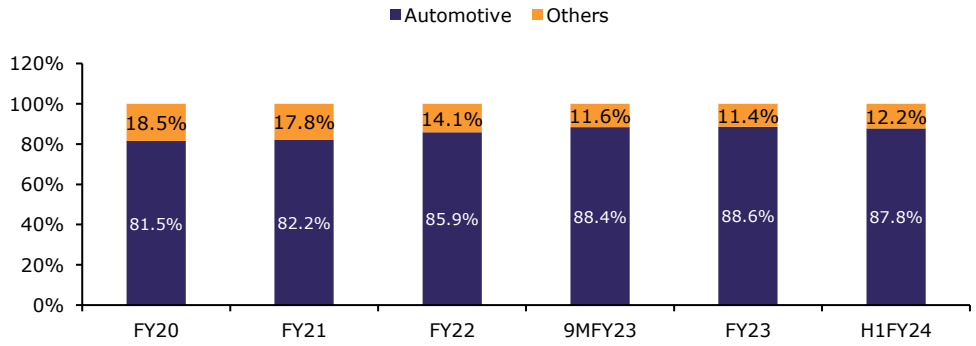
Source: RHP, Emkay Research

Exhibit 18: Total revenue mix (%)



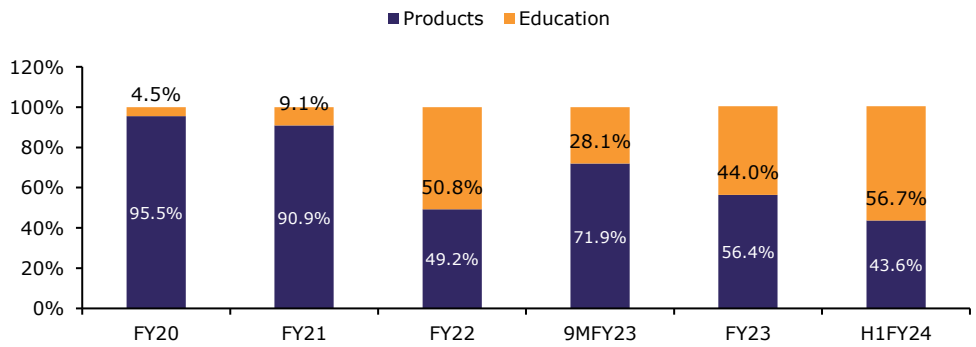
Source: RHP, Emkay Research

Exhibit 19: Revenue mix (%) of the services segment



Source: RHP, Emkay Research

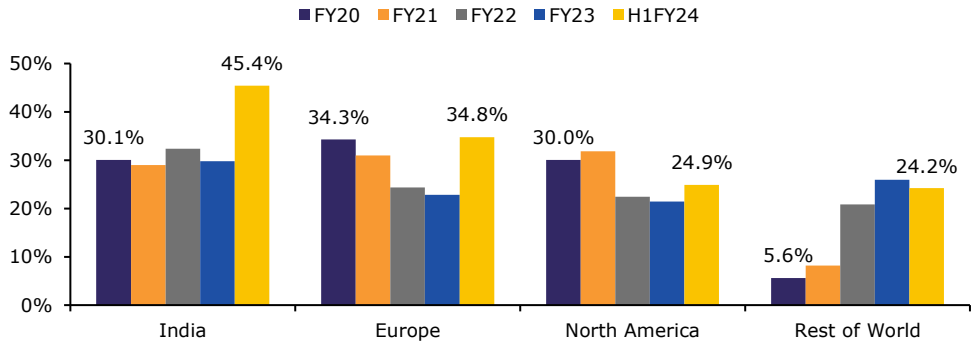
Exhibit 20: Revenue mix (%) of the technology solutions segment



Source: RHP, Emkay Research

The company has a diversified global client base and derived ~35%, ~27%, ~20% and ~18% of the H1FY24 revenue from clients in India, Europe, North America and the RoW, respectively. The strength of its client relationships is evident from the improving net promoter score, where it is positioned among the top 20 percentile of technology services players and has a ~97% repeat rate (based on the percentage of revenue attributable to the services segment in a period generated from existing clients) for FY22 as well as ~98% repeat rate for H1FY24.

Exhibit 21: Tata Tech's diversified global client base



Source: RHP, Emkay Research

The company was incorporated as Core Software Systems Private Limited on August 22, 1994, and, subsequently, changed its name to Tata Technologies Limited in 2001. In 2005, the company expanded through the acquisition of INCAT International plc, a global product solutions and services provider serving the automotive and aerospace industries worldwide. Post-merger integration, the company began the capabilities incubation phase, building strategic partnerships with anchor clients and expanding to non-anchor client accounts. In 2013, it acquired Cambric Corporation, adding Romanian delivery centers to the portfolio, and expanded its industrial machinery engineering capabilities. In 2017, the company acquired Escenda Engineering AB in Sweden, further expanding its global footprint. During the diversification phase, it has expanded its client base, building processes for onboarding new clients and showcasing capabilities as a global engineering services provider.

Investment Rationale

Deep expertise in the automotive industry

Tata Tech's service portfolio for the automotive industry addresses the product development and enterprise-optimization needs of traditional OEMs and new energy vehicle companies, together with their associated supply chains.

The company's automotive ER&D services span the entire automotive value-chain and include concept design and styling, tear down and benchmarking (TDBM), vehicle architecture, body engineering, chassis engineering, virtual validation, ePowertrain, electrical and electronics, connected, manufacturing engineering, test and validation, and vehicle launch. In addition to this, it also offers turnkey full vehicle development solutions for traditional ICE-powered vehicles, plug-in hybrids (PHEV), and battery electric vehicles (BEV), which have been developed over a period of 10 years. Its services extend from concept, detailed design and development, test and validation to the production launch of the vehicle.

Tata Tech's automotive domain expertise and deep understanding of client requirements underpin the approach of helping clients leverage digital technologies to optimize the manner in which they conceive, develop, manufacture, sell and service new products. Additionally, the company's long-standing partnership with anchor clients, including the relationship with JLR since 2010, provides it with opportunities to cultivate skills and refine its value proposition for the automotive sector. Specific offerings such as full vehicle proposition and lightweight structures have been incubated and developed with TML and JLR. Moreover, its work with TML has helped it to leverage its capability in developing Power of 8 and Amp.IOT platforms and capabilities in Industry 4.0.

Further, its sizeable portfolio of automotive services provides cross-selling opportunities into the TCHM and aerospace sectors. For example, the turnkey machine development capabilities for TCHM have been derived from its full vehicle proposition and its expertise in automotive tooling design has underpinned its proposition for the aerospace MRO sector.

Differentiated capabilities in new-age automotive trends (EVs, connected and autonomous)

The company's end-to-end solutions for EV development, manufacturing, and after-sales services are designed to help OEMs develop competitive EVs while maintaining a balance between cost, quality and timelines. Its suite of product engineering solutions includes outsourced turnkey EV development, product benchmarking, electric vehicle modular platform (eVMP) for accelerating product development timelines, and its lightweighting framework can help OEMs develop products within competitive timelines.

The company has a long-standing history of developing EV capabilities since as early as 2010. In 2012, it unveiled an EV technology demonstrator (eMO) at the North American International Automotive Show in Detroit. Since then, the company has executed a number of BEV programs globally, demonstrating end-to-end capabilities to deliver production vehicles. Over the past decade, it was heavily involved in various aspects of its clients' journey to electrify its product portfolio, particularly for the anchor clients.

With increased regulatory focus on sustainability and changing consumer preferences, electrification is expected to be the primary focus for the automotive industry. New technologies are disrupting the automotive sector with increased ER&D complexity, requiring specialized support. Global automotive companies are increasing their R&D investments across the broader theme of 'ACES' technologies – autonomous, connected, electrification and shared. The shift to alternative propulsion systems and specifically EVs has enabled this transformation. Tata Tech offers a one-stop platform for automotive OEMs to meet new engineering needs across the value chain.

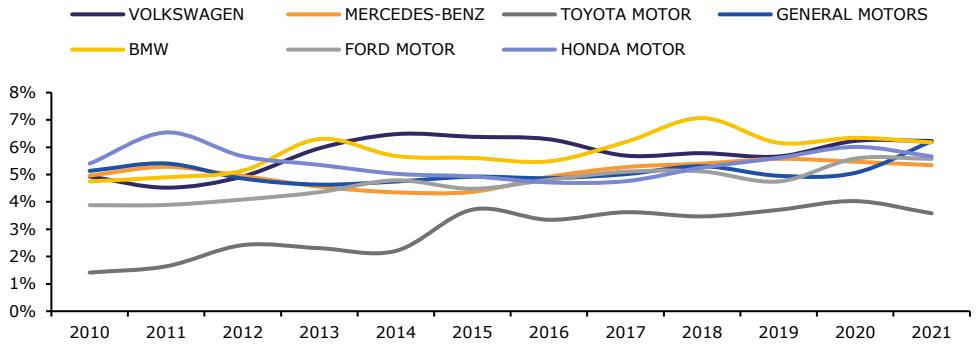
Tata Tech's expertise in a lightweight body structure (a requirement for all EVs) has been established through its long-standing partnership with JLR, one of the earliest adopters of aluminum and lightweight steel. The company's growing reputation in the lightweight body structure domain has strengthened its client relationships with established OEMs, leading to new client acquisitions with new energy vehicle companies across the world.

In addition, partnerships with new energy vehicle companies have provided further opportunities outside of the traditional strength in body engineering. The company has

architectures, over-the-air (OTA) connected services, level 2 and level 3 ADAS, embedded electronics, EV system design, embedded solutions, computer aided engineering (CAE), vehicle engineering and integration, prototype build and test, and program management.

Through eVMP, the company helps in reducing vehicle development timelines by offering a scalable and flexible option for both traditional OEMs and new energy vehicle companies without a BEV platform. The eVMP platform helps in faster compatibility checks to support multiple system selections, achieves a higher degree of uniformity, scalability and de-risking through virtual validation, and allows for rapid configuration changes to client dimensions. Case in point is the eVMP platform helped accelerate the development timeline for VinFast, a Southeast Asian EV OEM.

Exhibit 22: Global automotive companies are increasing their R&D intensity (as a % of sales)



Source: European commission, Emkay Research

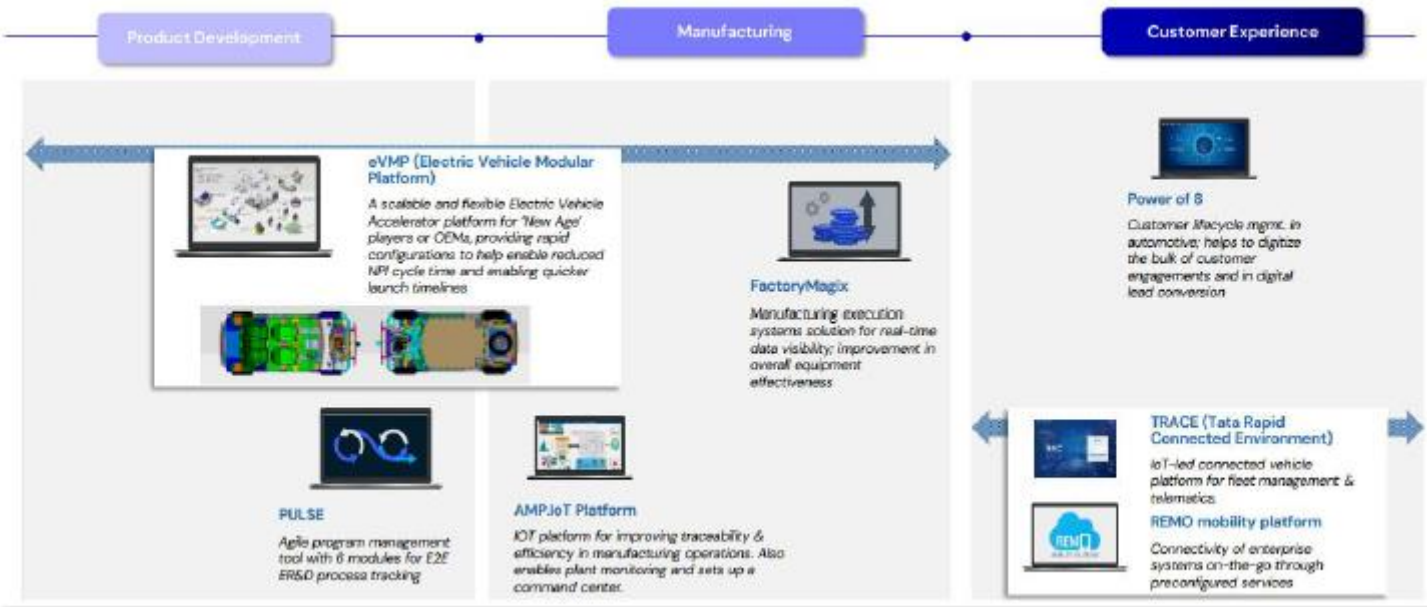
Strong digital capabilities supported by proprietary accelerators

The portfolio of digital services and accelerators is designed to help OEMs and tier-1 suppliers manage the entire digital product life cycle and engage the customer throughout the product journey. The solutions leverage the deep manufacturing domain knowledge and intimate understanding of clients. Solutions and accelerators across new product introduction (NPI) increase the efficiency of automotive, TCHM and aerospace clients in introducing new products to the market. The range of offerings span across digital product development solutions to strengthen NPI processes, digital supply chain solutions for agility and risk management, digital manufacturing solutions for better quality, agility and operational efficiencies, digital customer experience and after-sales solutions to manage the entire customer journey effectively, and digital transformation solutions enabled by proprietary digital wall to manage the digital thread.

The company has built expertise in integration across PLM, ERP and MES solutions by developing proprietary integration accelerators. Enterprise solutions help OEMs address production-specific challenges and accelerate their digital transformation journey, while integrating the digital thread across the lifecycle. The company has also added additional value through cross-selling services solutions to clients. It resells PLM application software through long-standing partnerships with Siemens Industry Software Inc., Dassault Systemes, and Autodesk. Strategic benefits from these partnerships include visibility of future product roadmaps, better client solutions and reduced client-acquisition costs.

Management believes the proprietary platforms offer a strategic competitive advantage, creating strong barriers to entry and help in cost competitiveness, faster deployment, scalability, de-risking, improving program management, and driving operational logistics more efficiently.

Exhibit 23: Tata Tech's proprietary platforms and accelerators across the value chain

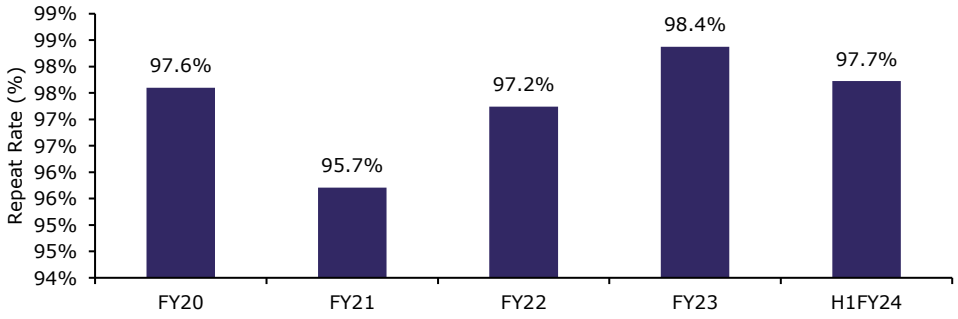


Source: RHP, Emkay Research

Marquee set of clients across anchor accounts, traditional OEMs and new energy vehicle companies

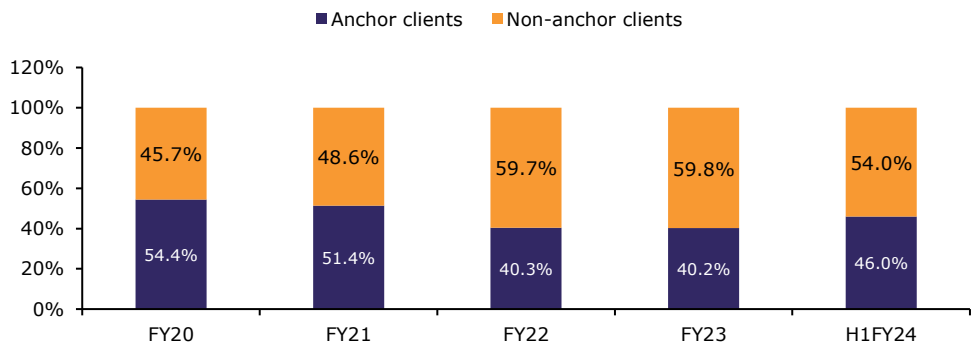
The company has a diversified global presence across Asia Pacific, Europe, and North America and partners with many of the largest manufacturing enterprises in the world. As of September 30, 2023, clients consisted of more than 35 traditional automotive OEMs and tier-1 suppliers and over 12 new energy vehicle companies. The client portfolio includes its anchor clients, TML and JLR, leading traditional OEMs like Airbus, McLaren, Honda, Ford, and Cooper Standard, and tier-1 suppliers as well as new energy vehicle companies such as VinFast, among others such as Cabin Interiors and Engineering Solutions and ST Engineering Aerospace. According to Zinnov, Tata Tech's key accounts comprise 6 out of the top 10 and 12 of the top 20 global automotive ER&D spenders and 5 out of the 10 prominent new energy ER&D spenders globally.

Exhibit 24: High repeat rate depicts deep and long-lasting relationships with clients



Source: RHP, Emkay Research

Exhibit 25: Company has significantly increased the services revenue contribution from non-anchor base from FY20 level



Source: RHP, Emkay Research

The combination of anchor clients, traditional OEMs, and new energy vehicle companies provide a balanced mix of stability and growth, with revenue stability and further growth opportunities from anchor clients and traditional OEMs and significant growth opportunities with new energy vehicle companies.

Global delivery centers enabling better client engagement and scalability

As of Sep-23, the company has a global workforce of over 12,451 employees serving multiple global clients from 19 global delivery centers in Asia Pacific, Europe, and North America. It ensures a balance between onshore client proximity and offshore efficiency by leveraging low-cost offshore delivery model to move a greater portion of the work offshore to India and Romania. The company has ~1,717 employees based out of strategic onshore locations, enabling greater proximity to clients. In addition, the onshore delivery centers are made up of a majority of local national talent and have local presence in all the key automotive ER&D markets globally.

Exhibit 26: Global delivery centers in APAC, Europe, and North America

Source: RHP, Emkay Research

Leveraging manufacturing domain knowledge to tap into the large upskilling and reskilling market

Technological innovations are driving change within the global manufacturing sector, resulting in an increase in demand for new-age engineering skills and capabilities. The company's digital and technology capabilities and long-standing manufacturing expertise coupled with years of experience of providing skills training, initially through teacher-led classroom training and subsequently through its proprietary iGetIT platform, have positioned the company to help address the growing engineering upskilling needs.

Tata Tech's library of digital engineering and manufacturing training programs and competency center labs enable organizations to onboard employees through personalized programs and upskill and reskill employees based on skills gaps.

The company's partnerships in India have recently extended beyond iGetIT offering to the development of an entire phygital proposition. It has been engaged by various state governments in India for the upgradation of their ITIs and universities for upskilling and, as a result, the company has been able to build strong capabilities and a presence in the educational sector. Tata Tech recently signed MoA and MoU with a state government and a cooperative industrial research association to modernize the ITIs and offer joint certification programs in automotive education. As of September 30, 2023, the company has entered into engagements with six state governments to transform their ITIs into centers of excellence (CoEs) as part of their initiatives to improve the employability of youth.

Management believes these relationships within the public sector institutions will allow them to invest and further improve the course content on iGetIT offering, which will reinforce the private sector's enterprise proposition.

Key Strategies

The focus of its strategy is to build the capacity and capabilities necessary to develop and increase the value of the business by growth across multiple dimensions, including strengthening relationships with existing clients, targeting selective new additions of large ER&D spenders, expansion of digital engineering and embedded capabilities, strengthening service delivery, and expanding client base in the education sector.

Deepen engagements within the existing client base

The company believes it has significant opportunity within its client base to increase the use of product offerings and further develop deeper, long-term strategic partnerships. Currently, the top-20 clients by revenue attributable to the services segment account for ~88% of FY23 services revenue. It plans to drive further value by prioritizing the right high-potential accounts through strategic account planning. The company is also investing in building capabilities of frontline sales teams in priority domains and aims to conduct proactive campaigns and cultivate across top accounts to increase the penetration of priority offerings.

Targets top ER&D spenders in select high-priority verticals and key geographies

The company aims to secure projects with the top ER&D spenders within the focus verticals of automotive, aerospace, and TCHM. According to Zinnov, automotive ER&D is highly concentrated among the top-20 companies, in terms of ER&D spend for 2022, which account for 73% of the global spend. It aims to strengthen its dedicated business development strategy to focus on high-potential accounts with large annual ER&D spends and new energy vehicle companies. Empanelment by Airbus in Dec-21 is expected to become a strong growth avenue. Organic approach of targeting top ER&D spenders is complemented by tuck-in acquisitions, helping accelerate client acquisition or capability building.

Expand capabilities in digital engineering and embedded systems

Tata Tech is focused on scaling up the embedded and digital and software-defined vehicle capabilities and offerings through investments and strengthening alliances as part of its diversification strategy. It is also focused on leveraging full turnkey product development capabilities related to EVs. It has also targeted large new projects to establish growth momentum and intends to expand the business through selective acquisitions that provide access to better technology, a broader geographical reach, capabilities, and key clients. The company has invested in establishing strong partnerships and alliances, such as with Dassault, Logility, Siemens Industry Software Inc., Codincity, and Fantasy and by availing Microsoft AZURE products/services that augment the company's efforts and enable it to expand its client reach across verticals and geographies.

Strengthening service delivery through capacity and capability building and optimizing delivery processes

The company continues to work on strengthening the forecasting processes, resource management processes, and automation of non-core processes to enhance delivery excellence and strengthen pricing models that will enable margin improvement while creating value for all stakeholders. It is focused on building the talent supply chain to ensure that it fulfils client requirements at the right time and at the right cost. It plans to drive offshoring, optimize the employee pyramid and span of control, invest strongly in recruiting, development and retention of employees, increase utilization rates, drive sub-contractor optimization where applicable, and drive increased productivity.

In addition, the company endeavors to reduce employee costs per engagement through an optimized onshore-offshore mix. It is strategically analyzing work streams in current accounts and aims to move select work streams to offshore talent (India and Romania and increase by increasing offshore workforce). It is also focused on building a strong talent development strategy to onboard and upskill the employees and has launched various campaigns to strengthen the employer's brand to attract new talent.

Expand capabilities and enterprise client base in the education sector

The global manufacturing sector is being disrupted by technological changes. There is a large engineering upskilling requirement globally, and particularly in India, in the manufacturing

sector. According to NASSCOM and Draup, India will need 1.4-1.9mn engineers to meet demand in 2026. The company trains its engineers through a combination of classroom-training programs and utilizing its proprietary iGetIT offering, an online learning system with courses related to engineering design software and skills. The iGetIT platform is used by enterprise clients as well as public sector institutions in India to train engineering, polytechnic and ITI students.

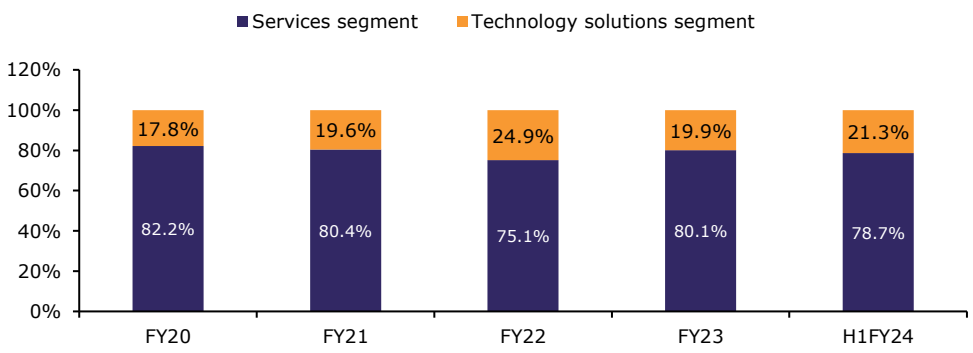
Additionally, academic partnerships in India have extended beyond the iGetIT offering to the development of an entire phygital proposition, and the company intends to further engage with state governments on ITI upgradation projects.

The company aims to leverage its experience and relationships within the public sector to improve its iGetIT platform and will continue to invest and develop the platform with additional modules as needed to reinforce private sector enterprise proposition.

Industry verticals

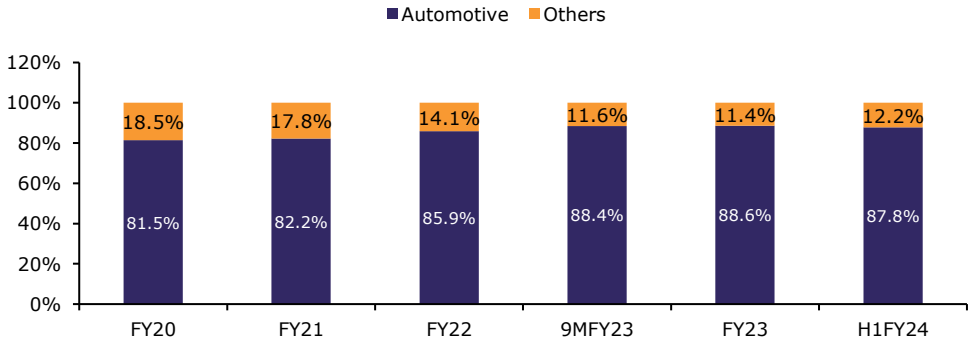
The company provides services and technology solutions across the industry verticals of automotive and others, including TCHM, aerospace and other verticals.

Exhibit 27: Total revenue mix (%)



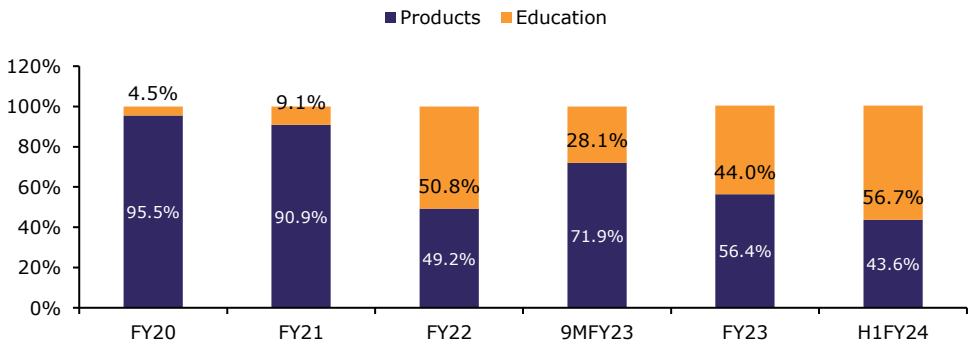
Source: RHP, Emkay Research

Exhibit 28: Revenue mix (%) of the services segment



Source: RHP, Emkay Research

Exhibit 29: Revenue mix (%) of the technology solutions segment



Source: RHP, Emkay Research

Automotive

In the automotive vertical (the company's largest vertical), the offerings enable clients to innovate and create new products, from specific component designs to full vehicle development through engineering and design services. Its automotive engineering process involves market definition and product strategy, concept styling and vehicle architecture, detailed engineering and design, manufacturing process and resource planning, product and process validation, production readiness and production launch, and continuous improvement. In addition, end-to-end product development, product engineering expertise, and digital solutions for the automotive industry facilitate the development of lightweight structures for EVs and next-generation connected vehicles, thereby delivering greener and safer products. The company is

currently engaged with 7 out of the top 10 and 12 out of the top 20 automotive ER&D spenders (across OEMs and tier-1 suppliers) and 5 out of the 10 prominent new energy ER&D spenders.

The company offers a one-stop platform for automotive OEMs to meet new engineering needs across the value chain. It has capabilities in areas such as product engineering (new product development from concept to realization), value engineering (benchmarking, costing and enabling design), manufacturing (lean and digital manufacturing, integrating digital thread with the manufacturing value chain), and sales and after sales (omni-channel client experience and product lifecycle extension, effective maintenance, repair and operations). In addition, the company offers multiple bespoke solutions such as pre-studies for concept vehicles, virtual simulation, body engineering, battery management systems, battery swap systems, ePowertrain, embedded infotainment, vertical integration of value chain, smart manufacturing, digital thread enablement, telematics and digital sales and marketing, data management systems (DMS), and service management. It also specializes in delivering turnkey full-vehicle solutions, a competency developed over a period of 10 years, which has been facilitated by a global footprint that positions delivery centers close to key clients. With turnkey full-vehicle solutions, it primarily focuses on the development of the digital product and management of the test, validation and launch processes. While the building of porotype parts/vehicles and physical testing is typically managed by the OEM, it also has such capabilities and has an established network of global partners to facilitate these requirements.

Electric Vehicle Modular (eVMP) Platform

The Electric Vehicle Modular Platform (eVMP) is an accelerator to enable the creation of scalable and flexible vehicle platforms for OEMs, including new energy vehicle companies that allow them to evaluate rapid changes to configurations and enables reduction of the NPI cycle time and quicker launch timelines. The virtual platform approach helps in reducing development timelines, improving cost competitiveness, parts and scalability, and de-risking through virtual validation.

Aerospace

The aerospace and defense industry is regaining growth momentum with increased travel demand across the globe and has been adopting new digital technologies to improve services to its customers. According to Zinnov, the global ER&D spend for the aerospace and defense market size was valued at USD52bn in 2022 and is expected to increase by ~USD10bn by 2026.

In the aerospace vertical, Tata Tech helps global aerospace companies to design, engineer and validate aircrafts using advanced processes, tools and technologies to manage clients' capacity utilization, product quality, operations and maintenance costs, and safety and security. Traditionally, the partnership included product and tooling design, interiors and seating layouts, and enterprise optimization through PLM and ERP deployment services. More recently, the company leveraged its deep automotive domain knowledge in manufacturing tooling to enter the aerospace MRO sector.

The company's aerospace engineering services include concept design, concept and feasibility studies, industrialization, luxury customization, detail design, virtual validation, MRO/tooling, manufacturing support, sales and aftermarket service, and technical publications. Through the process, the company helps clients drive efficiencies and innovation throughout the product lifecycle while maximizing product quality and achieving operational benefits by leveraging innovative designs to build structures such as fuselage, wings, empennage, landing gears, control surfaces, and engine parts including fuel metering control systems. Its capabilities also include providing solutions for structures, engines, systems, interiors and MRO as well as overhaul.

Increasing demand for zero carbon emissions, global competition, and growing commercial aircraft backlog are the primary trends putting increased pressure on OEMs to deliver high-precision products faster. According to Zinnov, key aircraft and component manufacturers have recently announced capacity expansion plans and new manufacturing plants to address aircraft backlog and meet customer requirements. Furthermore, increased focus on narrow-body aircrafts is expected to present a significant opportunity to ER&D service providers in the areas of body engineering, which is a mature segment of outsourcing. Passenger-to-freighter conversion is another attractive area of opportunity for engineering services companies. Digital technologies are finding use cases all the way from asset tracking and inventory management

to digital MRO and the ER&D service provider ecosystem is being leveraged for digital thread enablement.

Tata Tech's clients are primarily tier-1 suppliers and OEMs. For example, the company is selected as an engineering, manufacturing engineering, and client services strategic supplier (EMES3) by the global aerospace company, Airbus. With product development at the heart of the business, it believes that the company understands the complexity of the aerospace industry and can help in all stages of the product development process – from concept to flight and beyond to aftermarket services.

Transportation and Construction Heavy Machinery (TCHM)

The global TCHM ER&D spend is estimated to grow from USD43bn in 2022 to USD49bn by 2026. Innovation in the TCHM industry typically lags behind the automotive sector innovation by 3-5 years. The company expects key trends like electrification, connected equipment and carbon footprint reduction will drive the TCHM industry in the coming years. Further, OEMs are exploring new lines of revenue and ways to bring new products to market faster to reduce costs and are looking to scale up production rapidly and speed up their product development processes.

In the TCHM vertical, Tata Tech provides services to equipment manufactures on an extensive range of products, including earth moving and construction equipment, mining, agricultural, and forestry heavy machinery. The TCHM team includes specialists in mechanical engineering, product design, electrical, electronics and embedded design, control systems, powertrain and hydraulics.

The capabilities include providing support and solutions in areas such as styling, benchmarking, concept design, detail design and validation, electrical development, hydraulics development, vehicle integration, powertrain integration, cabs and bodies, manufacturing support, engine installation, machine localization, powertrain development, emission compliance, hydraulic systems, and electrical system and structures.

Others

Tata Tech is also developing additional offerings to expand its operations across other relevant industries, such as industrial and medical equipment sectors. As client expectations are evolving, businesses are racing to deliver competitive and better products more quickly. With digitization being the key to facilitating innovation, achieving efficiency and enabling the 'factory of the future,' industrial companies sought substantial investments in digital initiatives and technologies like AI/ML, digital twin, analytics, automation remote monitoring and predictive maintenance.

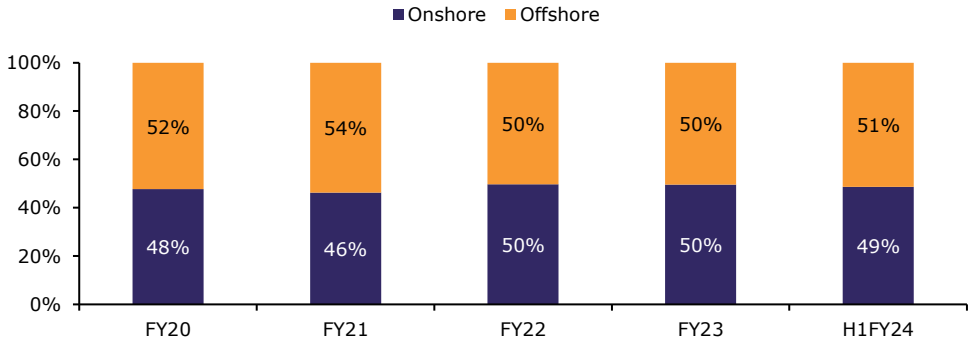
Management believes its proven expertise in engineering and a broad portfolio of in-house digital accelerators help clients achieve business outcomes that give them a competitive edge over other companies in the industry. Moreover, its digital operation offerings have sought to enable the digital transformation of business processes and shop floor-to-top-floor automation for enhanced flexibility in operations with faster cycle times across the entire manufacturing value chain.

The company offers a holistic approach to industrial clients integrating its proprietary solutions across the product design and manufacturing value chains of clients' ecosystem to facilitate the development of advanced industrial products. In the industrial sector, the company has enabled, among others, the digitization of factories, processes and operations using emerging technologies such as industrial IoT, AI/ML, digital twin, analytics and automation.

Global Delivery Model

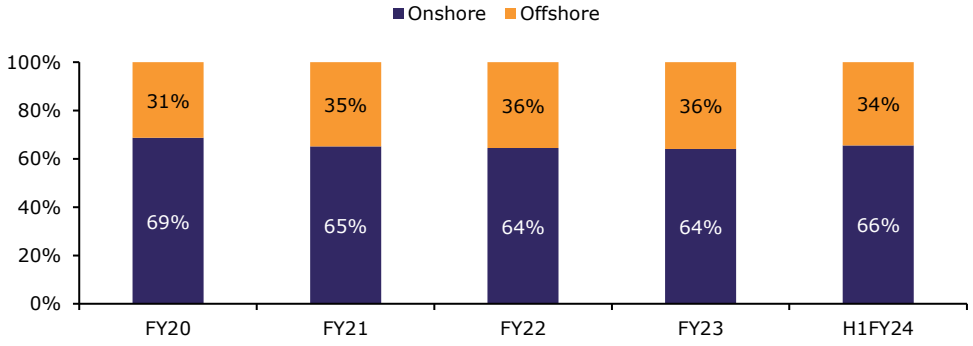
Tata Tech services its clients using the global sales and delivery network comprising 19 global delivery centers in North America, Europe, and Asia Pacific. At each of the global delivery centers, it employs a majority of local nationals, which allows to maintain a responsive local presence near clients. The company has a local presence in all the key automotive ER&D markets globally with ~1,434 employees in Europe, ~336 employees in North America, ~219 employees in Asia Pacific, excluding India, and 10,462 employees in India, each as of September 30, 2023. Management believes the onshore/offshore global delivery model enables it to provide aligned onshore client proximity required to support the iterative nature of product development services, complemented by the ability to operate at scale with cost effectiveness through offshore sourcing.

Exhibit 30: Revenue mix (%) of onshore/offshore delivery model across periods



Source: RHP, Emkay Research

Exhibit 31: Revenue mix (%) attributable to the services segment sourced from outside India and Romania

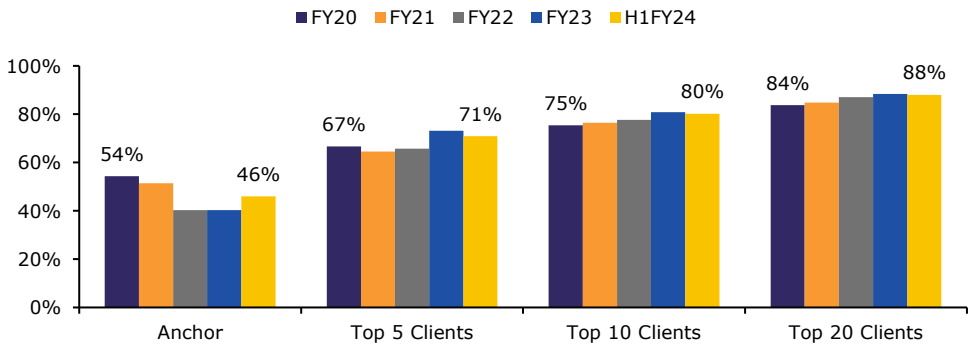


Source: RHP, Emkay Research

Clients

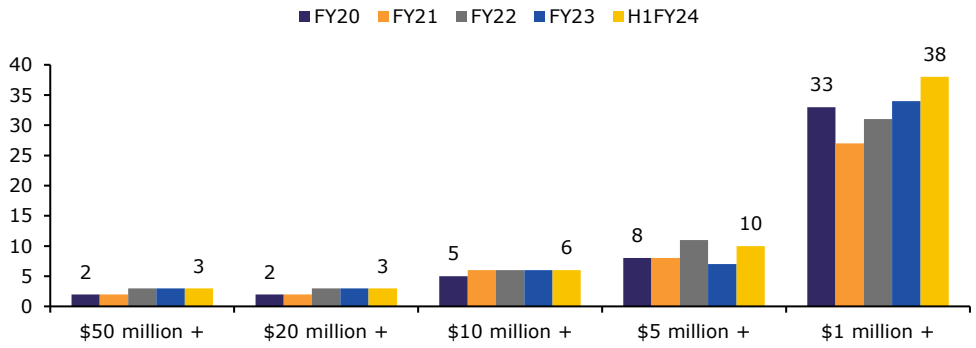
Tata Tech services multiple clients globally through 19 global delivery centers across North America, Europe, and Asia Pacific. According to Zinnov, Tata Tech's current clients include 7 out of 10 and 12 out of top 20 automotive ER&D spenders (across OEMs and tier-1 suppliers).

Exhibit 32: Dependency on anchor clients has reduced over a period of time



Source: RHP, Emkay Research

Exhibit 33: Improvement in client buckets from FY20 through H1FY24



Source: RHP, Emkay Research

Concerns

Higher client concentration exposes the company to deterioration in client's business

The company is exposed to continued growth in top clients and any deterioration in client's business may lead to slower growth. The top 5 clients, which include JLR, Tata Motors and VinFast, contributed to ~57% of overall revenue and ~71% of services revenue in H1FY24. The company was heavily dependent on anchor clients (Tata Motors and JLR), with a revenue mix of more than 54% in 2020. Nevertheless, it had consciously diversified the client portfolio, resulting in anchor clients' mix reducing to ~46% in H1FY24.

Company derives/likely to derive significant revenue from new energy vehicle companies/startups and business continuity and growth depends on their success

The company expects a significant amount of future revenue to come from new energy vehicle companies, many of whom may be startup companies. Uncertainties about their funding plans, future product roadmaps, ability to manage growth, creditworthiness, and ownership changes may adversely affect the company's business. New energy vehicle companies may be prone to consolidation within the industry, which may lead to curtailing of the outsourcing business to Tata Tech.

Some client contracts contain benchmarking and most-favored client provisions

Some of the client contracts, including contracts with anchor clients, contain benchmarking and most-favored client provisions. The company derived ~10% of revenue in H1FY24 from contracts containing benchmarking and most-favored client provisions.

Growing share of education business may weigh on margins and cash generation

The company has expanded its offerings in the education business through iGetIT platform to public and private sector academic institutions through curriculum development and competency center offerings for upskilling and reskilling in relation to the latest engineering and manufacturing technologies. This would enable it to spearhead further expansion into enterprise customers. There is high dependency on third parties for quality, delivery and commercial details in the education business. The education business operated at lower margins compared with other businesses and has been particularly exposed to fluctuations in revenue due to the nature and frequency of the projects and the payments involved in the contracts. It derives ~97% of education revenue in H1FY24 from projects with state governments and public universities.

Valuations reasonable; factors in client concentration and historical growth profile

The IPO is slated to open on November 22, 2023, with an expected listing by December 5, 2023. Post-issue implied market cap depending on the price band (Rs475-500/share, face value of Rs2) is likely to be Rs192.7bn to Rs202.8bn.

The company's growth trajectory remains slower than peers over FY16-23, but it has improved in the last 3 years on account of traction in select accounts. Weakness observed in a large client in H1FY24 due to near completion of the large full vehicle development projects may weigh on near-term performance and, in our view, IPO valuation has captured it adequately. At the upper end of the price band, Tata Tech is being valued at ~32x its FY23 EPS vs. its peers such as LTTS (~40x its FY23 EPS), Tata Elxsi (~69x its FY23 EPS), KPIT (~110x its FY23 EPS), and CYL (~37x its FY23 EPS).

Based on business valuations (Implied market capitalization, post listing), at the upper end of the price band of Rs500/share (market cap of ~Rs203bn), we look at three scenarios:

- **Scenario 1: Attractive valuation:** Assumptions of a revenue CAGR of 18% from FY23-FY26 (business mix shift towards services) with EBITDAM of 20%.
- **Scenario 2: Fair valuation:** Assumptions of a revenue CAGR of 14% from FY23-FY26 (business mix stable) with EBITDAM remaining stable at 18.6%.
- **Scenario 3: Expensive valuation:** Assumptions of a revenue CAGR of 10% from FY23-FY26 (business mix shift towards technology solutions) with EBITDAM of 17.5%.

Exhibit 34: Tata Tech's valuation as per different revenue and margin profiles

Rs mn	Scenario 1	Scenario 2	Scenario 3
Valuation ask	2,02,834	2,02,834	2,02,834
EV	1,92,544	1,92,544	1,92,544
FY23			
Revenue	44,142	44,142	44,142
EBITDA	8,209	8,209	8,209
EBITDAM	18.6%	18.6%	18.6%
FY26			
Revenue	72,526	65,398	58,753
CAGR	18.0%	14.0%	10.0%
EBITDA	14,505	12,164	10,282
CAGR	20.9%	14.0%	7.8%
EBITDAM	20.0%	18.6%	17.5%
EV/Sales (x)	**2.7**	**2.9**	**3.3**
EV/EBITDA (x)	**13.3**	**15.8**	**18.7**

Source: Company, Emkay Research

Exhibit 35: Bloomberg - Relative Valuation

Company	Year-end	Currency	CMP	M Cap (US$ bn)	Sales (in mn)			EBITDAM (%)			Net income (in mn)		
					1FY	2FY	3FY	1FY	2FY	3FY	1FY	2FY	3FY
L&T TECHNOLOGY SERVICES LTD	03/2023	INR	4454	5.7	96,492	1,09,367	1,23,922	19.9%	20.1%	20.4%	13,010	15,070	17,476
CYIENT LTD	03/2023	INR	1731	2.3	71,878	81,949	90,039	18.4%	18.4%	18.8%	7,627	8,990	10,448
KPIT TECHNOLOGIES LTD	03/2023	INR	1537	5.1	47,203	57,228	69,415	20.2%	20.7%	21.2%	5,698	7,342	9,391
TATA ELXSI LTD	03/2023	INR	8307	6.2	35,972	41,997	49,047	30.1%	29.5%	28.9%	7,906	9,253	11,025
ASSYSTEM	12/2022	EUR	42	0.7	571	610	653	8.8%	9.3%	9.6%	43	48	54
BERTRANDT AG	09/2022	EUR	49	0.5	1,146	1,235	1,328	9.2%	10.6%	11.0%	30	44	55
ALTEN SA	12/2022	EUR	126	4.8	4,092	4,364	4,649	11.3%	11.7%	12.2%	272	317	347
AFRY AB	12/2022	SEK	126	1.4	26,928	28,033	29,279	10.1%	10.3%	10.9%	1,201	1,375	1,631

Company	Year-end	P/E			P/S			EV/EBITDA			EV/Sales		
		1FY	2FY	3FY	1FY	2FY	3FY	1FY	2FY	3FY	1FY	2FY	3FY
L&T TECHNOLOGY SERVICES LTD	03/2023	36.2	31.2	26.9	4.9	4.3	3.8	23.8	20.7	18.0	4.7	4.2	3.7
CYIENT LTD	03/2023	25.1	21.3	18.4	2.7	2.3	2.1	14.6	12.8	11.4	2.7	2.4	2.1
KPIT TECHNOLOGIES LTD	03/2023	73.9	57.4	44.9	8.9	7.4	6.1	43.7	35.1	28.4	8.8	7.3	6.0
TATA ELXSI LTD	03/2023	65.4	55.9	46.9	14.4	12.3	10.5	46.9	41.0	35.8	14.1	12.1	10.4
ASSYSTEM	12/2022	15.2	13.7	12.1	1.1	1.1	1.0	11.6	10.4	9.3	1.0	1.0	0.9
BERTRANDT AG	09/2022	16.4	11.2	9.1	0.4	0.4	0.4	6.4	5.2	4.6	0.6	0.5	0.5
ALTEN SA	12/2022	16.2	13.9	12.7	1.1	1.0	0.9	9.5	8.6	7.8	1.1	1.0	0.9
AFRY AB	12/2022	11.9	10.4	8.7	0.5	0.5	0.5	7.1	6.6	6.0	0.7	0.7	0.7
Median		**20.8**	**17.6**	**15.5**	**1.9**	**1.7**	**1.6**	**13.1**	**11.6**	**10.4**	**1.9**	**1.7**	**1.5**

Source: Bloomberg, Emkay Research

Exhibit 36: Peer comparison

Company	Mcap (USD bn)	FY23 RoE	FY23 OCF/EBITDA (%)	FY20-23 CAGR Revenue	FY20-23 CAGR EBIT	FY20-23 CAGR PAT	FY16-23 CAGR Revenue	FY16-23 CAGR EBIT	FY16-23 CAGR PAT
Tata Tech*	2.4	23.7%	48.9%	15.7%	25.1%	35.4%	7.4%	7.4%	7.2%
LTTS	5.7	25.6%	76.3%	12.6%	16.8%	12.6%	14.7%	18.1%	15.8%
Cyient	2.3	17.5%	54.1%	10.8%	23.4%	14.5%	9.9%	12.8%	6.8%
KPIT	4.9	25.5%	72.8%	16.0%	37.7%	37.5%	NA	NA	NA
Tata Elxsi	6.3	41.0%	50.6%	25.0%	43.2%	43.4%	16.6%	21.5%	25.4%

*Source: Company, Emkay Research. *Tata Tech's MCap is calculated at the upper end of the price band*

Offer details

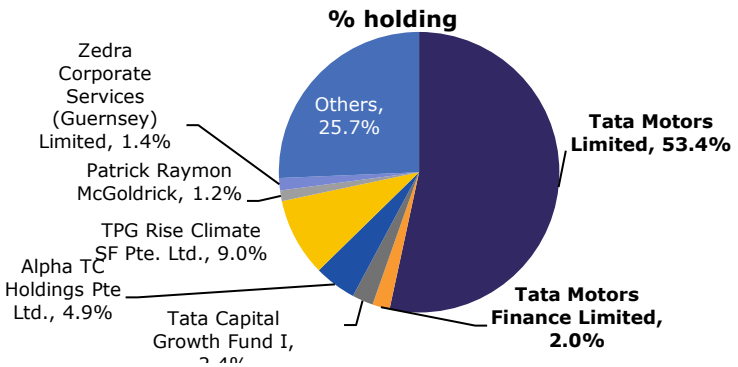
Tata Tech's IPO is a complete OFS with existing shareholders, including promoters looking to sell their stake. Selling shareholders include Promoters and Promoter Groups – Tata Motors Limited and Tata Motors Finance Limited along with other investors – Alpha TC Holdings and Tata Capital Growth Fund I.

Exhibit 37: Shareholding structure pre and post the IPO

	Pre-IPO		Post-IPO	
	No. of shares	Holding (%)	No. of shares	Holding (%)
Total no of shares O/S	**40,56,68,530**	**100.0%**	**40,56,68,530**	**100.0%**
Promoter and promoter group	**27,09,64,736**	**66.8%**	**22,46,89,736**	**55.4%**
Tata Motors Limited	26,28,44,816	64.8%	21,65,69,816	53.4%
Tata Motors Finance Limited	81,19,920	2.0%	81,19,920	2.0%
Public shareholders	**13,47,03,794**	**33.2%**	**18,09,78,794**	**44.6%**
Tata Capital Growth Fund I	1,47,22,500	3.6%	98,64,075	2.4%
Alpha TC Holdings Pte Ltd.	2,94,45,010	7.3%	1,97,28,157	4.9%
TPG Rise Climate SF Pte. Ltd.	3,65,09,794	9.0%	3,65,09,794	9.0%
Patrick Raymon McGoldrick	50,00,000	1.2%	50,00,000	1.2%
Zedra Corporate Services (Guernsey) Limited	57,66,720	1.4%	57,66,720	1.4%
Others	4,32,59,770	10.7%	10,41,10,048	25.7%

Source: RHP, Emkay Research
**Employee reservation portion: 2.02mn shares*
TML's shareholders' reservation portion: 6.08mn shares

Exhibit 38: Shareholding structure post the IPO



Source: RHP, Emkay Research. Promoter holding highlighted in bold

Exhibit 39: OFS details

OFS	**6,08,50,278**	**15.0%**
Selling shareholders		
Tata Motors Limited	4,62,75,000	11.4%
Tata Capital Growth Fund I	48,58,425	1.2%
Alpha TC Holdings Pte Ltd.	97,16,853	2.4%

Source: RHP, Emkay Research

Management Team

Ajoyendra Mukherjee (Chairman, Independent Director): Ajoyendra holds a Bachelor's Degree in Engineering (Electrical and Electronics) from the Birla Institute of Technology and Science. He was previously associated with Tata Consultancy Services Limited for almost four decades, where he held positions such as the Head of Business Operations in Eastern India, Middle East and Africa, and Switzerland; Global Head of CSR function, Global Head of Energy and Utilities Practice and Executive Vice President and Global Head of Human Resources.

Warren Harris (CEO and Managing Director): Warren holds a Bachelor's Degree in Engineering (Technology) from Institute of Science and Technology, the University of Wales. He holds a Doctorate in Philosophy (honoris causa) from Amity University, Uttar Pradesh. He has completed the Advanced Management Program from Harvard Business School. He is a Chartered Mechanical Engineer registered with and a member of the Institution of Mechanical Engineers. He has been associated with the company since October 1, 2005.

Savitha Balachandran (CFO): Savitha Balachandran is responsible for global finance and procurement in the company. She holds a Bachelor's Degree in Commerce from Bangalore University and a Post-Graduate Diploma in Management from Symbiosis Centre for Management and Human Resource Development. She has completed the Fulbright Scholarship Program in 2012. She has also cleared the final examination for Chartered Financial Analyst from the CFA Institute. Prior to joining the company, she was associated with Tata Motors Limited.

Nachiket Paranjpe (President – Automotive Sales): Nachiket joined Tata Technologies Europe Limited, one of the company's subsidiaries, in 2019. He is responsible for sales and client engagement at JLR. He holds a Bachelor's Degree in Mechanical Engineering from Maharashtra Institute of Technology, University of Pune, and a Master's Degree in Science in Management from Purdue University. Prior to joining the company, he was associated with KPIT Technologies GmbH as Head of Germany Automotive Integrated Business Unit.

Aloke Palsikar (EVP and Head – Aerospace and Industrial Heavy Machinery Sales): Aloke is responsible for global sales for non-automotive industry verticals. He holds a Bachelor's Degree in Electrical Engineering from the University of Bombay, a Master's Degree in Technology in Electrical Engineering with electrical machines and drives from IIT, Bombay, and has completed the Management Education Program from IIM, Ahmedabad. Prior to joining the company, he was associated with Siemens Limited as Chief Manager – Marketing, Larson & Toubro Infotech Limited as Assistant General Manager, Tech Mahindra Limited as Global Competency H, and Satyam Computer Services Limited as Assistant Vice President.

Prahalada Rao (President and Client Partner – Tata Motors): Before joining Tata Technologies (Jun-21), Prahalada worked at Mahindra & Mahindra for over 27 years in various managerial and leadership roles in areas extending from business strategy, product development, and digital transformation to change management. In his last role at Mahindra & Mahindra, Prahalada headed the Business Strategy, Transformation and Planning Division, Auto and Farm Sector. He joined the company in 1994 and led the concept development of several global platforms, such as *XUV 500*, *Tivoli*, *Scorpio*, *Rexton G4*, *KUV 100*, *Bolero* pickup trucks, *THAR*, and several diesel and gasoline powertrains. Prahalada holds a PGDM from SP Jain Institute of Management & Research, Mumbai, and a Bachelor's Degree in Mechanical Engineering from Bangalore University. He is a part of the Executive Leadership Team (ELT) at Tata Technologies focused on driving strategies to accelerate business transformation and ensure financial returns.

Financials

Exhibit 40: Balance Sheet statement

Rs mn	FY20	FY21	FY22	FY23	H1FY23	H1FY24
ASSETS						
Non-current assets						
Property, Plant and Equipment	1,051	872	1,145	1,202	1,147	1,318
Capital work-in-progress	1	0	3	27	-	-
Right-of-use-asset	2,469	2,326	1,879	1,803	1,696	1,848
Goodwill	6,999	7,259	7,293	7,629	7,088	7,662
Other Intangible assets	673	440	362	320	319	408
Intangible assets under development	3	1	-	1	-	-
Investments in joint venture						
Financial assets:						
Investment	50	-	-	-	-	-
Trade receivables	157	-	-	-	-	-
Loans	16	3	0	-		
Other financial assets	264	216	442	437	440	627
Deferred tax assets (net)	320	430	574	1,521	598	1,860
Income tax assets (net)	161	220	303	305	304	303
Other non-current assets	71	85	377	797	373	949
Total Non-current Assets	**12,236**	**11,852**	**12,378**	**14,040**	**11,965**	**14,974**
Current Assets						
Financial assets:						
Investments	311	4,971	5,277	298	-	898
Trade receivables						
Billed	6,251	4,534	6,473	9,518	7,478	10,134
Unbilled	983	1,423	1,209	1,545	1,618	2,113
Cash and cash equivalents	3,761	7,813	7,683	3,828	7,133	4,286
Other bank balances	129	21	1,011	6,164	2,726	3,860
Loans	278	2,517	463	4,902	4,220	1,208
Other financial assets	423	268	328	744	332	875
Current tax assets (net)	261	314	107	326	304	30
Other current assets	1,097	2,014	7,252	10,650	5,954	13,048
Total Current Assets	**13,494**	**23,875**	**29,802**	**37,975**	**29,764**	**36,450**
Total assets	**25,730**	**35,727**	**42,180**	**52,015**	**41,730**	**51,424**
EQUITY AND LIABILITIES						
Equity						
Equity Share capital	418	418	418	811	406	811
Other Equity	18,108	21,003	22,383	29,083	24,413	27,720
Total Equity	**18,526**	**21,422**	**22,802**	**29,895**	**24,819**	**28,531**
Liabilities						
Non-current Liabilities						
Financial Liabilities:						
Lease Liabilities	2,297	2,327	2,232	2,148	2,025	2,128
Other financial liabilities	3	5	4	5	4	7
Provisions	225	152	187	233	226	292
Other non-current liabilities	152					
Total Non-current liabilities	**2,677**	**2,484**	**2,422**	**2,386**	**2,255**	**2,427**
Current Liabilities						
Financial Liabilities:						
Lease Liabilities	285	335	383	406	366	470
Trade payables						
total outstanding dues of MSME	64	1	172	1,072	75	85
total outstanding dues of creditors other than MSME	2,367	2,236	3,194	5,506	3,056	4,710
Other financial liabilities	401	31	2,559	46	33	37
Other current liabilities	1,085	9,072	10,127	11,749	10,538	13,962
Provisions	166	119	307	339	275	256
Current tax liabilities (net)	158	28	216	616	313	945
Total Current Liabilities	**4,527**	**11,822**	**16,957**	**19,734**	**14,656**	**20,466**
Total Liabilities	**7,204**	**14,306**	**19,379**	**22,120**	**16,911**	**22,893**
Total Equity and Liabilities	**25,730**	**35,727**	**42,180**	**52,015**	**41,730**	**51,424**

Source: Company, Emkay Research

Exhibit 41: Income statement

Rs mn	FY20	FY21	FY22	FY23	H1FY23	H1FY24
Services revenue	23,435	19,177	26,548	35,352	16,429	19,884
Technology solutions revenue	5,086	4,632	8,747	8,790	2,450	5,383
Total revenue	**28,521**	**23,809**	**35,296**	**44,142**	**18,879**	**25,267**
Growth (%)	*-3.1%*	*-16.5%*	*48.2%*	*25.1%*		*33.8%*
Cost of products or sale / Purchase of technology solutions	3,679	3,383	6,885	6,825	1,773	4,235
Employee costs	14,185	12,160	15,127	19,295	8,911	11,319
Outsourcing and consultancy charges	3,046	2,414	3,998	5,697	2,478	2,905
Other expense	2,906	1,995	2,829	4,116	1,991	2,160
% of sales						
Cost of products or sale	12.9%	14.2%	19.5%	15.5%	9.4%	16.8%
Employee costs	49.7%	51.1%	42.9%	43.7%	47.2%	44.8%
Outsourcing and consultancy charges	10.7%	10.1%	11.3%	12.9%	13.1%	11.5%
Other expense	10.2%	8.4%	8.0%	9.3%	10.5%	8.6%
EBITDA	**4,704**	**3,857**	**6,456**	**8,209**	**3,726**	**4,648**
EBITDAM (%)	*16.5%*	*16.2%*	*18.3%*	*18.6%*	*19.7%*	*18.4%*
Depreciation	992	922	857	946	456	497
EBIT	**3,712**	**2,935**	**5,599**	**7,264**	**3,270**	**4,150**
EBITM (%)	*13.0%*	*12.3%*	*15.9%*	*16.5%*	*17.3%*	*16.4%*
Other income	449	448	488	877	224	607
% of sales	1.6%	1.9%	1.4%	2.0%	1.2%	2.4%
Finance cost	156	177	219	180	81	95
Exceptional items	86	54	-	-	-	-
Profit before tax	**3,919**	**3,153**	**5,868**	**7,961**	**3,413**	**4,663**
PBTM (%)	*13.7%*	*13.2%*	*16.6%*	*18.0%*	*18.1%*	*18.5%*
Total tax expenses	1,404	761	1,499	1,721	822	1,144
ETR (%)	35.8%	24.1%	25.5%	21.6%	24.1%	24.5%
PAT	**2,515**	**2,392**	**4,370**	**6,240**	**2,591**	**3,519**
Adjusted EPS (basic, Rs)	6.0	5.7	10.5	15.4	8.7	6.4

Source: Company, Emkay Research

Exhibit 42: Cash Flow statement

Rs mn	FY20	FY21	FY22	FY23	H1FY23	H1FY24
CASH FLOW FROM OPERATING ACTIVITIES						
Profit for the year	2,516	2,392	4,370	6,240	2,591	3,519
Depreciation and amortization	992	922	857	946	456	497
Export incentive written off	-	-	133	-	-	-
Share-based payments to employees	-	-	-	17	-	18
Provision for income tax	1,441	878	1,587	2,612	809	1,447
Provision for deferred tax	(37)	(117)	(88)	(890)	14	(303)
Dividend income on investments	(2)	-	-	-		
(Profit)/Loss on sale of investments	(0)	(63)	39	(7)	(6)	26
(Profit) on derecognition of lease liability/right to use assets	-	-	(6)	(7)	-	(4)
(Profit) on sale of tangible and intangible fixed assets	(2)	3	(1)	(1)	(0)	(4)
Interest income	(70)	(144)	(397)	(415)	(106)	(276)
Finance cost	156	177	219	180	81	95
Unrealized exchange loss/ (gain)	28	2	(5)	0	0	1
Effect of exchange differences on translation of foreign currency cash & cash equivalent	23	24	21	(19)	(77)	(11)
Allowances for expected credit loss (net)	131	40	(33)	(138)	(74)	11
Change in fair value of investments	(22)	60	(2)	(0)	-	(15)
Change in fair value of derivatives measured at FVTPL	-	-	-	4	-	(4)
Bad debts written-off			-	113	113	-
Operating profit before working capital changes	**5,153**	**4,174**	**6,693**	**8,635**	**3,799**	**4,996**
Working capital adjustments						
Decrease in inventories	0	-				
(Increase) in billed trade receivables non-current	(157)	157			-	-
(Increase) in billed trade receivables current	(406)	1,765	(2,091)	(2,740)	(1,116)	(617)
(Increase)/Decrease in unbilled trade receivables current	57	(439)	234	(286)	(449)	(572)
(Increase) in other current financial assets	146	263	(71)	(363)	5	(370)
(Increase) in other current assets	(300)	(920)	(5,235)	(3,375)	1,209	(2,405)
Decrease in non-current loans	(17)	2	3	0	0	-
(Increase) in current loans	81	(2)	(22)	(10)	(40)	7
(Increase) in other non-current assets	(14)	9	(288)	(383)	(9)	(152)
Increase in trade payables	(693)	(299)	1,102	3,026	(119)	(1,771)
Increase/ (Decrease) in other financial liabilities non-current	(1)	2	(1)	2	1	2
(Decrease)/ Increase in other financial liabilities current	384	(430)	0	(3)	(4)	2
Increase in other liabilities	(183)	7,967	490	2,014	(561)	1,729
Increase in current provisions	(20)	17	188	31	(31)	(83)
(Decrease) in non-current provisions	(37)	(35)	(112)	(103)	(86)	(18)
CASH GENERATED FROM OPERATIONS	**3,995**	**12,231**	**891**	**6,443**	**2,599**	**749**
Income taxes paid (net)	(1,321)	(1,102)	(1,278)	(2,429)	(915)	(827)
NET CASH GENERATED FROM/(USED IN) OPERATING ACTIVITIES	**2,674**	**11,129**	**(387)**	**4,014**	**1,684**	**(78)**
CASH FLOW FROM INVESTING ACTIVITIES						
Proceeds from sale of tangible and intangible fixed assets	7	10	5	4	1	4
Proceeds from sub lease receivable	2	-	-	21	-	21
Interest received on bank deposit and others	5	11	56	76	13	126
Deposits with banks	(15)	109	(991)	(6,223)	(1,139)	(7,024)
Payment for purchase of tangible and intangible fixed assets	(537)	(147)	(634)	(657)	(325)	(478)
Proceeds from sale of investments	-	-	205	-	-	-
Proceeds from redemption of the deposits	-	-	-	1,086	994	9,915
Redemption of preference shares	50	-				
Inter corporate deposits placed	(10,318)	(11,245)	(14,810)	(18,395)	(10,035)	(8,923)
Inter corporate deposits refunded	10,645	9,010	16,885	13,973	6,288	12,610
Interest received from inter corporate deposit/bonds	50	124	325	255	73	118
Proceeds from settlement of loans	34	-				
Purchase of mutual funds	(390)	(4,920)	(5,675)	(983)	-	(4,007)
Proceeds from redemption of the debentures	-	-	50	-	-	-
Proceeds from sale of mutual funds	390	313	5,326	5,968	5,283	3,441
NET CASH (USED IN)/GENERATED FROM INVESTING ACTIVITIES	**(76)**	**(6,736)**	**742**	**(4,874)**	**1,153**	**5,803**
CASH FLOW FROM FINANCING ACTIVITIES						
Share application money received pending allotment	1	-				
Payments for purchase of shares including premium	(401)	-	-	(2,959)	(2,959)	-
Proceeds from issue of shares including securities premium	-	2			-	-
Expenditure on buyback of shares	(1)	-	(1)	(0)	(0)	-
Interest paid	(11)	(25)	(4)	(1)	(0)	(1)
Dividends paid (including dividend tax)	(1,815)	-			-	(4,990)
Repayment of lease liabilities	(384)	(419)	(439)	(509)	(245)	(275)
NET CASH (USED IN) FINANCING ACTIVITIES	**(2,611)**	**(441)**	**(444)**	**(3,469)**	**(3,204)**	**(5,265)**
NET (DECREASE)/INCREASE IN CASH & CASH EQUIVALENTS	**(13)**	**3,952**	**(89)**	**(4,329)**	**(366)**	**460**
Cash & cash equivalents at the beginning of the year	3,725	3,761	7,813	7,683	7,683	3,828
Less: Effect of exchange rate changes on cash and cash equivalents	23	24	21	(19)	(77)	(11)
Add : Translation adjustment on cash & bank balances of foreign subsidiaries	70	124	(20)	456	(261)	(14)
Cash & cash equivalents at the close of the year	**3,761**	**7,813**	**7,683**	**3,828**	**7,133**	**4,286**

Source: Company, Emkay Research

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