

EMS THE SECOND WAVE

Deepening technological and manufacturing capabilities: HMLV EMS in the vanguard



**CLIENTS FROM
US / EUROPE**
Seeking to manufacture
in India



**SHIFTING
SUPPLY CHAINS**
From China /
Vietnam to India



FTA / CEPAs
Expanding export
opportunities for
Indian electronics

BEYOND SMARTPHONES



**AUTOMOTIVE
ELECTRONICS**



**INDUSTRIALS
AND POWER**



**MEDICAL
ELECTRONICS**



**STRATEGIC
ELECTRONICS**

ASSEMBLY PLANT

First wave: Labour intensive,
PLI supported

COMPONENTS/ SEMICONDUCTORS PLANT

Second wave: Process/technology
intensive, Capital subsidies and PLI



SPECIAL ECONOMIC ZONE
Infrastructure for integration,
tax incentives for export
competitiveness



We initiate coverage on the Electronics Manufacturing Services (EMS) sector, with top-3 high-mix-low-volume (HMLV) EMS players in India: 1) Syrma SGS with BUY (TP: Rs2,050; 35% upside), favoring its diversified organic and inorganic growth, margin expansion levers, and execution track record; 2) Avalon with BUY (TP: Rs2,400; upside 24%) favoring its focused positioning as a mission critical box-build specialist with a strong moat built on customer relationships and qualification/ certification complexity; and 3) Kaynes with REDUCE (TP: Rs3,300; 12% downside) as its execution risks have outpaced its technology ambitions. We see a second wave of transformation building up in India's EMS sector, which is favorably placed at the confluence of structural demand tailwinds, global strategic calculus, and national policy priority. HMLV EMS players are poised to benefit from the opportunity, delivering revenue CAGR of 40%+ over FY26-31E, and improving EBITDAM by up to 5ppts by FY31E.

Moving beyond assembly-led electronics manufacturing; HMLV EMS at the vanguard

Electronics manufacturing in India is transitioning from assembly to components and design. EMS companies benefit from this trend by: 1) deepening manufacturing capabilities backed by government capital subsidies (\$20bn across ECMS and ISM2.0), 2) increasing domestic value addition (from ~20% today to >35% by FY30), 3) improving cost structure through domestic sourcing (~3-5% excluding duty arbitrage, per our estimates), 4) substituting imports to grow domestically (~90-100% imports for key components), and 5) unlocking export opportunities (growing from ~1% national share in global electronics trade to 6-7% by 2030). HMLV EMS players are at the vanguard of this transition, leveraging global relationships, process know-how and execution capabilities.

Cognification, electrification are the mega themes underpinning electronics, and EMS

Cognification and electrification will be the key drivers of innovation and growth in the first half of this century (possibly beyond) and both require electronification. Thematic support for the argument is well supported; we strive to identify the revenue/EBITDA opportunity for HMLV EMS players, based on 6 themes: 1) Datacenters – ~Rs16bnpa EBITDA opportunity over FY27-29E; 2) Electricity Transmission – ~Rs2trn+ revenue opportunity globally to FY35; 3) Automotive Electronics – ~Rs12-15bnpa revenue opportunity over FY27-30; 4) Railway Electronics – ~Rs50bn EBITDA opportunity by FY30 from Kavach alone, additional from other programs; 5) PCB manufacturing (PCB-M) – 90% import substitution in a ~Rs450bn market growing at >10% pa; 6) Outsourced Assembly and Test (OSAT) – a play into the global semiconductor ecosystem.

Supply-chain relocations, FTA/CEPA aid India's electronics manufacturing ambitions

Our analysis reveals there is a broad-based supply chain realignment toward India for electronics manufacturing, with Apple and Samsung leading in value share, but electronics majors in Automotive, Railways, Industrials, and other sectors are not far behind. India has taken share from not only China but also Vietnam/Mexico in some cases. India's positioning is further aided by favorable treatment for electronics in the FTAs and CEPAs signed or under negotiations.

Electronics manufacturing key to economic policy; budget outlays have room to grow

Electronics is key to the GoI's aim of increasing manufacturing share of GDP to 25% and generating employment for the ~800-820mn, below-35YO population without college education. India currently exports ~\$25bnpa worth electronics, representing ~1% of the electronics global share despite being ~4% share of global demand. Government policy think-tank NITI Aayog has set a \$500bn electronics manufacturing target by 2030, comprising \$350bn from finished goods and \$150bn from components, targeting employment for 6mn people, and exports of \$240bn. Through the ECMS and ISM 2.0 schemes alone, GoI has committed ~\$20bn (Rs1.7trn) in investment support. We believe policy support will continue as India's incentives package is still smaller than countries like Japan and South Korea and is a fraction of China's.

We favor Syrma SGS and Avalon; we sit out Kaynes till execution normalizes

Our top pick among HMLV EMS players are: 1) Syrma SGS (initiate with BUY; TP: Rs2,050; 35% upside) for its diversified organic and inorganic growth, margin expansion levers, and execution track record; and 2) Avalon (initiate with BUY; TP: Rs2,400; 24% upside) for its focused positioning as a mission critical box-build specialist with a strong moat built on customer relationships and qualification/ certification complexity. We are cautious on Kaynes (initiate with REDUCE; TP: Rs3,300; 12% downside) due to execution risks having outpaced technology ambitions in core EMS and high capital-intensity new businesses.

This report is intended for Team White Marquis Solutions (team.emkay@whitemarquesolutions)

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Head-to-head – Syrma SGS (BUY), Avalon (BUY), and Kaynes (REDUCE)

Exhibit 1: The top-3 Indian HMLV EMS players – Valuations

SA/C	Company	Rating	Valuation Methodology	Target Price	CMP (cob: 10-Aug-26)	Upside/ (Downside)	FY26 PER	FY27E PER implied target	FY28E PER implied target	FY29E PER implied target
C	Syrma SGS	BUY	3-stage DCF	Rs2,050	Rs1,519	35.0%	89.8x	89.9x	66.3x	42.4x
C	Avalon	BUY	3-stage DCF	Rs2,400	Rs1,930	24.4%	114.5x	95.8x	57.9x	37.1x
C	Kaynes	REDUCE	3-stage DCF	Rs3,300	Rs3,735	-11.6%	68.6x	87.2x	57.6x	26.6x

Source: Emkay Research

Exhibit 2: Growth profile – Syrma SGS and Kaynes accelerate early due to PCB-M/OSAT; Kaynes' profitability growth lags

	Revenue CAGR				EBITDA CAGR				PAT CAGR			
Company	FY22-26	FY26-29	FY26-31	FY26-33	FY22-26	FY26-29	FY26-31	FY26-33	FY22-26	FY26-29	FY26-31	FY26-33
Syrma SGS	47.4%	39.6%	34.9%	31.8%	55.0%	44.5%	40.4%	37.6%	54.7%	43.0%	41.6%	39.5%
Avalon	17.5%	44.3%	42.4%	39.8%	15.5%	58.0%	53.5%	49.3%	15.6%	56.8%	54.8%	51.4%
Kaynes	50.5%	47.1%	38.1%	31.8%	57.3%	40.8%	40.0%	33.7%	72.1%	32.2%	40.1%	35.0%

Source: Emkay Research

Exhibit 3: Margin improvements mainly driven by operating leverage and segment mix – Kaynes gains the least

	Gross Margin				EBITDA Margin				PAT Margin			
Company	FY26	FY29	FY31	FY33	FY26	FY29	FY31	FY33	FY26	FY29	FY31	FY33
Syrma SGS	25.6%	26.7%	27.6%	28.4%	11.3%	12.5%	13.8%	15.3%	6.6%	7.1%	8.4%	9.8%
Avalon	34.3%	34.6%	35.1%	35.6%	10.8%	14.2%	15.7%	17.1%	7.0%	9.0%	10.7%	12.3%
Kaynes	34.6%	31.6%	32.6%	32.6%	15.8%	13.9%	17.0%	17.5%	10.0%	7.3%	10.8%	11.9%

Source: Emkay Research

Exhibit 4: Return ratios improvements driven by margin improvement and capacity utilization

	ROE				Post-tax ROCE				Book D/E (incl. Leases)			
Company	FY26	FY29	FY31	FY33	FY26	FY29	FY31	FY33	FY26	FY29	FY31	FY33
Syrma SGS	10.4%	16.7%	19.4%	20.6%	11.1%	18.0%	21.0%	22.7%	0.13	0.18	0.10	0.05
Avalon	15.6%	26.7%	30.0%	29.7%	13.4%	19.9%	23.6%	25.6%	0.30	0.47	0.36	0.22
Kaynes	7.6%	13.3%	20.3%	19.6%	7.8%	12.6%	20.0%	19.3%	0.19	0.23	0.05	0.03

Source: Emkay Research

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Second wave of transformation in EMS builds up

"We decided to learn how to walk before running"

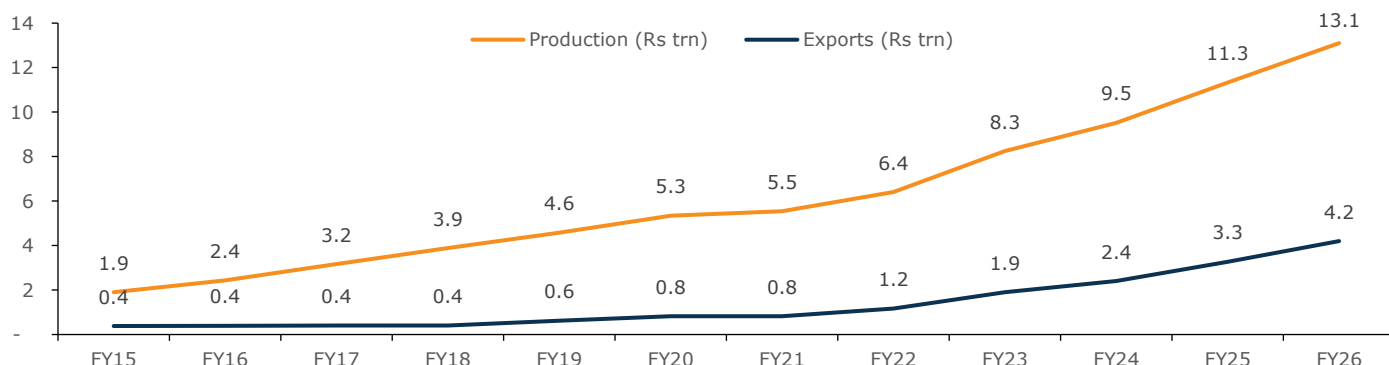
- Ashwini Vaishnaw, Union Minister for Information and Broadcasting, 7-Feb-26

Our view: We see opportunity for HMLV EMS players in India's electronics manufacturing transition from an assembly-led model to a manufacturing + design led model supported owing to 1) improved technological/manufacturing competence enabled by investments from and partnerships with global electronics majors, 2) upside to cost structure improvements from content localization, and 3) second-order effects of successful incubation of the domestic electronics manufacturing ecosystem.

A) The India Electronics story so far

- India's electronics production rose from Rs1.9trn to Rs13.1trn over FY15-26 (19% CAGR)
- Electronics exports rose from ~Rs382bn to Rs4.2trn over FY15-26 (24% CAGR); Electronics is now India's 3rd largest export category

Exhibit 5: India's electronics production, a key pillar of its manufacturing ambitions



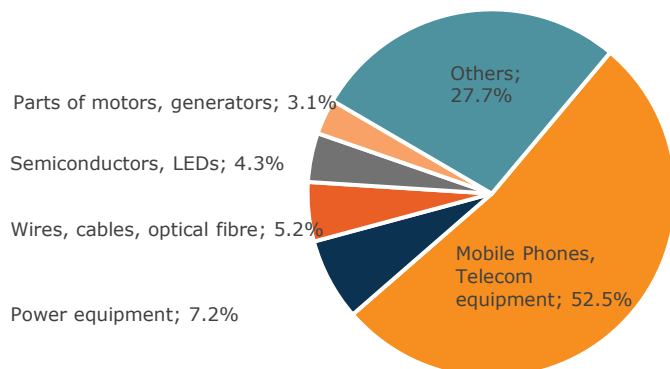
Source: MeITY, Niti Ayog, Emkay Research

"India started with the manufacturing of finished products, then moved towards modules, followed by sub-modules, and has now progressed to the manufacturing of components."

- Ashwini Vaishnaw, Union Minister for Information and Broadcasting, 30-Mar-26

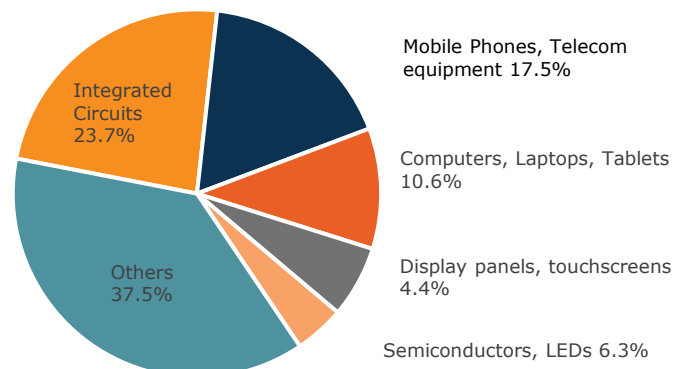
- Success of the 'first wave' in electronics manufacturing driven by assembly dominance, supported by lower labor costs and production-linked incentives by the government
- Mobile phone manufacturing was the biggest success story in this phase
 - Mobile phone production rose from Rs189bn to Rs6.3trn over FY15-26 (37% CAGR)
 - Mobile phone exports rose from Rs156bn to Rs2.6trn over FY15-26 (59% CAGR)
 - Mobile phone production/exports represent 48%/61% of the respective India numbers
- Smartphones and telecom equipment made up 52.5% of electronics exports, and 17.5% of electronics imports; integrated circuits made up 23.7% of electronics imports

Exhibit 6: Smartphones and other assembly-led low technological intensity items dominate India's electronics exports



Source: Niti Ayog, Emkay Research

Exhibit 7: Integrated circuits, advanced PCB-A, and laptops dominate India's electronics imports



Source: Niti Ayog, Emkay Research

- The first wave of electronics manufacturing growth brought India onto the global electronics trade map and enabled Indian companies to develop global partnerships

B) Next chapter in India's electronics story

"Our effort is not limited to self-reliance in final products. We are also moving towards self-reliance in components. This is our strategy – first products, then components, and now semiconductors."

- Narendra Modi, 04-Jul-26

- Electronics manufacturing in India is transitioning from assembly to components and design. EMS companies benefit from this trend by:
 - Deepening manufacturing capabilities backed by government capital subsidies (\$20bn across ECMS and ISM2.0)
 - Increasing domestic value addition (from ~20% today to >35% by FY30)
 - Improving cost structure through domestic sourcing (~3-5% excluding duty arbitrage per our estimates)
 - Substituting imports to grow domestically (~90-100% imports for key components)
 - Unlocking export opportunities (growing from ~1% national share in global electronics trade to 6-7% by 2030)

Deepening manufacturing capabilities:

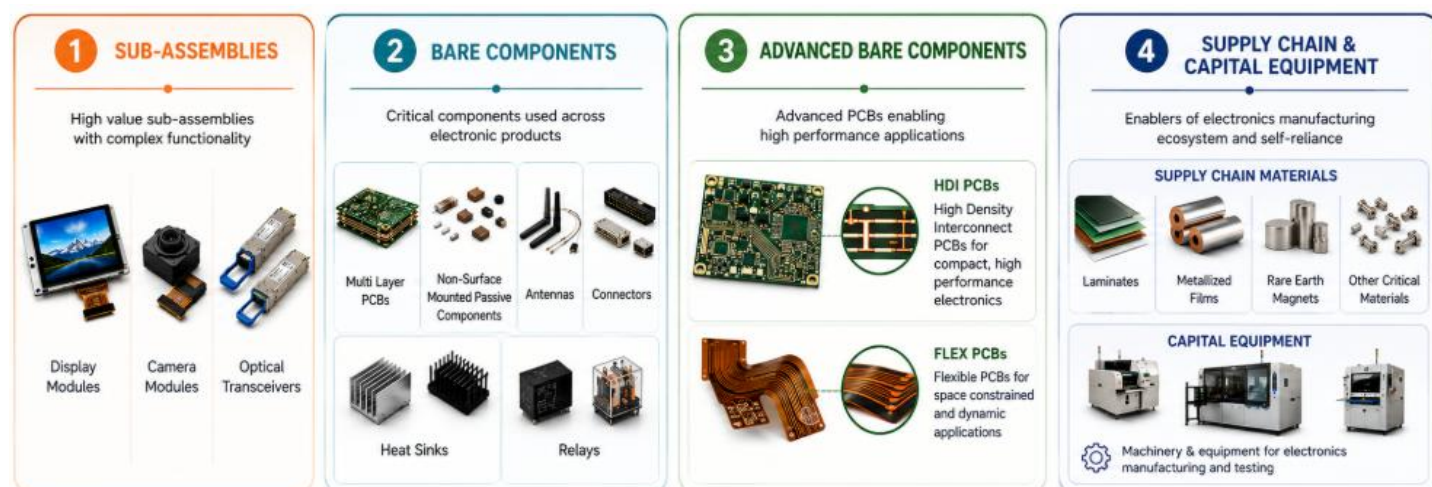
- Policy and industry focus has shifted to building a strong and self-sustaining ecosystem for electronics components manufacturing
- Electronics components and semiconductors are the two key policy thrust areas supported by ECMS and ISM schemes respectively
- The Electronics Components Manufacturing Scheme (ECMS) was notified on 8-Apr-25 with an original outlay of Rs230bn; the outlay was increased Rs400bn in budget FY27
 - Until 30-Mar-26, 75 applications had been approved under ECMS with expected investment of Rs 617bn and production value of over ~Rs4.4trn

Exhibit 8: ECMS scheme tranche wise approvals

ECMS Scheme tranches	Date	Investment (Rs bn)	Projected Production (Rs bn)	Direct employment (no of persons)
Tranche 1	27-Oct-25	55	366	5,100
Tranche 2	17-Nov-25	72	651	11,808
Tranche 3	02-Jan-26	419	2,582	33,791
Tranche 4	30-Mar-26	71	845	14,246
Total		617	4,443	64,945

Source: MEITY, Emkay Research

Exhibit 9: ECMS scheme – overview of components approved for production



Source: MEITY, Emkay Research

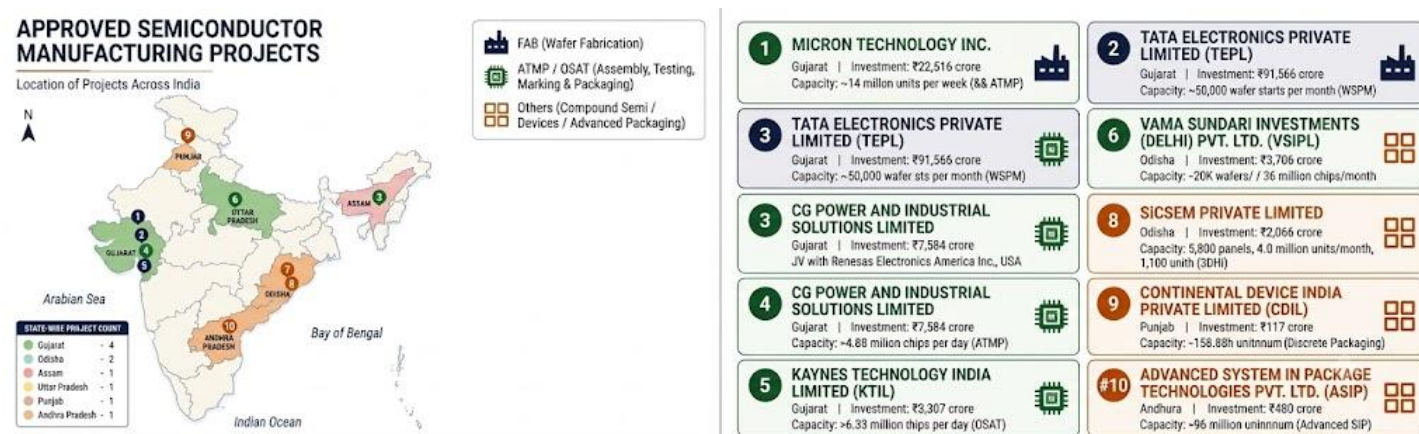
- ECMS approvals include: 1) Sub-assemblies – display modules, camera modules, optical transceivers; 2) Bare components – multi layer PCBs, non-surface mounted passive components, antennas, connectors, heat sinks, relays; 3) Advanced bare components – HDI and Flex PCBs; 4) Supply chain and capital equipment - Laminates, metallized films, rare earth magnets, capital equipment

"ISM 2.0 will sharpen Centre's focus on design capabilities while deepening talent pipeline and expanding support infrastructure. India has defined a clear path to 7-nanometre manufacturing as part of the next phase"

- Ashwini Vaishnaw, Union Minister for Information and Broadcasting, 07-Feb-26

- India Semiconductor Mission or ISM 1.0 was launched in Dec-21 with an outlay of Rs760bn; ISM 2.0 was approved in Jul-26 with an increased outlay of Rs1,275bn
- The scheme offers up to 50% fiscal support for silicon fabs, compound semiconductor fabs, ATMP/OSAT units, and chip design
- Under ISM 1.0, 12 projects with cumulative investment of ~Rs1,640bn have been approved across 6 states, comprising: 1 silicon fabrication unit, 2 compound semiconductor fabs, and 9 packaging/ATMP/OSAT units. On the design side, 24 startups are supported under the Design Linked Incentive (DLI) scheme
- ISM 2.0 focus areas include semiconductor equipment and materials manufacturing, full-stack indigenous chip design/IP, advanced nodes, and supply chain resilience
- India's domestic semiconductor market was ~\$45-50bn in FY25 and is projected to reach \$100-110bn by 2030

Exhibit 10: India OSAT projects approved under ISM 1.0 till Dec-25; greater share of OSAT/ATMP approvals



Source: India Semiconductor Mission, MEITY, Emkay Research

Note: Investment figures are as approved. Capacities are as indicated in approvals and may represent different metrics (units/week, units/day, wafers/month, etc.); This map is an artistic rendering intended solely for visual reference and location overview. It is not drawn to scale, and exact geographic boundaries or distances may vary.

Exhibit 11: India has attracted investments in electronics components manufacturing on the back of the ECMS scheme

Electronics Components Manufacturing Scheme (Component and Sub-Assembly Manufacturing)			
Foreign Player (Stake in JV)	Indian Partner (Stake in JV)	Investment Committed	Facility Details
Shinhyup Electronics Co, South Korea (25%)	Syrma SGS Technology (75%)	Rs7.65bn	Multi-layer PCB and Copper Clad Laminate (CCL) manufacturing; Naidupeta, Andhra Pradesh. Shinhyup provides technology and marketing support.
Gemtek Technology Co, Taiwan (40%)	Dixon Technologies India (60%)	Undisclosed	Optical transceiver product manufacturing - SFP modules and BOSA modules for AI, cloud, hyperscale data centers and next-generation optical communications.
HKC Corporation / HKC Overseas, China (26%)	Dixon Technologies India (74%)	Rs3.7bn	LCD and TFT-LCD display module sub-assembly manufacturing for mobile phones, notebooks, automotive displays, and TVs. Phase 1 capacity: 24mn smartphone displays and 2mn laptop/automotive displays annually.
Q Technology (Group) Co/Kunshan Q Tech Microelectronics, China (49%)	Dixon Technologies India (51%)	Undisclosed	Camera module and fingerprint module sub-assembly manufacturing for mobile handsets, IoT devices, and automotive.
AT&S AG, Austria	Standalone	Undisclosed	Multi-layer and HDI PCB manufacturing.
TE Connectivity, USA/Switzerland	Standalone	Undisclosed	Connector manufacturing for electronic applications.
Samsung Display Co, South Korea	Standalone	Undisclosed	Display module sub-assembly manufacturing.
Foxconn / Hon Hai Precision, Taiwan	Standalone	Undisclosed	Enclosure manufacturing for mobile phones and IT hardware devices.
Vishay Intertechnology Inc, USA	Standalone	Rs2.25bn	SMD and non-SMD passive capacitor manufacturing.
Vishay Intertechnology Inc, USA	Standalone	Rs0.65bn	Precision resistor and transducer manufacturing.
TDK Corporation, Japan	Standalone	Rs0.67bn	Inductor manufacturing.
Molex LLC (Koch Industries), USA	Standalone	Rs0.70bn	Connector manufacturing.
Amphenol Corporation, USA	Standalone	Rs0.50bn	High-speed connector manufacturing.

Source: Emkay Research

Exhibit 12: India has attracted investments and technological know-how in the semiconductor space on the back of the ISM scheme

India Semiconductor Mission (Semiconductor Fabrication, Packaging, and Testing)			
Foreign Player (Stake in JV)	Indian Partner (Stake in JV)	Investment Committed	Facility Details
Micron Technology, USA (100%)	NA	Rs225bn (~\$2.75bn)	ATMP facility for memory chip packaging (DRAM and NAND flash); Sanand, Gujarat. Inaugurated in Feb-26; first ISM facility to reach commercial production.
PSMC / Powerchip Semiconductor Manufacturing Corp., Taiwan — Technology partner (Build-License-Transfer agreement; not equity co-investor)	Tata Electronics (100% equity owner)	Rs910bn (~\$11bn) for the total project	India's first silicon wafer fab; 50,000 wafers/month capacity; 28–110nm nodes covering automotive, computing, AI, and communications chips; Dholera, Gujarat. ASML signed a lithography equipment supply agreement May-26.
Renesas Electronics, Japan (stake undisclosed; CG Power 92.3% per filing) STARS Microelectronics, Thailand (minority stake)	CG Power and Industrial Solutions (92.3%)	Rs76bn (~\$879mn) for the total project	OSAT/ATMP facility for chips serving consumer electronics, industrial, and automotive applications; Sanand, Gujarat. G1 pilot line inaugurated in Aug-25.
AOI Electronics, Japan — Technology partner Infineon Technologies, Germany — MoU for MEMS and Power bare dies UST Global — ~10% CCPS equity investor SealSQ — JV partner (scope unconfirmed)	Kaynes Semicon Pvt (subsidiary of Kaynes Technology India)	Rs33bn (~\$383mn) approved	OSAT facility; Sanand, Gujarat. Extensive multi-partner technology and equity structure covering MEMS, power semiconductors, and IoT security chips.
Foxconn (Hon Hai Precision), Taiwan (equity split undisclosed)	HCL Group (equity split undisclosed)	Rs37bn (~\$435mn) for the total project	Fab and OSAT facility for display driver ICs (DDICs); 20,000 wafers/month; 36mn chips/month output; near Jewar Airport, Uttar Pradesh. Commercial production targeted for 2027.
Clas-SiC Wafer Fab, UK (minority; technology partner)	SiCSem Pvt (subsidiary of Archean Chemical Industries), India (majority)	Rs20bn (~\$239mn) for the total project	India's first commercial Silicon Carbide (SiC) compound semiconductor fab; 60,000 wafers/year; targets EV, defense, fast chargers, solar inverters, and data centers; Bhubaneswar, Odisha.
3D Glass Solutions, USA (100%) (Intel and Lockheed Martin reported as financial backers)	NA	Rs19bn (~\$224mn)	India's first glass substrate and advanced heterogeneous packaging facility; targets 5G and next-generation electronics; Bhubaneswar, Odisha. Commercial production targeted for Aug-28.

Source: Emkay Research

More domestic value addition and improved cost structure to aid growth via import substitution and exports

- India's domestic value addition in electronics manufacturing today is in the 18-20% range as per Niti Ayog with the country targeting to grow it to >35% by 2035
- Components manufacturing enables EMS companies to improve cost structure beyond labor cost arbitrage and strengthen supply chains
 - Cost structure benefits mainly from sea freight (1-2% for high-volume, low-weight components) and lower WC intensity (1.5-2.5% benefit on WC financing)
 - Duty arbitrage potential: eg, 30% anti-dumping duty on ≤6L PCBs from China/HK
 - For HMLV EMS companies, these diversification bets are generally margin-accretive at the gross profit and EBITDA level; PCB manufacturing (PCB-M) margins are typically ~35% GM and 15-18% EBITDAM and OSAT margins are typically 35-40% GM and 20-25% EBITDAM

Exhibit 13: India's indicative import dependence levels for various key electronics components

Component	Import Dependence (%)
Semiconductors / ICs (all chips incl. logic, memory, analog, MCUs)	90–95%
Bare PCBs (incl. multilayer, HDI, flex)	~88%
SMD Passives (capacitors, resistors, inductors, ferrites)	>90%
Display Modules (flat panel LCD / OLED)	~100%
Display Drivers/Controller ICs (DDICs)	>85%

Source: Emkay Research

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions)

- India is dependent on imports for majority of electronics components today; demand for components like PCBs, ICs, displays etc is met >85% via imports
 - There is a ready domestic market to absorb upcoming capacity
- India exports share in global electronics trade is ~1% (\$42bn) but have clocked 3Y CAGR of ~30%; India is targeting 6-7% share of exports in global electronics trade by FY30 which will require a ~70% CAGR from current levels

Second order effects hard to predict, but will play out

"It would be banal to say that Apple wouldn't be Apple today without China. [But] China wouldn't be China today without Apple. Its investments in the country have been spectacular, rivaling nation-building efforts in cost, man-hours, and impact. In 1999, none of Apple's products were made in mainland China; by 2009, virtually all were. This rapid consolidation reflects a transfer of technology and know-how so consequential as to constitute a geopolitical event, like the fall of the Berlin Wall"

- Abridged from "Apple in China" by Patrick McGee

- The second-order effects of this developing theme are hard to fully predict, so we take instruction from available historical literature in such cases—especially "Apple in China"
 - In his book, "Apple in China", Patrick McGee claims that Apple's investments in China had reached \$55mn pa by 2015, in the form of the value of technology, training, and direct capital transferred
 - Apple itself estimates that, since 2008, it had trained at least 28mn workers
 - Taiwan is estimated to have invested \$203bn over 1991-2022 in China, mainly through Hon Hai Precision (Foxconn)
 - The influx of foreign technology majors brought with it not just capital but the entire ecosystem that supports the global electronics industry, allowing China to rapidly scale its own capabilities and reach where it is today
 - We argue that something similar is possible in India—and India offers a more compelling case on several counts—its democratic polity, geo-political neutrality, geographically strategic location, and its own vast domestic market
- In the near-to-mid term, we are of the view that the government's capital and revenue incentives help reduce project risk, as India's electronics players attempt to move further upstream and capture more value
 - Prefer Syrma SGS over Kaynes and Avalon: Syrma SGS's discipline in operational execution and capital allocation offers a better risk-reward vs Kaynes, in our view; Avalon is not taking direct exposure to components/semiconductors yet
- In the mid-to-long term, if India succeeds in increasing its value share in electronics manufacturing, success will beget success, unlocking a long runway of growth and scale
 - Prefer Syrma SGS and Avalon, while closely monitoring Kaynes for signs of a turnaround, as in our view all three players are potential beneficiaries of the theme

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Cognification, electrification drive electronification

Identifying the theme: We define cognification as imbuing inanimate objects with intelligent behavior and observe that this has been an ancient human endeavor. Modern-world cognification relies overwhelmingly on electronics and is therefore a demand driver for them. We pick up multiple themes driving electronics demand to make the case that this is structural, not incidental.

- Cognification is the development of situationally logical behavior in inanimate objects—a doorknob that opens only from inside is also 'cognified', albeit at a base level
- Electronification has always been about cognification; artificial Intelligence is the biggest advancement in cognification and is dependent on electronification
- A long list of themes supports that view—proliferation of data centers, fully self-driving vehicles, industrial robotics and automation, networked consumer electronics, etc.
- The new-age economy favors electrification for higher efficiency and lower noise/emissions—evidenced by electric mobility and the rising share of electricity in primary energy consumption
- Electronification increases with electrification, owing to the common energy form used, and it becomes easier/more efficient to use electronics as the control layer in electrified systems
- Three demand drivers for Indian EMS players: 1) New electronification products; 2) import substitution; and 3) exports/global supply chain participation
- We study six key sectoral themes and map the exposure of Indian EMS players to each

A) Datacenter servers

Our view: The datacenter server is among the few AI-related opportunities that Indian investors might be able to play through the EMS sector. High growth, but low margins (3-8% EBITDAM) for products that can be priced as high as \$2-3mn

- Datacenter capex, driven by AI datacenter growth, could reach an annual run rate of ~\$800bn by CY28-CY29
- This translates into an annual EMS EBITDA opportunity of ~\$15-20bn, mainly contributed by advanced AI motherboard PCB-A and server/rack integration
 - AI server racks built around Nvidia's GB200 NVL72 architecture can sell for \$2-3mn
 - Globally, the AI-server market is dominated by ODMs such as Dell and EMS assemblers such as Foxconn (~40% market share globally)
 - Other EMS players specialized in AI-servers are Wiwynn (TWSE: 6669), Wistron (TWSE: 3231), Inventec (TWSE: 2356), Celestica (NYSE: CLS), and Jabil (NYSE: JBL)
- India is targeting to scale up and further indigenize its high-performance computing (HPC) systems by 2030
 - Target to deploy 90 petaflops (PF) of computing capacity under the National Supercomputing Mission (NSM) by March 2026
 - Indigenous content is currently ~50% and expected to be >70% by decade-end
- Syrma SGS has partnered with Giga Computing for motherboard PCB-A of two of Giga Computing's server platforms, with a structured roadmap to progress to system integration and complete box-builds
 - Giga Computing is an unlisted subsidiary of Gigabyte (TWSE:2376) focusing on AI-servers; it has server architecture certifications from Nvidia, AMD, and Intel
- Kaynes and Avalon are playing this theme through the National Supercomputer Mission (NSM)—both are approved vendors for NSM's Rudra 1 servers
 - Kaynes' ambitions in PCB-M also include plans to make PCBs up to 74 layers, HDI PCBs up to 8 layers, and flexible PCBs—these PCBs are also relevant for AI servers
 - However, transitioning from new PCB manufacturing to one of the most competitive and quality-intensive applications would require significant execution bandwidth
- Margins are comparable to low mix electronics (3-8% EBITDAM) but the products themselves can be priced as high as \$2-3mn (advanced AI server racks)

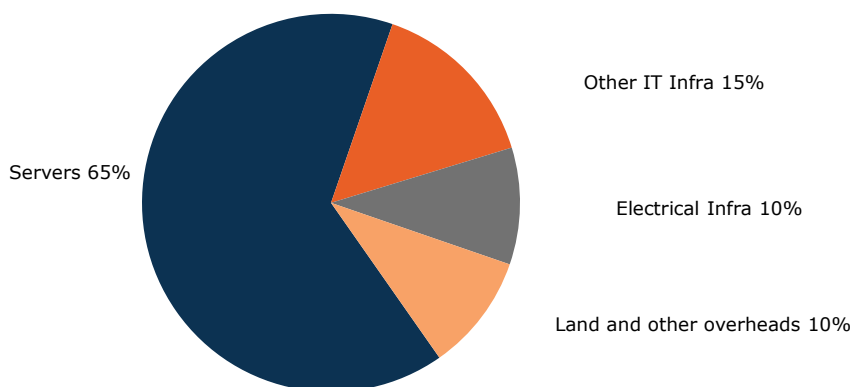
"AI opportunity is transforming our company. We closed FY26 with more than \$64 bn in AI server orders, shipped more than \$25 bn throughout the year, and are entering FY27 with record backlog of \$43 bn"

- Jeff Clarke, Vice Chairman and COO, Dell Technologies, during 4QFY26 earnings call

"AI server shipments are on track to double in 2026 compared to 2025; the company maintaining approximately 40% market share in AI server rack assembly globally"

- Young Liu, Chairman, Foxconn, 1Q 2026 results call

This report is intended for Tamil White Margin Solutions. For more information, contact emkay@white-marginsolutions.com

Exhibit 14: Servers corner majority share of capex for AI Datacenters

Source: Emkay Research

Exhibit 15: Global EMS majors and estimated market share in the AI datacenter server market

Manufacturer	Market share	2025 Total revenue (\$ bn)
Foxconn (Hon Hai)	40%	258
Quanta Computer	27.50%	45
Wistron	9%	28
Inventec	6%	18
Super Micro	6.50%	25

Source: Company, Emkay Research

B) Power transmission electronics

Our view: A structurally driven transmission capex cycle to create incremental >Rs12bnpa India opportunity and ~Rs215bnpa global opportunity with healthy margin profile (GM: ~25%; EBITDAM: ~10-15%), favoring HMLV EMS players with strong global OEM relationships

- Investments in upgradation/expansion of power transmission infra across all major markets, to accommodate changing supply demand dynamics—an increased renewables mix on the supply side, and data centers, electric vehicles, etc, on the demand side
 - India – Rs9trn (~\$95-100bn) by 2032; Rs6trn remaining to be deployed
 - USA – \$1trn by 2035; \$950bn to be deployed
 - UK – £170bn (~\$130bn) by 2035; £120bn to be deployed
 - EU – €475bn (~\$545bn) by 2035-2040; ~€380bn to be deployed
- Based on our analysis of recently awarded projects by country and their rate schedules, electronics opportunity size works out to 5-7% of total transmission capex
- We expect Indian HMLV EMS players are at the cusp of rapidly gaining market share driven by manufacturing cost advantage and significant domestic and global demand

"Annual grid investment needs to increase by approximately 50% to ~\$600 billion by 2030, from today's \$400 billion — yet grid investment continues to lag far behind generation investment, leaving 2,500+ GW of projects stalled in connection queues worldwide."

- IEA Electricity 2026

Exhibit 16: Our estimate on the EMS addressable opportunity arising from budgeted grid investments; grid investment budgets have continued to inch up and electronics content measured herein is estimated from the 'Schedule of Rates' of recently awarded project

	India	USA	UK	Germany	France	Italy	Rest of EU
Transmission Capex - to be deployed (\$ bn)	63	950	162	132	106	23	178
Outer year for deployment	2032	2035	2035	2037	2040	2034	2040
Split between Line and non-Line Capex	42:58	52:48	45:56	47:54	45:55	31:70	44:56
EMS addressable opportunity (Rs bn)/year	12	121	25	17	10	3	16

Source: IEA, Emkay Research

- In our view Avalon is particularly likely to grow in this segment; management has said that they are working with 2 global customers and prototype deliveries have commenced

C) Automotive electronics

Our view: Global automotive electronics could grow at a 3-5x multiplier of the automotive market driven by electrification and autonomous driving; we forecast Indian automotive electronics to grow at 1.4-1.6x multiplier. The sector has been a major growth driver for Indian HMLV EMS players as they gain value share by leveraging their expertise in high reliability PCB-A, power electronics, magnetics and testing/packaging.

- Electrical and electronics (E&E) components today account for 12% of total auto components, growing 10% yoy in FY25/FY24, per ACMA
- Per a 2025 study by ACMA and BCG, the global automotive electronics share of total vehicle BOM cost could rise from 30-35% in 2020 to 45-50% by 2032
 - For India, the number is much lower today, expected to be in the range of ~10%, and estimated by industry experts to grow to ~25% by 2030
 - ACMA/BCG estimates are ahead of McKinsey's, with global automotive electronics forecast to double from \$250bn in CY22 to \$450-500bn by 2030 (CAGR 9-10%)
- Electronification is driven by an ever-increasing feature list, with almost every new feature added to PVs/2Ws relying heavily on electronics; below are a few examples:
 - Emissions-norms-driven features (electronic fuel injection, on-board diagnostics)
 - Increased cognification of "driving" (ADAS, cruise control, collision avoidance)
 - Infotainment systems (digital clusters, infotainment screens, voice-assisted controls)
 - Safety systems (anti-lock braking systems, traction control, geo-fencing/anti-theft)
- The transition to electric vehicles will unlock new opportunities in battery management systems, advanced motor/drivetrain controllers, and charging infrastructure; this will be partially offset by the displacement of ICE-engine and geared-transmission electronics

"In contrast to the overall vehicle market, which is growing by around 1.0 percent CAGR annually, the global automotive software and electronics market could grow by 4.5 percent CAGR and reach \$519 billion by 2035."

- McKinsey, "The automotive software and electronics market through 2035"

Exhibit 17: India automotive electronics components – we forecast ~14% CAGR over FY25-FY30E on rising electronics content per vehicle

	FY20	FY21	FY22	FY23	FY24	FY25	FY26E	FY27E	FY28E	FY29E	FY30E
Electrical and Electronics	345	392	477	672	738	808	898	1,016	1,168	1,349	1,565
yoy growth in E&E components		13.7%	21.8%	40.7%	9.8%	9.6%	11.2%	13.1%	15.0%	15.5%	16.0%
yoy growth in Auto Mkt value		3.1%	16.9%	33.1%	27.2%	7.1%	8.0%	9.0%	10.0%	10.0%	10.0%
Multiplier		4.39	1.30	1.23	0.36	1.34	1.40	1.45	1.50	1.55	1.60
CAGR FY25-30E											14.1%

Source: ACMA, Emkay Research

- EMS players with exposure to the Automotive segment have seen their revenue grow even faster than the growth in auto electronics components numbers would suggest (Kaynes's Automotive vertical ~40% CAGR over FY22-FY26; Syrma SGS's Automotive vertical ~39% CAGR over FY23-FY26)
- The faster growth in this vertical for EMS players can be attributed to more workshare for EMS companies:
 - EMS workshare has increased as electronics complexity/quality requirements have increased—not immediately apparent in headline automotive electronics production
 - For example, in vehicle lighting systems, EMS workshare increased with features such as daytime running lamps, follow-me home lights, sequential turn indicators, etc.
 - Kaynes and Syrma Automotive revenue in FY25 was ~2% of the total auto E&E market – ample room for value share gains
- We expect Automotive EMS CAGR at >30%, driven by increased electronification, work-sharing, localization, import substitution, and exports
- In our view, while all three companies are positioned favorably to take advantage of this theme, we give Syrma SGS a slight edge, owing to its wider addressable market, SGS Teknics legacy, and new initiatives such as the JV with Kaga Electronics

D) Railway electronics

"Indian Railways aims to expand the Kavach network by 9,000 route kilometers over the next two years, with a target to increase installation capacity to 10,000 route kilometers per year thereafter. The cost of Kavach is approximately Rs50 lakh per kilometer."

- Ashwini Vaishnaw, Union Minister for Information and Broadcasting, 26-Mar-26

Our view: A significant domestic advanced box-build opportunity with >30% growth opportunity driven by government investments and EMS workshare improvements; high margins but also generally high receivables days, owing to government-related customers

- Railway electronics continue to see traction as Indian Railways and the government push for improvements to collision avoidance systems, electronic interlocking, and other upgrades
- Annual budgetary allocations to Signaling and Telecommunication posted a 23% CAGR over FY20-BE27—representing 2.6% of total capex in BE27, vs 1.1% in FY20
 - Among the many signaling and telecommunication modernization programs is RDSO's indigenously developed automatic train protection system called Kavach
 - We estimate that Kavach implementation alone will require Rs400bn expenditure resulting in cumulative Rs50bn EBITDA opportunity to FY30
 - Orders in Kavach 5.0 (for metro rail, busy sub-urban networks, etc), train management systems and other modernization programs represent additional upside to these estimates

Exhibit 18: While the majority of Railway capex is consumed in track and rolling stock, the signaling and telecommunication systems budget has seen an impressive 23% CAGR over the last 7 years, likely to continue driven by modernization, safety enhancements, and automation

(Rs bn)	FY20	FY21	FY22	FY23	FY24	FY25	BE26	BE27
Total railway capex	1,617	2,151	2,314	2,622	2,652	2,694	2,652	2,930
- o/w signaling and telecommunication	18	18	21	42	56	56	68	75
as a % of total railway capex	1.08%	0.84%	0.93%	1.60%	2.10%	2.07%	2.56%	2.56%
7Y CAGR of S and T capex								23.11%

Source: Emkay Research

Exhibit 19: We estimate EMS EBITDA opportunity from Kavach and Electronic Interlocking of at least Rs50bn to 2030

(Rs bn)	Work yet to begin	EBITDA opportunity
Kavach: Tracksides (route kilometers)	38,548	17
Kavach: Locomotives (units)	8,979	11
Electronic Interlocking: Stations (nos)	635	23

Source: Emkay Research

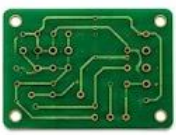
- We favor Avalon and Syrma; Kaynes strategy for Kavach entails execution risks
 - Avalon is the EMS partner for Kyosan's Electronic Interlocking and Kavach products—Kavach products are guided to begin production by 2HFY27; given Avalon's track record and its OEM partner's reputation, we are confident of its right to win
 - Syrma SGS supplies railway electronics to global railway majors and also supplies to Indian Railways—the company has targeted an incremental Rs2bn in revenue from its Elemaster JV
 - Kaynes has chosen the unique strategy of developing its own Kavach product and licensing it to railway majors—however, we believe this is a somewhat more difficult strategy to execute
 - In our view competition risk from auto ancillaries entering PCB-A will remain limited as auto ancillaries will find better synergies by deploying capital to transition into auto subsystem OEMs rather than entering into EMS

E) Printed Circuit Board (PCB) manufacturing

Our view: A major gap area in domestic electronics manufacturing capability—over-reliant on imports, critical to national security and industrial ambitions; strong growth driven by import substitution, electrification, and exports with 15-18% EBITDA margins and 16% post-tax ROCEs

- Bare board PCBs underpin the entire electronics ecosystem—the India bare board PCB market was \$4.3bn in FY25, domestic production of only \$600mn (the rest ~90% imported)
- Domestic production has grown at 27.3% over the last three years; both domestic demand and production are likely to grow much faster in the coming years
 - Demand drivers include: 1) PCB-A import substitution, resulting in greater domestic bare board PCB sourcing; 2) increasing electronics content; and 3) exports
 - Domestic production is likely to grow rapidly—Kaynes, Syrma SGS, Amber, and SRF are targeting commercialization of capex worth Rs69.5bn (~\$730mn) by FY28
 - Assuming PCB asset turns of ~1.5x, this could add production worth \$1bn by FY30E
 - India has 0% BCD on bare board PCBs but has anti-dumping duties of up to 30% those imported from China/HK—these duties today apply to <=6L PCBs
 - India cannot raise BCD on bare board PCBs (from 0%), but if required, protective measures in the form of anti-dumping duty and countervailing duty are available

Exhibit 20: Types of PCBs by layer type – the Indian market is currently dominated by <=8 layer PCBs

1. Single Layer PCB	2. Multilayer PCB	3. Flex PCB (Flexible PCB)	4. HDI PCB (High Density Interconnect)	5. Metal Core PCB (MCPCB)
 Copper Substrate  Constructed on a single insulating layer with copper on one side. Simple design and low cost.	 Top Layer Dielectric Inner Layer 1 Dielectric Inner Layer 2 Dielectric Bottom Layer  Multiple copper layers laminated together with insulating layers. Enables higher complexity and performance.	 Copper Polyimide (Flexible Substrate)  Made from flexible polyimide material. Lightweight, bendable and ideal for compact, dynamic applications.	 Microvia Dielectric Inner Layer Dielectric Microvia Bottom Layer  Higher wiring density using microvias, fine lines and pads. Supports miniaturization and high performance.	 Copper Layer (Circuit) Dielectric Layer (Insulator) Metal Core (Aluminum)  Uses a metal core (usually aluminum) for superior heat dissipation. Ideal for high power LED, electronics and automotive applications.

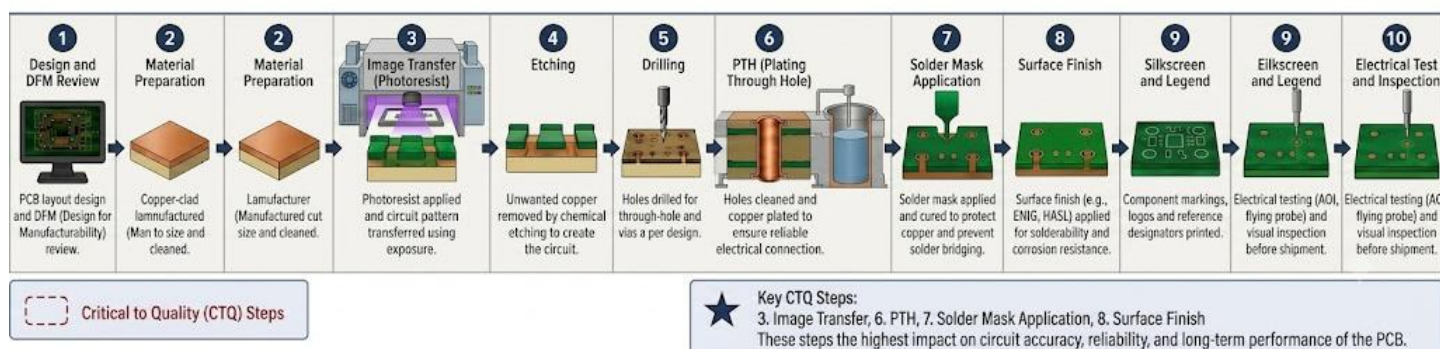
Source: Emkay Research

- Market dominated by <=8-layer PCBs, but moving toward higher layer count
 - PCB layer count is directly proportional to end-product complexity, and miniaturization; lower-layer PCBs are usually used in lighting, automotive, industrials, etc.
 - Higher-layer PCBs find applications in smartphones, medical devices, computers, etc, where miniaturization and low heat dissipation are important
 - PCBs with fewer than 8 layers form 70-75% of the market by volume, per Syrma SGS management—eventually, the market is expected to shift in favor of higher layer counts
 - Flexible PCBs and High-density Interconnect (HDI) PCBs are slowly gaining prominence, especially for consumer electronics
 - Metal core PCB is a term for PCBs with a metallic core; they are used in applications where heat generation is high, such as lighting and industrial electronics
- Backward integration into PCB-M – Prepreg and Copper Clad Laminates (CCL)
 - A multilayer PCB is essentially a sandwich of “core” layers and “bonding” layers; the core layers are Copper Clad Laminates, and bonding layers are Prepreg; CCL and Prepreg together are the major BOM cost items for the bare PCB
 - Prepreg and CCL are both entirely imported in India currently; under the ECMS scheme, multiple companies have secured capacities for CCL and Prepreg
 - Syrma SGS will be putting up a CCL facility as part of its Phase 2 PCB-M expansion
 - Similarly, Kaynes has also secured approvals to set up a CCL plant and has also indicated plans to set up Prepreg capacity, aiming to be fully self-sufficient

Exhibit 21: Materials cost structure of bare board PCBs

Material	Share of board cost
Copper clad laminate (CCL)	30-45%
- o/w copper foil	42% of CCL
- o/w glass fiber cloth	19% of CCL
- o/w resin system	26% of CCL
Prepreg	5-15%
Surface finish (gold-based)	5-20%
Tungsten carbide drill bits	2-8%
Solder mask ink	2-5%
Dry film photoresist	2-4%
Plating and etching chemistry	5-10%

Source: Emkay Research

Exhibit 22: Understanding PCB manufacturing – process-intensive, with critical-to-quality steps determining yields and profitability

Source: Emkay Research

Exhibit 23: Benchmarking Indian and global PCB manufacturers to understand underlying economics – we model ~35% gross margins, 15-18% EBITDAM, and steady-state ROCE of ~16% for a stabilized asset

Company name	Country	Currency (mn)	Operating revenue	Gross margin	EBITDA margin	Op profit margin	Net fixed asset turns (x)	Net WC turns (x)	Core pre-tax ROIC	ROCE post-tax	DIO (no of)	DSO (no of)	DPO (no of)	NWC days (no of)
Shogini Technoarts	India	Rs	3,907	38.6%	15.3%	13.3%	6.1	4.1	32.2%	29.4%	100.2	98.5	114.2	84.6
AT&S India	India	Rs	3,915	44.1%	-8.3%	-21.0%	1.8	8.2	-31.2%	-25.6%	93.1	67.9	75.3	85.7
Ascent Circuits	India	Rs	3,252	41.5%	19.0%	16.8%	3.0	3.1	25.6%	16.6%	124.7	97.2	89.4	132.5
Epitome Components	India	Rs	2,557	56.8%	13.2%	9.6%	3.2	2.3	12.8%	6.1%	200.9	86.6	29.6	257.8
Zhen Ding Technology	Taiwan	TWD	1,82,522	29.7%	17.6%	7.6%	1.3	6.6	8.5%	4.8%	55.8	62.8	66.9	51.8
Tripod Technology Corp.	Taiwan	TWD	73,399	31.7%	23.4%	17.6%	3.8	2.8	28.1%	15.3%	87.5	119.1	67.9	138.7
Compeq Manufacturing	Taiwan	TWD	75,996	26.1%	18.2%	10.7%	2.0	5.0	15.2%	11.1%	74.9	89.1	96.7	67.3
AT&S	Austria	€	1,590	33.1%	13.8%	-8.1%	0.5	7.7	-3.6%	-2.1%	50.0	84.2	104.6	29.6

Source: Company, Emkay Research

- In terms of economics, the PCB-M business has several moving parts, being a process-oriented chemical business
 - Gross margins in the business are generally in the range of 35-45%, depending on product mix, yields, and level of backward integration
 - Non-Indian players also include equipment depreciation (~10%) in "cost of revenue" causing their gross margins to appear optically lower
 - Yield in the PCB business measures good PCBs fabricated as a % of total PCBs fabricated—low yields reduce PCB sales revenue (partially offset by scrap revenue) and directly eat into gross margins
 - Theoretical maximum gross fixed asset turns are in the range of 1.2-2x
 - EBITDA margins generally settle around 15-18%, excluding incentives

- There is wide variation in WC days, depending on whether sales are captive, external or exports; whether industries served are high-volume or low-volume; and whether the majority of sourcing is domestic or imported—for well-optimized Indian players, observed in the range of 80-85 days
- Our individual company models factor in the above assumptions in the specific context of each company—generally, we have taken the lower end of the ranges

F) Outsourced Assembly and Test (OSAT)

Our view: OSAT is the only piece of the broader semiconductors theme that any of the HMLV EMS players are exposed to—through Kaynes. This foray is likely to continue receiving government support, given the strategic nature of the industry, but it comes with significant execution risks, owing to high capital investments, closely guarded technological know-how, the importance of customer relationships, and geo-political spillover effects.

- OSAT is among the sectors identified for capital support under the ISM Semicon schemes
- As an industry, OSAT is intensive on three dimensions: process control, customer relationships, and capital investments
 - Process control: OSAT output is the final usable chip and, like the PCB industry, yield is an important factor in profitability; however, yield requirements in OSAT are much more stringent, with final test yields approaching ~99% levels
 - Customer relationships: The importance varies—at the leading-edge level, where there are only ~10 design players; it is challenging for any new player to win business from existing customers; however, in power semiconductors or mature/analog chip categories, where design players number in the hundreds, new players can win new business through a combination of strategic rationale (diversification, distance to market) and commercial terms
 - Capital intensity: While not as capital intensive as semiconductor foundries, OSAT is still relatively capital intensive, with assets generally needing replacement in ~7 years; asset turns for OSAT players generally range from 0.5x to 1.5x, depending on the technological maturity of chips and the proportion of testing in the overall mix, with higher testing generally increasing asset turns
- The top 10 OSAT players reported combined revenue of \$44bn, >9.7% yoy
 - Geographically, OSAT capacity is largely concentrated in China and Taiwan, with the remainder in Southeast Asia

Exhibit 24: Top 10 OSAT players – capacities are largely concentrated in East and Sout East Asia

Company	Country	FY24	FY25	yoy growth
		\$ mn	\$ mn	%
ASE	Taiwan	18,421	20,156	9.4%
Amkor	USA	6,320	6,710	6.2%
JCET	China	5,051	5,339	5.7%
Tongfu	China	3,228	3,759	16.4%
Powertech	Taiwan	2,270	2,342	3.2%
Huatian	China	1,987	2,320	16.7%
Hana Micron	South Korea	916	1,112	21.3%
King Yuan	Taiwan	832	1,092	31.3%
ChipMOS	Taiwan	703	748	6.4%
Greatek	Taiwan	471	524	11.2%
Top 10		40,199	44,100	9.7%

Source: Company, Emkay Research

- The economics of OSAT depend on multiple factors:
 - Type of packaging—advanced packaging like CoWoS has higher margins but lower asset turns
 - Testing vs packaging—testing is generally lower-margin but higher asset turns
 - Typically, power semiconductor OSATs have 10-15% EBITDA margins and ~0.8-1.1x gross fixed asset turns

- Capacity utilization is the key factor in OSAT profitability—the business generally has high fixed costs; we model 80% of below-GM costs as fixed in nature
- ROCE can suffer for under-optimized players (low capacity utilization or low pricing power), or players that make significant capex before demand materializes
- A key monitorable for Indian OSAT players under the Semicon scheme, will be their replenishment capex in the next 7-10 years

Exhibit 25: Study of global OSAT players – economics are punishing, mainly due to fast equipment-replacement cycles with D&A eating into otherwise healthy EBITDA and driving down overall ROCEs

Company	Classification	Op rev (\$ mn)	Gross margin (%)	EBITDAM (%)	NFA Turns (x)	DIO (no of)	DSO (no of)	DPO (no of)	ROCE (%)
Lingsen	Mid-sized generalists	174	10.0%	3.2%	1.6	38	97	29	-7.4%
Tong Hsing	Mid-sized generalists	361	39.2%	25.3%	0.9	87	69	47	5.3%
Greatek	Mid-sized generalists	524	37.8%	33.7%	1.4	31	99	34	11.2%
Winstek	Mid-sized generalists	145	41.0%	34.4%	0.9	24	83	22	11.0%
Unisem	Mid-sized generalists	420	59.9%	18.2%	0.8	144	44	85	3.7%
King Yuan	Memory specialists	1,092	57.3%	46.5%	0.5	28	77	22	10.4%
Powertech	Memory specialists	2,342	33.3%	27.1%	1.1	48	106	56	9.2%
Hana Micron	Memory specialists	1,112	24.1%	18.6%	1.4	77	62	46	8.7%
ChipMOS	Memory specialists	748	32.1%	25.0%	1.2	76	101	26	2.2%
ASE	Large-sized diversified	20,156	28.0%	17.8%	1.4	55	75	70	7.9%
Amkor	Large-sized diversified	6,710	23.6%	16.5%	1.6	31	73	65	7.6%
JCET	Large-sized diversified	5,339	24.2%	15.4%	1.3	47	58	100	4.5%
Tongfu	Large-sized diversified	3,759	24.6%	19.0%	1.0	75	70	126	4.8%
Huatian	Large-sized diversified	2,320	28.6%	19.7%	0.6	86	67	148	1.1%

Source: Company, Emkay Research

Exhibit 26: OSAT is capital intensive, mainly due to high replacement capex needs; asset turns are typically in the range of ~0.8-1.1x



Source: Industry reports, equipment manufacturers' websites (Applied Materials, ASMPT, BESI, Kulicke & Soffa, Towa, Advantest, Nordson, Viscom), Emkay Research

This report is intended for Team White Marque Solutions (team.emkay@whitemarqueresolutions.com)

Exhibit 27: Understanding the semiconductor market based on chip types and positioning of Indian OSAT and fabs (Part 1 of 2)

Integrated circuits (IC)				
Semiconductors class	Design	Foundry	OSAT	India's positioning
Leading-edge logic, ≤10nm <i>(flagship smartphones, PCs/laptops, AI accelerators and datacenter, GPUs)</i>	~10 design players: Apple, Qualcomm, Nvidia, AMD, Intel Entry barriers: - Customer relationships: High - Capital intensity: High - Tech know-how: High	TSMC (Taiwan, dominant); Samsung Foundry (Korea); Intel Foundry (US, emerging)	Advanced packaging (CoWoS, InFO, 2.5D/3D) done almost entirely in-house by TSMC/Samsung; Amkor/ASE get overflow only when TSMC capacity is constrained	No chip fab or OSAT in India in this bucket. HIPSPL, Bhubaneswar: a glass-substrate advanced-packaging play (glass interposers, 3DHI modules) whose end-customers are AI/datacenter, 5G/6G, automotive radar, defense, aerospace, photonics. Rs19bn (including Rs8bn Central + ~Rs4bn state support); promoter 3D Glass Solutions Inc (US; investors include Intel, Lockheed Martin); commercial production targeted for Aug-28; full volume Aug-30
Advanced logic, 12nm-22nm <i>(mid-tier mobile SoCs, networking, automotive compute, eg, Tesla FSD, image-sensor logic)</i>	15-25 design players: STMicroelectronics, NXP, Sony, Tesla, Broadcom Entry barriers: - Customer relationships: Moderate - Capital intensity: Moderate - Tech know-how: High	TSMC, Samsung Foundry, GlobalFoundries (12/22nm FD-SOI)	Largely captive/in-house at TSMC and Samsung for logic	None
Mature/analog/mixed-signal, 28nm-90nm+ (up to 180nm) <i>(automotive MCUs, industrial control, power management ICs, IoT, cost-sensitive legacy electronics)</i>	~300 design players: Infineon, NXP, STMicroelectronics, Texas Instruments, Renesas—top 5, >50% combined share Entry barriers: - Customer relationships: Low - Capital intensity: Moderate - Tech know-how: Moderate	TSMC, UMC, GlobalFoundries, SMIC, Vanguard (VIS); Infineon/STMicro/TI also run captive IDM fabs	Primary-tier third-party OSATs (ASE, Amkor, JCET, PTI, UTAC) compete here—this is where CG Semi/Renesas-linked automotive MCU packaging sits	OSATs: (1) CG Semi (Renesas JV; inaugurated Jul-26) (2) Kaynes Semicon (SealSQ JV) (3) Tata TSAT Assam (partial, auto/EV mandate) (4) Suchi Semicon (Surat) (approved May-26, PIB) Fab: Tata-PSMC, Dholera: India's first and only silicon logic fab. 50,000 wafers/month at 28nm-110nm. First silicon target Dec-26.
Memory				
Semiconductors class	Design	Foundry	OSAT	India's positioning
HBM (high bandwidth memory) <i>(AI accelerators/GPUs only Nvidia/AMD-class datacenter silicon)</i>	SK Hynix (~50-55% share), Samsung (~35-40%), Micron (~5-10%)—tight, closed 2-3 player market, SK Hynix dominant (not an even 3-way split)	TSV stacking in-house by SK Hynix/Samsung/Micron; interposer/logic integration via TSMC CoWoS	No independent/third-party OSAT plays this segment; entirely in-house plus TSMC advanced packaging	None
Standard memory (DRAM + NAND + LPDDR) <i>(smartphones, PCs, servers, automotive, flash storage)</i>	Samsung (~39%), SK Hynix (~29%), Micron (~22%) — top 3 = ~90% combined; China's CXMT grown ~3%→~8% share in ~1 year	Captive—IDM model, own fabs	PTI (Taiwan OSAT) historically #1 in combined DRAM/NAND packaging	OSAT: (1) Micron Sanand: 101.6M units/month ATMP; operational Feb-26 (2) Sahasra Semiconductors (Bhiwadi, Rajasthan): Memory packaging for MicroSD/flash; 60M units/year scaling to 400-600M in 2-3Y; +60% exported (US/Germany/France/China)

Source: Company, Emkay Research

This report is intended for Team White Marque Solutions (team.emkay@whitemarquesolutions)

Exhibit 28: Understanding the semiconductor market based on chip types and positioning of Indian OSATs and fabs (Part 2 of 2)

Power semiconductors				
Semiconductors class	Design	Foundry	OSAT	India's positioning
Power semiconductors (Si/SiC/GaN) <i>(EVs and chargers, home appliances, industrial motors, renewables/solar inverters, grid, data-center power delivery)</i>	Infineon, STMicroelectronics, Texas Instruments, onsemi, Alpha, and Omega Semiconductor (AOS) Materials: Si dominant; SiC and GaN faster-growing niche	Largely captive/IDM (Infineon, STMicro, onsemi run own fabs); AOS designs power discretes/modules and uses own Fabs/OSAT, as well as outsourced model	Mostly captive/IDM back-end, with growing third-party OSAT layer for fabless/hybrid companies (eg, AOS) and IDM overflow. Concentrated in Taiwan/China plus SE Asia. Top 10 OSATs = >80% of industry revenue; ASE+Amkor >40%	OSATs: 1) Kaynes Semicon (Sanand): AOS anchor customer, live production (IPM5 Si-IGBT, 17 dies/pkg; ramp up to ~1.5M chips/day), Infineon MoU (MEMS mic + power bare die), Fujitsu power modules, 2) Mitsui+AOI JV, UST equity (~10% CCPS, scope unconfirmed); 3) Suchi Semicon (Surat) Fabs: (1) SiCSem (Bhubaneswar): UK Clas-SiC tech partner, approved in Aug-25. (2) RIR Power Electronics (Bhubaneswar): SiC fab announced in Nov-25 (3) CDIL (Mohali): brownfield high-power discrete expansion, approved in Aug-25.
Display drivers ICs (DDIC)				
Semiconductors class	Design	Foundry	OSAT	India's positioning
Large-area DDIC 110nm-300nm, 8-inch wafers <i>(TVs, monitors, large-format commercial displays)</i>	Fabless-heavy, LCD-focused: Novatek, Himax, Raydium, Sitronix (Taiwan)	China's NexChip is now the largest single player (~42-55% share, 2Q-3Q24), surpassing combined Taiwan foundries UMC/Vanguard/PSMC (~38%)—rapid shift toward Chinese foundry capacity in this sub-segment	COF (Chip-on-Film)/COG (Chip-on-Glass) packaging; distinct back-end process from bare-PCB or power OSAT	OSAT: Sahasra Semiconductors (Bhiwadi): packages LED driver ICs Fab: Tata-PSMC Dholera: three-way alliance with Himax and PSMC for DDICs on 28nm/wafer stacking technology
DDIC—Smartphone/OLED (TDDI), 28nm-90nm, 12-inch wafers <i>(used in: smartphone OLED/AMOLED screens, laptops, tablets, automotive displays)</i>	Korea vertically integrated: Samsung LSI, LG-affiliated Silicon Works. Taiwan fabless: LX Semicon (Apple-linked)	AMOLED DDIC foundry capacity monopolized by 5 foundries globally: Samsung, UMC, TSMC, GlobalFoundries, SMIC—tighter bottleneck than large-area LCD tier	Same COF/COG discipline at finer geometries; Taiwan/Korea/China/Japan >85% of global wafer starts for DDIC overall	OSAT: HCL-Foxconn (Jewar, UP): targeting DDICs for smartphones/laptops/PCs/automotive.
LED/Display emitters (GaN Mini/Micro-LED)				
Semiconductors class	Design	Foundry	OSAT	India's positioning
GaN Mini/Micro-LED emitters <i>(TV panels, IT/smartphone displays, XR glasses and smartwatch micro-displays, automotive displays)</i>	Samsung, Sony, LG Display, BOE, AUO: top 5 = ~56% combined. Mostly vertically integrated (design+manufacture), unlike fabless/foundry logic split. PlayNitride is the exception—tech/IP licensor to Epistar/AUO manufacturing	Epistar, Sanan Optoelectronics, HC SemiTek, ENNOSTAR, AUO: Taiwan/China-concentrated epitaxy & chip production	Not a traditional OSAT model—vertically integrated fab+ATMP is the industry norm	Fab + OSAT: Crystal Matrix (Dholera): India's first commercial Mini/Micro-LED fab: 72,000 sqm display panels/year + 24,000 RGB GaN epiwafer sets/year. Integrated fab+ATMP in one facility.

Source: Company, Emkay Research

India favorably positioned in global strategic calculus as electronics manufacturing destination

Our view: India's democratic polity, geo-political neutrality, geographic location, and domestic market size work in its favor. We see evidence that manufacturing has shifted not just from China but also from SEA peers. We believe this trend will accelerate, driven by 1) the signing of free trade agreements and 2) India offering a large market for global electronics majors.

A) The shift to India is broad-based

- We showcase, through the examples below, that the shift to India is much more broad-based than a simple China+1; in some cases, China+1 is the driving force, while for others it is determined by India's incentives and access to India-market opportunities

■ Shift in Apple's ecosystem to India

- Supplier base scaled from 14 in CY23 to >40 in CY25, overtaking Vietnam (~35); Chinese suppliers now account for <10% of Apple's India supplier base
- India assembled ~55mn iPhones in CY25, +53% YoY, or ~25% of Apple's 220–230mn global output; Apple is targeting ~60mn (all US-bound) iPhones from India in CY26.
- Foxconn has committed >\$5bn to India across iPhone, AirPods, enclosures and display-driver IC manufacturing, while China investment momentum slowed after CY18.
- AirPods is an early sign of India taking share from ASEAN: India's production share rose from 1% in CY25 to 4% in 1QCY26, while Vietnam fell from 64% to 62%; Foxconn is scaling Indian capacity to ~200k units/month

■ Shift in Samsung's ecosystem to India

- Doubled Noida smartphone capacity from 68mn to 120mn units, backed by ~Rs49bn investment; the plant was explicitly positioned as a "Make for the World" export hub.
- Closed its last remaining China factory in CY20, with India identified as a replacement export hub—a commitment to produce phones worth over \$40bn over five years, with the majority priced above \$200 to be exported
- Shifted OLED display manufacturing from China to Noida in 2021, extending India's role beyond handset assembly

■ Automotive

- Renesas expanded India semiconductor R&D and automotive electronics activities, while also co-investing in the CG Power OSAT facility.
- Bosch manufactures ECUs, sensors and control modules in India, increasingly serving export markets.
- Denso targets 2x India revenue by 2030, driven by EV component localisation and ADAS

■ Railway

- Siemens won a Rs260bn contract for 1,200 locomotives, to be assembled at Dahod.
- Alstom is supplying traction equipment from Vadodara and has exported 3,800+ bogies from India to global markets.
- Wabtec invested \$18mn in a new Rohtak manufacturing campus, its third India site, supplying braking systems and components to Indian Railways and metros.

■ MedTech

- Siemens Healthineers is localizing CT/MRI manufacturing under the PLI scheme and investing ~Rs1.9bn in an integrated R&D/production campus.

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- Wipro GE Healthcare manufactures CT, ultrasound, patient monitoring, ECG and ventilator equipment in India.
- Philips is localizing MRI coils, with cumulative eligible sales under the Medical Devices PLI reaching Rs123bn by Sep-25, including Rs59bn of exports.

■ Aerospace

- Boeing sources >\$1.25bn annually from India, through 300+ suppliers; its Bengaluru facility manufactures advanced composite structures for commercial aircraft.
- GE invested \$30mn in Pune aerospace manufacturing, adding advanced manufacturing capabilities for aircraft components.

B) Free trade agreements and electronics

- India is broadening preferential market access for electronics exports, with the US, GCC and Chile offering incremental export opportunities
- India-US BTA — the most important near-term catalyst for electronics:
 - US is India's largest smartphone export market, with exports set to rise sharply as Apple scales India production
 - India already benefits from tariff exemptions on smartphones under the latest US measures; the broader BTA could provide a more durable and preferential tariff position versus China and ASEAN
 - HMLV EMS players have generally demonstrated greater ability to pass through US tariffs, limiting direct margin upside; LMHV players have greater exposure to volume-led export opportunities
 - India has agreed to reduce/eliminate tariffs on US industrial goods, while sensitive electronics categories are likely to remain protected
 - A tariff structure that gives India an advantage over China/Vietnam/ASEAN could accelerate relocation of electronics manufacturing and exports to India
- India-GCC FTA — opens a large, underpenetrated electronics market
 - Negotiations formally launched in Feb-26, covering India and all six GCC members
 - GCC markets generally levy ~5% MFN tariffs on electronics, with UAE and Oman already benefiting from India's existing CEPAs
 - Saudi Arabia is the largest incremental opportunity, providing sizeable electronics import market (~10bn) with limited existing Indian penetration
 - Tariff elimination could improve India's competitiveness in Gulf markets and create a new export destination for Indian EMS/electronics manufacturers
- India-Chile CEPA – meaningful export opportunity, expanding presence in LatAm
 - Chile levies tariffs of ~6% on most imports (including electronics); the proposed CEPA could reduce/remove tariffs on Indian exports
 - Chile's electronics import market is estimated at ~\$5bn per year

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Exhibit 29: Indian free trade agreements and comprehensive economic partnerships have broadened preferential market access for electronics exports

Agreement and partner	Status	Changes in treatment of India's electronics exports	Changes in treatment of India's electronics imports
India-EU FTA	Concluded Jan-26; pending ratification	EU currently levies up to 14% on Indian electronics. FTA eliminates tariffs on 99.6% of electronics export lines from EIF. EU electronics market: ~\$820bn; ICEA sees India's exports rising from ~\$12bn to \$50bn by 2031 and \$100bn by 2035	EU-origin electronics already face low MFN duties (0–3.7% on most HS 85 lines). India's final tariff schedule for EU electronics is pending ratification
India-Oman CEPA	In force Jun-26	Oman eliminates up to 5% MFN duties on electronics from Day 1. Electronics imports into Oman: ~\$1.7bn in 2025; India's share only \$146mn, leaving significant headroom	India liberalizes 94.8% of imports by value from Oman. Electronics-related sensitive items subject to TRQs / minimum import prices; limited impact given Oman's small electronics exports to India
India-New Zealand FTA	Signed Apr-26; pending ratification	NZ eliminates tariffs on 100% of Indian goods from EIF. Electronics previously faced 0–5% tariffs (average ~2.2%). NZ electronics market: ~\$4–5bn. NZ also commits ~\$20bn investment in India over 15 years	India provides phased market access to NZ; electronics schedule pending ratification. Limited import risk given NZ's small electronics export base
India-UK CETA	In force Jul-26	UK eliminates duties on Chapters 84, 85, 90–92 from Day 1, including electronics and electrical machinery. Previous MFN tariffs reached 12–16%. UK electronics imports: ~\$50bn/year; India engineering & electronics exports projected to exceed \$7.5bn by FY30	India retains protection on several electronics categories: smartphones, smartwatches/telecom products, routers/modems, display & camera modules excluded; PCBA Year 10. Batteries and TVs zero-rated from EIF
India-EFTA TEPA (Switzerland, Norway, Iceland, Liechtenstein)	In force Mar-24	EFTA provides duty-free access to 99.6% of India's industrial exports. Switzerland gives zero duty on industrial goods, including electronics. EFTA committed \$100bn FDI over 15 years	India provides phased concessions on 82.7% of tariff lines / 95.3% of EFTA import value over up to 10 years. Electronics and machinery are included in the phased schedule
India-Australia ECTA	In force Apr-22	Australia eliminated duties on 96% of Indian goods by value from Day 1, rising to 100% in 4 years. HS 85 electronics included in Day-1 zero-duty tranche. Australian electronics imports: ~\$24bn/year	India eliminated tariffs on 85% of Australian exports from Day 1, rising to 90% in 6 years. Limited electronics import risk given Australia's small electronics export base

Source: Emkay Research

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The government has demonstrated commitment to the sector through various incentives and policy actions

Our view: We show in this section that the government has demonstrated its support for electronics manufacturing in India through multiple incentive schemes, offering capital subsidies, turnover-linked incentives, and hybrid structures. India is committing significant semiconductor incentives relative to the size of its electronics manufacturing comparable with major semiconductor-producing economies, despite India being at a much early stage of semiconductor production.

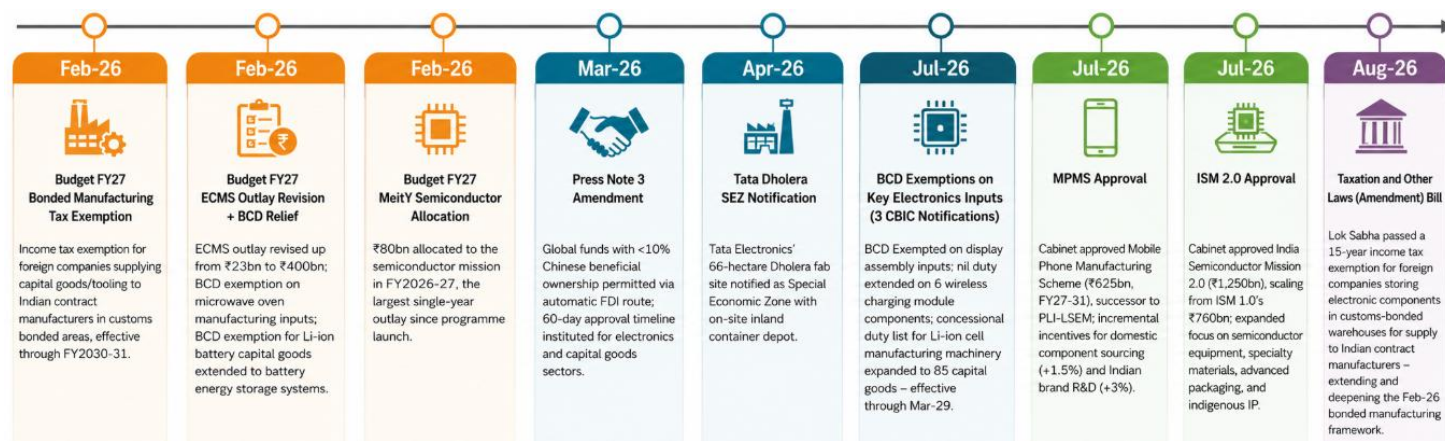
- India's electronics manufacturing targets are anchored by Niti Aayog's policy outline:
 - \$500bn in electronics output by 2030 (\$350bn finished goods, \$150bn components; ~4x current levels; 6mn jobs)
 - \$100bn domestic semiconductor market by 2030, leveraging India's ~20% share of global chip design engineering workforce
 - \$120–150bn semiconductor value chain by 2035, via a "More-than-Moore" strategy centered on mature nodes, OSAT/packaging, and compound semiconductors (SiC, GaN)

Exhibit 30: Exhibit 29: A review of central government schemes for electronics and electronics components manufacturing – Mobile Phone Manufacturing Scheme is the latest addition to the list with detailed rules yet to be notified; ECMS is the most relevant scheme as of now for Indian HMLV EMS players

Scheme	Objective	Incentive Structure	Approved Outlay	Current Status	Highlights
Mobile Phone Manufacturing Scheme (MPMS)	Scale mobile manufacturing; increase domestic value addition; build Indian brands	Turnover-linked: 2.25–5.0%; +1.5% for domestic sourcing; +3.0% for product design/R&D by Indian brands	Rs625bn; approved Jul-26	Active; 5 years (FY27–31); successor to PLI-LSEM	Targets Rs39.0trn cumulative production and ~60k direct jobs. 99.2% of mobiles used in India are domestically manufactured; smartphones were India's largest export category in FY25
Electronics Component Manufacturing Scheme (ECMS)	Build domestic component capacity across mobile, IT, auto, medical and industrial electronics	Hybrid: turnover-, capex- and employment-linked; base year FY25	Rs229bn; enhanced to Rs400bn in Feb-26	Active; 6 years (FY26–32)	75 projects approved across 12 states; Rs617bn projected investment and ~65k direct jobs as of Mar-26. 3rd tranche: 22 projects, Rs42bn investment, Rs2.6trn output
PLI 2.0 for IT Hardware	Scale domestic production of laptops, tablets, PCs, servers and USFF devices	Turnover-linked PLI	Rs170bn; notified May-23	Active; 6 years (FY24–29)	27 companies approved. As of Dec-25: ~Rs17bn production, ~Rs1bn investment and ~5k direct jobs
PLI for Large Scale Electronics (PLI-LSEM)	Scale mobile phone and specified electronic component manufacturing	Turnover-linked PLI	Rs410bn; notified Apr-20	Closed; ended Mar-26; succeeded by MPMS	Rs206bn cumulative scheme investment and ~137k direct jobs as of Mar-26. Avoids conflating scheme outcomes with broader electronics/PLI exports
Modified EMC (EMC 2.0)	Develop electronics manufacturing clusters and common infrastructure	Capex subsidy	Rs38bn; notified Apr-20	Active; applications closed Mar-24; implementation ongoing	11 EMCs + 2 CFCs approved across 10 states; ~4,400 acres. Rs52bn project cost, Rs25bn Central assistance and Rs1.5trn projected investment
SPECS	Build domestic component manufacturing capacity	25% capex subsidy on eligible investment	Rs33bn; notified Apr-20	Active; applications closed; implementation ongoing	~32 projects approved; ~ Rs65bn investment
Electronics Development Fund (EDF)	Provide risk capital to electronics and IT companies	Fund-of-funds	Rs100bn corpus; launched 2015	Active; fund-of-funds	Invested through daughter funds; 128 companies/startups supported and 368 IPs created/acquired as of Feb-26
M-SIPS	Attract investment in large-scale ESDM manufacturing	20–25% capex subsidy, depending on location	Demand-driven; approvals > Rs100bn	Closed; applications ended 2018	304 applications approved; legacy projects continue to contribute to India's electronics manufacturing base
EMC (Original)	Develop greenfield electronics clusters and common facilities	Capex subsidy	Rs40bn; notified 2012	Closed	161 companies commenced commercial production; ~15mn man-days generated

Source: Emkay Research

■ GoI has also been very proactive in addressing industry feedback or concerns with the changing geopolitical and international competitive landscape

Exhibit 31: GoI has been proactive with minor policy interventions in addition to incentive scheme notification

Source: Emkay Research

Exhibit 32: A review of central government schemes for semiconductor manufacturing, testing and packaging – ISM 2.0 is the latest addition to the list with detailed rules yet to be notified; depending on final draft, Avalon could benefit from its SME supply contracts

Scheme	Objective	Incentive Structure	Approved Outlay	Current Status	Highlights
India Semiconductor Mission 2.0 (ISM 2.0)	Deepen semiconductor ecosystem across equipment, materials, packaging, design and advanced technologies	Programmatic support for R&D, infrastructure and ecosystem development	Rs1,250bn; approved Jul-26	Active; rules yet to be notified	Outlay increased from Rs760bn under ISM 1.0. Expanded focus to advanced packaging, equipment, materials, chip design, R&D and talent. 13 projects approved across 7 states; Rs1,640bn investment as of Jul-26
Semiconductor Fab Scheme	Establish semiconductor wafer fabs in India	Capex subsidy of up to 50% of project cost	Part of Rs760bn ISM 1.0 outlay; notified Dec-21	Active; under implementation	Tata Electronics-PSMC fab at Dholera, Gujarat targeting first silicon in late 2026; 28nm+ process technology
Display Fab Scheme	Establish TFT-LCD and AMOLED display fabs	Capex subsidy of up to 50% of project cost	Part of Rs760bn ISM 1.0 outlay; notified Dec-21	Active; limited progress	Complements semiconductor ecosystem but has seen materially fewer project commitments than semiconductor fabs/ATMP
Compound Semiconductor & ATMP/OSAT Scheme	Build specialty semiconductor and packaging ecosystem	Capex subsidy of up to 50% of project cost	Part of Rs760bn ISM 1.0 outlay; notified Dec-21	Active; multiple projects under implementation	Includes SiC, GaN, sensors, photonics and semiconductor packaging. Micron's Sanand ATMP facility inaugurated Feb-26; Kaynes and CG Semi projects progressing toward commercial production
Design-Linked Incentive (DLI)	Build domestic fabless design and semiconductor IP ecosystem	Up to 50% design-cost reimbursement + deployment-linked incentives	~ Rs10bn initial allocation; launched 2021	Active; scaling	24 design projects supported; 105 startups/MSMEs with EDA access; Rs4bn VC raised; 315 academic institutions supported as of May-26
Chips to Startup (C2S)	Build chip-design capabilities across academia and startups	EDA access + chip fabrication support	Government program; no standalone fixed outlay	Active	397 institutions participating; 56 chips fabricated at SCL Mohali
Semiconductor Skill Development	Build workforce for fabs, ATMP and chip design	Training infrastructure + industry partnerships	Multi-agency funding	Active	60k-100k engineers targeted; programs led by NIELIT, AICTE and industry
Modified Semiconductor Programme – FY27 allocation	Fund ongoing semiconductor fab, ATMP and design projects	Budgetary allocation + project-linked disbursement	Rs80bn FY27	Active; annual allocation	Largest annual allocation since program launch; supports ongoing fab, ATMP and design commitments

Source: Emkay Research

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Exhibit 33: India's ~\$15bn semiconductor package is smaller in absolute terms but sizeable relative to its electronics manufacturing base

Country/Program	Strategic focus and key areas	Total outlay, key bucket, and tax incentives
India Semicon India Program / ISM 1.0 & 2.0	Build a full-stack semiconductor ecosystem spanning fabs, ATMP/OSAT, compound semiconductors, design, equipment and materials. ISM 2.0 expands focus to advanced packaging, equipment, materials, indigenous IP, R&D and talent	Rs1,275bn (~\$15bn) under ISM 2.0, approved Jul-26; ISM 1.0: Rs760bn. Up to 50% capex subsidy for fabs, display, compound semiconductors and ATMP/OSAT; DLI provides design-cost reimbursement + deployment-linked incentives. No semiconductor-specific tax credit
USA CHIPS & Science Act (2022)	Rebuild domestic semiconductor manufacturing; secure leading-edge and legacy chips; expand advanced packaging; strengthen semiconductor R&D and workforce	\$52.7bn federal semiconductor funding; \$39bn manufacturing incentives + \$13.2bn R&D/workforce. Support via grants, loans and guarantees. 25% investment tax credit for qualified semiconductor manufacturing investment
China National IC Fund – Big Fund I / II / III	Drive semiconductor self-sufficiency across foundry, memory, equipment, materials and design, with increasing focus on domestic equipment and supply-chain localization	~\$87.5bn across Big Fund I–III: ~\$19bn / ~\$28bn / \$47.5bn. Big Fund III focuses particularly on equipment and manufacturing. Additional regional funds, subsidies, financing and tax incentives provide further support
European Union EU Chips Act (2023)	Strengthen semiconductor sovereignty and target 20% global market share by 2030; develop advanced fabs, open foundries, pilot lines, design platforms and supply-chain resilience	€43bn policy framework, combining EU and member-state support; €11bn under Chips for Europe for R&D, pilot lines, tools and skills. Manufacturing support primarily via member-state state aid, including grants for qualifying first-of-a-kind facilities
Japan METI / NEDO Semiconductor Program	Rebuild domestic semiconductor manufacturing across mature nodes, advanced 2nm and next-generation packaging/photronics. Key projects include JASM/TSMC, Rapidus, Kioxia and Micron	~¥3.9trn (~\$28bn) committed through FY23–24. Major support for JASM/TSMC, Rapidus, Kioxia and Micron. NEDO capital subsidies + R&D tax incentives; additional support subsequently provided to Rapidus
South Korea K-Chips Act / Semiconductor Support Program	Preserve global memory leadership; develop semiconductor mega-clusters; strengthen fabless companies, materials/components/equipment and supporting infrastructure	KRW33trn (~\$23bn) 2025 support package, including low-cost financing and infrastructure support. Investment tax credit: 20% for large/mid-sized firms and 30% for SMEs; R&D tax incentives extended. 2026: additional KRW5trn (~\$3.5bn) semiconductor fund + KRW5trn supplier trade finance

Source: Company, Emkay Research

Exhibit 34: India's ~\$15bn semiconductor incentive envelope equals ~0.4% of GDP and ~13% of total electronics manufacturing output, despite India's semiconductor industry being at an early stage of development

Country	2024 GDP (\$bn)	Electronics manufacturing output (\$bn)	Headline incentive envelope (\$bn)	Incentive / GDP	Incentive / electronics output
India	3,900	115	15.0	0.38%	13.0%
USA	28,800	500	52.7	0.18%	10.5%
China	18,700	801	87.5	0.47%	10.9%
EU	19,000	400	11.0	0.06%	2.8%
Japan	4,000	400	28.0	0.70%	7.0%
South Korea	1,875	162	23.3	1.24%	14.4%

Source: Emkay Research

Valuation methodology

- We use a three-stage DCF valuation methodology across all three companies
- We use a trailing 3M average 10-year bond yield as the risk-free rate—at 6.9%
- We use an ERP of 6%, implying a ~13% expected return on the broader market
- We use a sector-average beta of 1.29, and then unlever and relever it to obtain individual company betas
 - Our sector beta has an R-squared of 0.43 (65% correlation to the index) and a standard error of 0.14, implying an effective beta range of 1.74-1.20 (95% confidence interval); We used Nifty 500 as the index
- We use a post-tax WACC ($w_d * r_d * (1-T) + w_e * r_e$; our tax rate assumption is 25%)
- Our forecast period extends to FY33E—for a target price in Jun-27E, this gives us a 5-year-9-month forecast period relevant to the DCF
- The second stage of our DCF uses a 15-year period with 15% FCFF growth, while the terminal growth rate is 5%, in line with long-term GDP growth rate expectations for India
 - We believe this is well supported by a combination of three factors: 1) Underlying growth of electronics production; 2) increased outsourcing of electronics production to EMS; and 3) increased market share gain by Indian EMS from global competitors
- We use a terminal growth rate of 5%

This report is intended for Team White Marque Solutions (team.emkay@whitemarquesolutions)

We initiate coverage on Syрма SGS Technology with BUY and DCF-based Jun-27E TP of Rs2,050 (~35% upside), implying FY28E PER of 66x. We favor Syрма SGS for its diversified organic and inorganic growth, margin expansion levers, and execution track record. The company 1) will invest ~Rs8.0/15.3bn in PCB-M by FY28/30 at its PCB-M JV with Shinhyup, 2) has expanded via acquisitions in medtech (Johari Medtech) and maritime defense (Elcome), 3) has broad-based organic (eg MSI, Giga Computing technical partnerships) and inorganic (Elemaster/Kaga JVs) growth momentum in core EMS, and 4) practices adequate strategic caution in business selection (rebalancing consumer EMS/smart meters, avoiding OSAT) to avoid undue stress on the balance sheet. Syрма SGS delivered revenue/PAT CAGR of 62%/66% over FY21-26; we expect 35%/42% revenue/PAT CAGR over FY26-31E. In our view, Syрма SGS offers balanced exposure to the India electronics manufacturing theme with meaningful upside potential and room for valuation multiples to catch up with the growth story.

Sustained growth momentum in EMS; supplemented by new acquisitions/JVs

Syrma SGS's core EMS operations have registered an impressive 5Y/3Y revenue CAGR of 62%/33%, driven by diversified exposure to core EMS sectors (Autos, Industrials, MedTech, Consumer, and IT+Railways) backed by a supportive public policy and global supply-chain rebalancing. The company is now accelerating in high-entry-barrier segments through acquisitions, JVs, and technical partnerships, including defense, railway medtech, railway electronics, and datacenter servers, among others. Syрма SGS has historically been fairly competent in the inorganic assimilation/integration playbook, and we favor it based on the consistency of its inorganic methodology.

PCB-M revenue not included in guidance; street appears to underestimate it

Syrma SGS's 30-35% revenue growth guidance over the next few years excludes revenue from PCB-M. We estimate PCB-M revenue at Rs1.9bn/Rs23bn in FY28E/FY33E, with ~7% revenue share by FY33E. This will be driven by investments, incremental capacity utilization, and yield improvements. We estimate that the -31% EBITDAM in FY28E will improve to +18% by FY33E (CCL backward integration + Flex/HDI high-margin products + PLI). Our assumptions are supported by 1) the Shinhyup partnership, 2) ECMS scheme incentives, and 3) roadmap for graded increments in PCB-M complexity.

Improving mix leads to margin/FCFF expansion; growth+FCFF a winning combo

Syrma SGS is seeking to limit its consumer business to below 30% revenue share and is cautious on WC in smart meters. It has strong growth opportunities in high-margin verticals like Medtech and Defense. Growth in high-margin verticals, along with operating leverage, should result in EBITDAM improving from 11.3% in FY26 to ~15.3% in FY33E. The company will invest a total of Rs15.3bn in its PCB-M JV by FY30, with 50% capital subsidies and the remaining funded through debt and internal accruals. We estimate that Syрма SGS will be FCF-positive in FY28E, and ROE/ROCE will stabilize around 20.6%/22.7% by FY33E (post-PCB-M ramp-up). We believe Syрма SGS is unlikely to raise capital to fund current expansion plans, and any future capital raise is likely aimed at supporting new growth avenues.

Target Price – 12M	Jun-27
Change in TP (%)	NA
Current Reco.	BUY
Previous Reco.	NA
Upside/(Downside) (%)	35.0

Stock Data	SYRMA IN
52-week High (Rs)	1,522
52-week Low (Rs)	634
Shares outstanding (mn)	192.8
Market-cap (Rs bn)	293
Market-cap (USD mn)	3,073
Net-debt, FY27E (Rs mn)	596.6
ADTV-3M (mn shares)	1.5
ADTV-3M (Rs mn)	2,124.5
ADTV-3M (USD mn)	22.3
Free float (%)	0.6
Nifty-50	24,583.8
Rs/USD	95.3

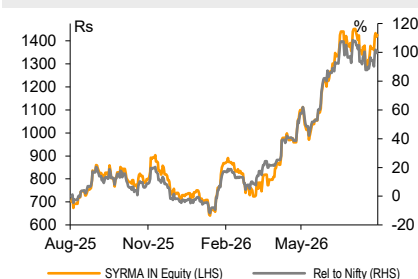
Shareholding, Jun-26

Promoters (%)	42.3
FPIs/MFs (%)	7.5/15.9

Price Performance

(%)	1M	3M	12M
Absolute	4.6	38.1	116.1
Rel. to Nifty	3.0	35.8	114.1

1-Year share price trend (Rs)



Syrma SGS Technology: Financial Snapshot (Consolidated)

Y/E Mar (Rsmn)	FY25	FY26	FY27E	FY28E	FY29E
Revenue	37,867	48,191	69,156	94,245	131,024
EBITDA	3,233	5,445	8,234	10,991	16,413
Adj. PAT	1,720	3,224	4,389	5,948	9,289
Adj. EPS (Rs)	9.2	16.8	22.8	30.9	48.3
EBITDA margin (%)	8.5	11.3	11.9	11.7	12.5
EBITDA growth (%)	59.9	68.4	51.2	33.5	49.3
Adj. EPS growth (%)	50.4	82.9	36.2	35.5	56.1
RoE (%)	10.2	14.0	14.4	16.9	22.0
RoIC (%)	9.7	14.8	16.5	16.3	20.3
P/E (x)	159.2	92.1	66.6	49.1	31.4
EV/EBITDA (x)	85.1	53.1	35.6	26.7	17.8
P/B (x)	16.3	10.2	9.0	7.7	6.3
FCFF yield (%)	(0.3)	0.3	(1.0)	0.5	0.8

Source: Company, Emkay Research

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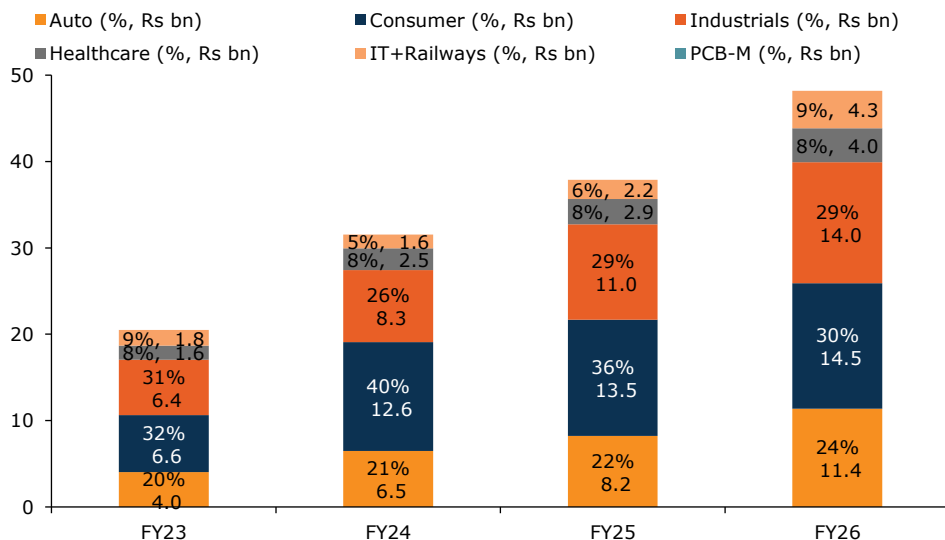
Sustained growth momentum in core EMS, supplemented by partnerships/acquisitions/JVs

Our view: We deep-dive into the company's verticals (except PCB-M – covered later, separately) and demonstrate that it benefits from organic growth momentum in all. We examine its recent/important inorganic actions and demonstrate that they offer strong growth without elevating execution risk for the company. We draw upon Syрма SGS's origins, leadership depth, and past success, to identify the company's strategy that enables it to grow ahead of the industry.

A) Diversified EMS portfolio with growth momentum

- Syрма SGS's verticals: 1) Consumer, 2) Industrials, 3) Automotive + EV, 4) IT + Railways, and 5) Healthcare/MedTech.
- The company is well-diversified, with Consumer, Auto, and Industrials being the mainstay verticals, and IT + Railways and Healthcare growing fast
- Auto, Railways, IT, and Healthcare and Defense will drive growth going forward; PCB-M will start contributing revenue from FY28E

Exhibit 35: Syрма SGS is well-diversified across multiple verticals, with the smaller ones like Healthcare and Railways growing fast as the company leverages its acquisitions/JVs



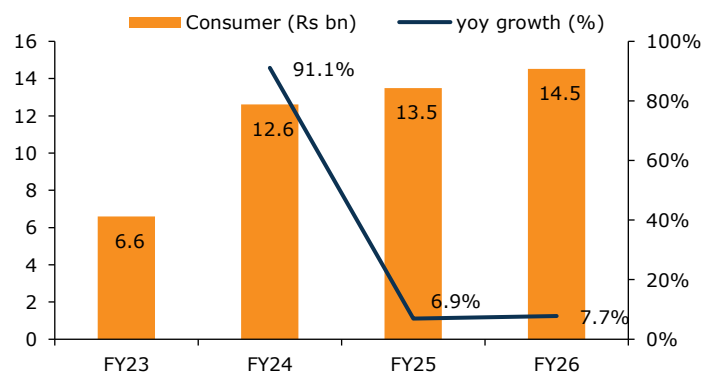
Source: Company, Emkay Research

Exhibit 36: Consumer vertical products – Modems, WiFi Routers, FASTag, BLDC Motors, Water purification systems



Source: Company, Emkay Research

Exhibit 37: Consumer vertical is currently the largest, but the management will be selective on growth ahead in this vertical



Source: Company, Emkay Research

- **Consumer:** FY26 revenue: Rs14.5bn (30% revenue share); FY23-26 CAGR: 30%

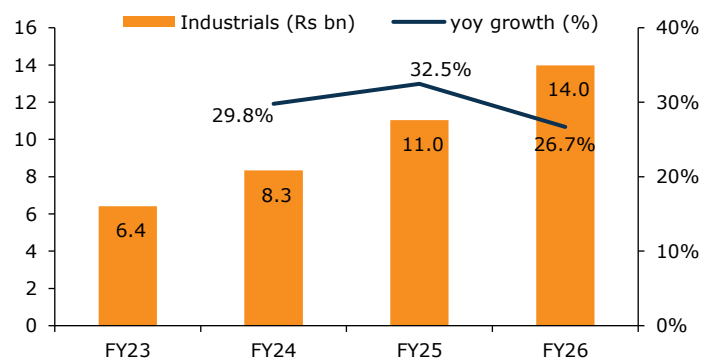
- Products include Modems, WiFi routers, Fastag RFID modules, BLDC motors, water purification systems
- Customers include Eureka Forbes, Bosch, and Atomberg, among others
- The company aims to limit revenue share from this business at 30% for the next few years, due to its low margins—the consumer vertical covers 30% of the end-FY26 order book
- **Industrials (ex-Elcome):** FY26 revenue: Rs14.0bn (29% revenue share); FY23-26 CAGR: 25%
 - Products include smart meters, industrial power supplies, solar controllers, industrial cleaning, connectivity, and communication and display systems
 - Customers include Phoenix Contact, Total Power Europe, and Cyanconnode, among others
 - The management guided for healthy growth in Industrials, led by exports and new products—Industrials form 24% of the end-FY26 order book
 - Within Industrials, the management has guided that it will be selective about growth in the smart metering business, keeping recovery of receivables in sight
 - The defense business was unlocked by the Elcome acquisition; the company expects the defense business to deliver strong growth of 25-30%+ per annum
 - Elcome's FY26 operating revenue (post-acquisition) was Rs1.9bn, with 20-25% EBITDA margin; the company is currently supplying a wide range of PCB-As to various BEL units
 - Syrma SGS has also identified Solar Inverters as a potential growth area—while the KSolare acquisition did not go through, we believe the company will find another pathway to this opportunity; this is an upside risk to our estimates

Exhibit 38: Industrials vertical products – Energy meters, solar controllers, industrial power supplies, HMID systems



Source: Company, Emkay Research

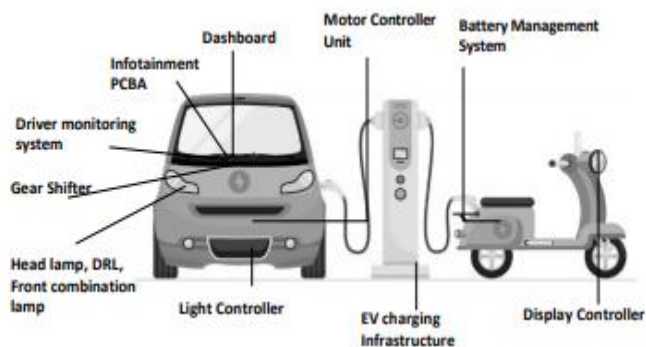
Exhibit 39: Industrials is Syrma SGS's second-largest vertical and comprises the newly acquired Elcome (defense) business as well



Source: Company, Emkay Research

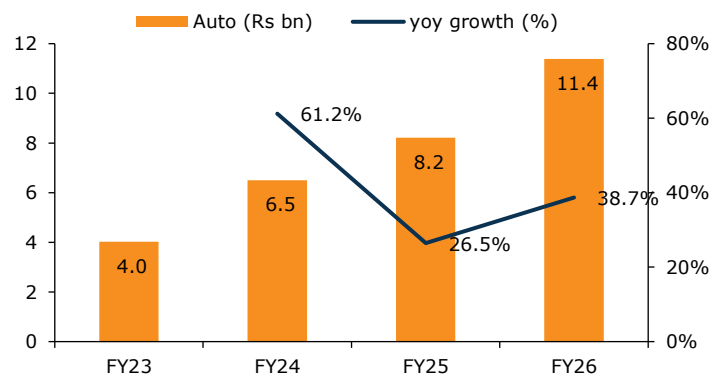
- **Auto + EV:** FY26 revenue: Rs11.4bn (24% revenue share); FY23-26 CAGR: 41%
 - Products include PCB-A headlight, driver monitoring systems, battery management systems, motor controller units, on-board chargers, sunroof controllers, EV chargers
 - Customers include TVS and other large OEMs catering to EV/ICE vehicles
 - The company has a strong positioning in this segment, thanks to the SGS Teknics legacy, plants located close to major Auto hubs, and growth initiatives (eg Kaga JV)
 - The company sees the Automotive business as key to growth, led by the domestic segment albeit also increasing contribution from exports (Rs1,250mn in FY26, ~10% of total exports)
 - Auto forms ~29% of the end-FY26 order book

Exhibit 40: In addition to ICE electronics, Syрма SGS also has a credible bouquet of offerings for electric vehicles



Source: Company, Emkay Research

Exhibit 41: The Auto vertical has been the fastest growing, and we expect it to have majority revenue share by FY30E



Source: Company, Emkay Research

■ **IT + Rail:** FY26 revenue: Rs4.3bn (9% revenue share), FY23-26 CAGR: 34%

- Products for IT include Laptops, Motherboards, PCB Assemblies, Memory Modules
- Syрма SGS has partnered with Micro-Star International (MSI) to manufacture laptops in India, catering to both domestic and global markets
- Products for Railways include signaling systems, door controllers, braking systems, railway cab equipment, interlocking systems
- The company's customers include Railway OEMs like Wabtec and Siemens, among others
- IT and Rail has been Syрма's fastest growing segment, and the company expects a the 40-50% per-year growth to continue – the segment forms 11% of the end-FY26 order book
- The company has entered a 60-40 JV with Italy's Elemaster to manufacture high reliability electronics for the railway, industrial, and medical sectors

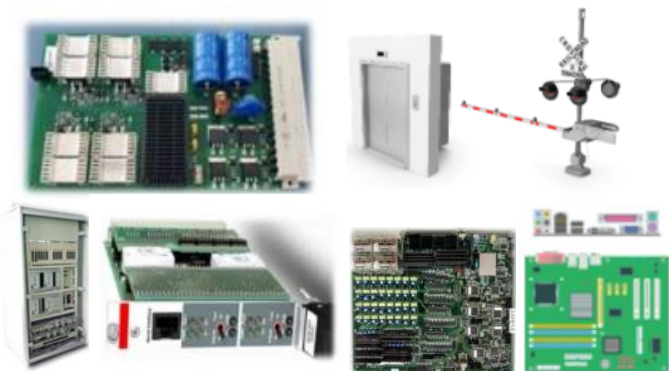
■ **Partnership with Giga Computing for server manufacturing:**

- Giga Computing is an unlisted subsidiary of Gigabyte (TWSE:2376) that focuses on AI-servers; it has server architecture certifications from Nvidia, AMD, and Intel
- Syрма SGS commenced PCB-A for two of Giga Computing's server platforms with a structured roadmap to progress to system integration and complete box-builds
- Server manufacturing is a fast-growing market – global datacenter capex will average at \$750-850bn over CY26-29, per industry estimates
- While a large revenue opportunity, the business has a low margin range of 3.5-8%, depending on sever complexity and system integration requirements, but the products themselves can be priced as high as \$2-3mn (advanced AI server racks)

"Launching our first India-manufactured server product is an important step in our localization strategy. Working with Syрма SGS has enabled us to bring global server design and manufacturing excellence together, delivering high-quality products manufactured in India for the Indian market."

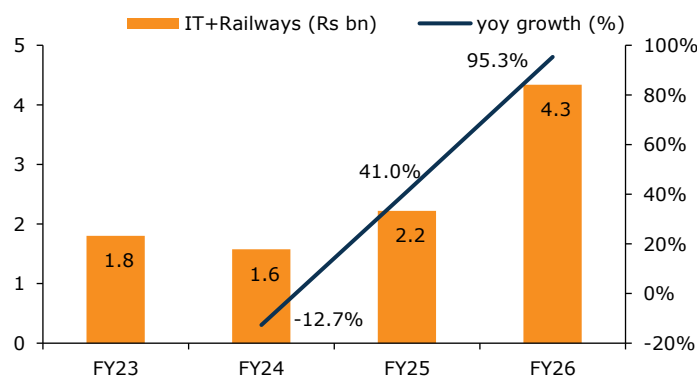
- Andy Neo, Sales Director at Giga

Exhibit 42: IT and Railway products include signaling systems, railway cab equipment, laptops, and motherboard assemblies



Source: Company, Emkay Research

Exhibit 43: The segment posted an impressive >90% growth in FY26; the Elemaster JV will add to the baseline growth



Source: Company, Emkay Research (team.emkay@whitemarquesolutions)

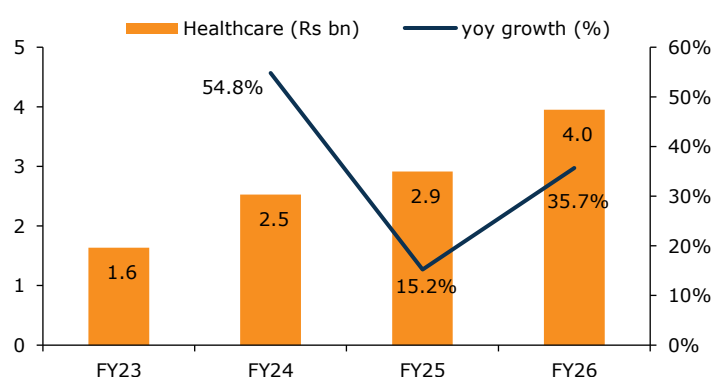
- **Medtech:** FY26 revenue: Rs4.0bn (8% revenue share); FY23-26 CAGR: 34%
 - Products include personal healthcare devices, power supplies for medical devices, high-precision dispensers, and therapeutic devices
 - In 2023, Syrma SGS acquired Johari Digital Healthcare, an ODM specializing in MedTech devices, and facilities compliant with USFDA regulations
 - The MedTech business witnessed a temporary slowdown in FY25 largely owing to a financial crisis at Syrma Johari's largest customer and tariff-related headwinds – the business has recovered in FY26, and the management expects it to deliver strong growth going forward
 - The company has established a dedicated MedTech Design Centre in Pune, and has recalibrated its MedTech strategy to be more outbound and customer-centric, focusing on designing new products for future production rather than solely executing existing businesses
 - This segment formed ~5% of the end-FY26 order book, and Management expects MedTech to cross Rs5bn by FY27

Exhibit 44: Healthcare vertical products include a variety of B2B medical devices and personal healthcare devices



Source: Company, Emkay Research

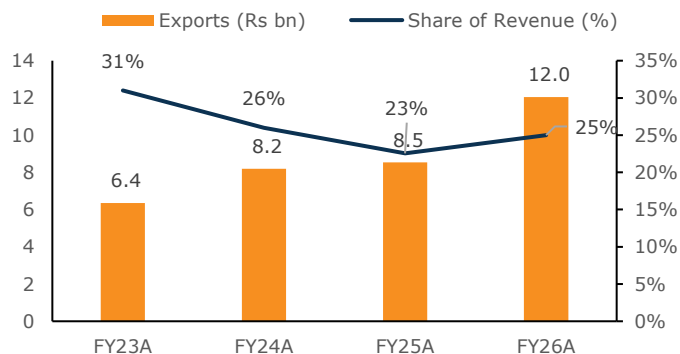
Exhibit 45: We expect the Healthcare vertical to accelerate driven by new products and new customers for Syrma Johari Digital



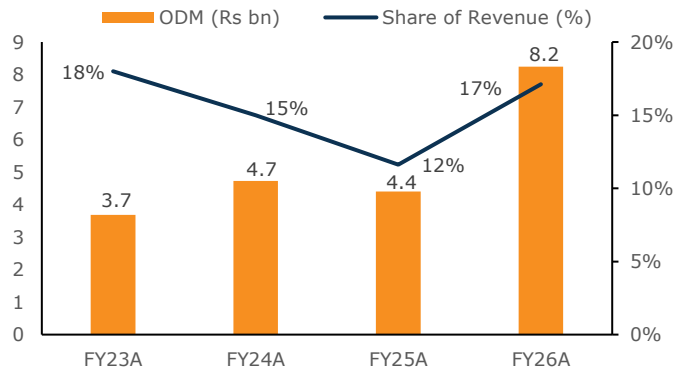
Source: Company, Emkay Research

- **PCB-manufacturing:** This is a new vertical for Syrma SGS, and capital expenditure for this is underway (note: we cover this vertical separately in later sections)
- In addition to the aforementioned vertical-wise growth outlook, there are two other important drivers of growth and profitability embedded in the revenue: ODM and Exports
- **ODM:** or Original Design and Manufacturing, is the transition path for EMS players to a higher value addition, through design, innovation and IP ownership
 - Syrma SGS reported ODM revenue of Rs8.2bn with 17% revenue share in FY26, and FY21-26 revenue CAGR of 26%
 - For Syrma, Medtech, Defense, and Industrials are the major ODM businesses, with Consumer also contributing to some extent
 - ODM EBITDAM is typically 5-7ppts higher than the build-to print business, with higher gross margin partially offset by increased employee expenses
 - The company aims to sustain the ODM revenue share at 17% in FY27, with the long-term target to improve ODM to 25%
- **Exports:** The company reported Export revenue of Rs12bn with 25% revenue share in FY26, and FY21-26 revenue CAGR of 20%
 - The company's FY26 target was Rs11bn, but it is not aiming to achieve Rs15bn in FY27, based on the 4QFY26 exit run-rate of Rs125mn/month
 - Exports are largely driven by MedTech, IT/Rail, and Industrials, with Consumer and Auto also contributing to some extent
 - In FY26, Auto exports grew to Rs1.25bn, representing ~11% of Auto revenue and 10% of total export revenue
 - The company expects to sustain the FY26 monthly export run-rate of Rs125mn in FY27 too, and clock Rs15bn worth exports

This report is intended for Team White Marquee Solutions. (team.emkay@whitemarquesolutions)

Exhibit 46: Exports to grow 30% in FY27, driven by Industrials and Healthcare; tariff uncertainty likely to hurt exports

Source: Company, Emkay Research

Exhibit 47: ODM revenue driven by Industrials and Healthcare; resurgence in healthcare vertical drives ODM share in FY26

Source: Company, Emkay Research

B) Accessing future growth through inorganic route

"A primary focus [of strategic acquisitions] will be investing in complementing verticals and capabilities that align with our core business"

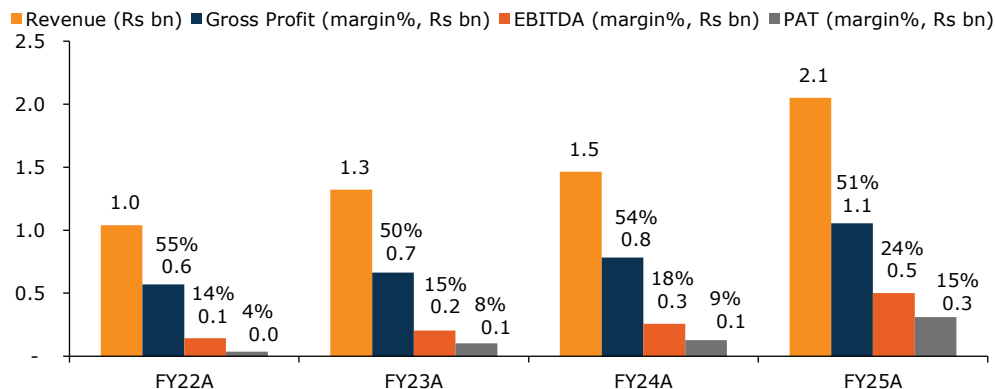
- Sandeep Tandon, Syрма SGS Annual Report 2025

"We expect that the business (Elcome) has the potential to grow at maybe 15%-20% with the present bouquet of products which we have got. But obviously, when we have acquired a platform, and we have got a foot in the door in defense application, we would like to increase the bouquet of offerings"

- J S Gujral, 3QFY26 earnings call

- Syрма SGS has formed multiple joint ventures and technical partnerships, and has also done an acquisition – the underlying theme of all such actions is to expand the addressable market
- Five key inorganic actions likely to have a meaningful effect on Syрма SGS, going forward: 1) JV with Shinhyup for PCB (discussed in the next section). 2) Acquisition of Elcome for the defense business, 3) JV with Elemaster for Railways business. 4) JV with Kaga Electronics for Japanese auto and auto ancillary customers.
- **Elcome acquisition for the maritime defense business:** Syрма SGS acquired 60% of Elcome for a cash consideration of Rs2,350mn; the remaining 40% will be acquired over the next three years, linked to performance and earn-out milestones
 - Elcome specializes in navigation, communication, surveillance, and platform automation systems catering to India's defense and maritime sectors — offering shipboard and shore-based solutions for new-build and retrofit applications, serving the defense, shipyard, port, and harbor sectors
 - Elcome has delivered and commissioned VSAT communication systems on 154 Indian Navy vessels and integrated India's national AIS (Automatic Identification System) network – each month the company services >150 ships and completes >300 repair and maintenance jobs
 - As part of the deal, Elcome acquired Navicom – a company specializing in system design, integration, commissioning, and servicing of marine navigation, communication, automation, and instrumentation for both merchant shipping and defense customers.
 - Revenue of the consolidated Elcome-Navicom entity grew, from Rs1bn to Rs2bn over FY22-25, with FY26 total revenue indicated as Rs2.8bn
 - Elcome + Navicom reported 24.4% EBITDA margin and 15.2% PAT margin in FY25
 - Syрма sees a Rs100-112bn opportunity in India's marine electronics market and has capability to service 60% of this driven by its increasing defense spends, indigenization, and electronification of defense
 - We expect the business to deliver gross margin of >50% and EBITDA margin of ~25%; however, we also model number of receivables days for the business at 180 as customers would most likely be government-affiliated entities
 - We expect Elcome to grow ~14% in FY27E and log ~24% revenue CAGR over FY26-33E; Our estimate of Elcome's FY33E revenue is Rs12.5bn which is ~10% of today's estimated Rs112bn market size

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions)

Exhibit 48: Elcome's key P&L metrics (consolidated for Navicom) – Strong margin profile and growth prospects in the Rs112bn defense maritime electronics market

Source: Company, Emkay Research

Exhibit 49: Elcome's key product categories

Source: Company, Emkay Research

Exhibit 50: Elcome's key customers

Source: Company, Emkay Research

"India is a strategic market for our customers. This joint venture provides us with a reliable, competitive and scalable base in the region, reinforcing our commitment to supporting global OEMs with high-quality, entirely 'Made in India' solutions"

- Valentina Cogliati, CEO of Elemaster Group

■ **JV with Elemaster for Rail business:** Syрма SGS entered a 60:40 JV with Italy's Elemaster SpA Tecnologie Elettroniche

- As part of the JV, an investment of Rs330mn will be made by Syрма and of Rs220mn by Elemaster for setting up a new 20k sqft facility in Bengaluru for SMT, THT, and box-builds
- Elemaster is also an EMS player – PCB-A and integrated mechatronics systems represent ~70% of revenue, with the remainder from design and consulting services
- The company serves deep engineering sectors such as Railways/Transportation, Medical, Automation, and Avionics/Aerospace, among others
- Elemaster reported revenue of €420m in CY24, at CAGR of 16% over CY21-24 – Syрма expects the JV to contribute Rs2bn to consolidated revenue over FY27E/FY28E
- The JV will serve as a platform for Rail and Industrial electronics, with Syрма bringing scaled Indian manufacturing while Elemaster brings design expertise, certification credentials and know-how, and access to >200 European OEM relationships
- The JV will serve both export and Indian customers – we expect revenue contribution from 2QFY27, and model Rs750mn/Rs1,250mn for FY27E/FY28E, with 17% CAGR over FY29E-FY33E

This report is intended for Team White Marque Solutions (team.emkay@whitemarquesolutions.com)

"To establish, develop and operate a technologically advanced, state of the art EMS manufacturing facility together in India focusing on Japanese clients"

- Syrma SGS Press release on JV with Kaga Electronics

- **JV with Kaga Electronics:** Syrma entered a 60:40 JV with the Indian subsidiary of Tokyo-listed Kaga Electronics Co (TSE: 8154) for Japanese client EMS
 - Syrma will invest Rs150mn while Kaga will invest Rs100mn, to set-up an EMS manufacturing facility in India focused on Japanese clients
 - Kaga Electronics is a Japan-based electronics company operating through four segments: Electronic Components (semiconductors, general components, EMS), Information Equipment (PCs, home appliances, AV products), Software, and other businesses.
 - EMS for automotive on-board equipment, medical devices, and home appliances are among its core manufacturing focus areas.
 - Kaga Electronics reported trailing 12-month revenue of \$4.37bn as of 31-Mar-26, with 9,100 employees and market cap of ~\$1.2bn, making it a mid-large Japanese industrial group
 - Its EMS subsidiary Kaga EMS Towada specifically focuses on automotive equipment, medical devices, and household electrical appliances
 - The JV will focus on producing components for in-car devices, home appliances, and air-conditioning equipment—product lines where Kaga has built deep Japanese OEM relationships over five decades
 - The JV will serve as a platform to route Japanese OEM manufacturing to India, with Syrma bringing scaled Indian execution capability, while Kaga brings Japanese customer relationships, supply chain knowledge, and technical credibility.
- In our view, the execution risk from the aforementioned corporate actions remains well within control and does not overstretch management resources
 - Syrma SGS's JV tie-ups are with technically competent partners who also commit their balance sheet (incentives aligned) – the JV partner acquires a scalable India manufacturing footprint and Syrma acquires customer/technology/licensing access (positive sum game)
 - Syrma SGS has a history of successful acquisitions: Perfect ID, SGS Teknics, and Johari Digital Healthcare. Syrma usually retains the management/leadership of the acquired company and co-opts their vision/strengths, reducing integration risks (eg SGS Teknics, Johar Digital Healthcare)
 - In the case of Johari Digital Healthcare, when the business faced growth challenges owing to financial stress at one of its key customers, Syrma SGS adopted the approach of setting up a dedicated design facility for MedTech to increase value addition and diversify products and customers – we view this positively, interpreting it as conviction in the core idea and ability to take a long-term view

C) Syrma SGS's origins offer insights into its strengths

- Syrma SGS is backed by 50 years of business experience across two generations in the electronics manufacturing space across components and EMS
- Syrma SGS was formed via the merger—of Syrma Technology Private and SGS Teknics Manufacturing Private—which was completed in Sep-21
- Syrma Technology Private was incorporated on 23-Aug-04 by the Tandon Group, headed by Chairman Manohar Lal Tandon, and is the Group's third electronics company
 - Manohar Lal Tandon and his brother Sirjung Lal Tandon started their first manufacturing unit in 1976 – Tandon Magnetics and Tandon Motors

*"The sale effectively removes Tandon from the data-storage business, in which it had become **one of the personal computer industry's best-known suppliers** in the early 1980s."*

- Los Angeles Times (Dec 8, 1987) on the sale of Tandon Magnetics to Western Digital

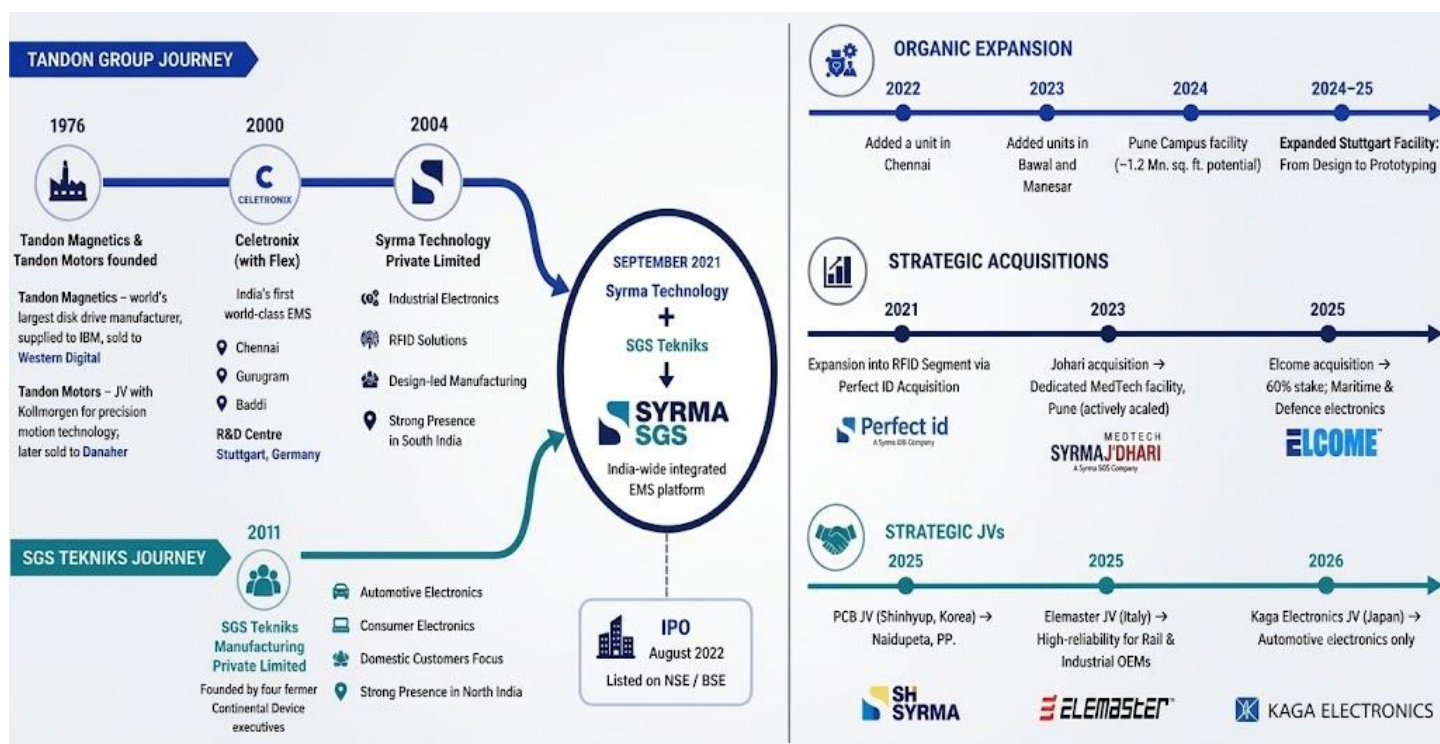
This report is intended for Team White Marque Solutions (team.emkay@whitemarquessolutions)

"US-based \$7.5 billion electronic manufacturing services (EMS) company Jabil Circuit has bought out the only major EMS company in India, Celetronix, for \$185 million from the Tandon family"

- Economic Times (Jan 26, 2006) on Jabil's acquisition of Celetronix

- Tandon Magnetics became the world's largest manufacturer of disk drives, supplying to IBM, and was eventually sold to Western Digital
- Tandon Motors was a joint venture with Kollmorgen for precision motion technology, later sold to Danaher
- Celetronix was launched in 2000 by the Tandon Group in partnership with Flex, described as India's first world-class EMS, with operations commencing in Chennai, Gurgaon, and Baddi, and an R&D center in Stuttgart, Germany
- Sandeep Tandon, Manohar Lal Tandon's son, returned to India and managed the Indian operations of Celetronix – after having studied at USC and working in the US
- Jabil Circuit acquired Celetronix in 2006 for \$185mn (\$155m cash + \$30mn debt); Jabil had loaned \$25mn to Celetronix in exchange for an option to buy it out

Exhibit 51: Syrma SGS is not new to EMS; it is an amalgamation of two distinct EMS players, both with deep experience in the industry



Source: Company, Emkay Research

"This is a merger of equals, where the size of the business was almost the same, and none of the two businesses was carrying any debt. **Both the businesses are very complementary** as well, with factories at separate locations and different clients being served."

- Financial Express (Nov 11, 2020) quoting Syrma MD Sandeep Tandon on Syrma and SGS Tekniks merger

- SGS Tekniks Manufacturing Private was incorporated in 2011 by four partners—Sanjiv Narayan, Jasbir Singh Gujral, Ranjit Singh, Krishna Kumar Pant—all of whom had worked with Continental Device India
- SGS Tekniks stood in contrast to Syrma: 1) founders mostly from salaried middle-class backgrounds, 2) focused on domestic markets, 3) major manufacturing presence in North India, and 4) focus sectors Automotive and Consumer electronics
- Syrma had been in business longer than SGS Tekniks, was more export focused, with greater manufacturing presence in South India, and focus more on the Industrials and related sectors
- Currently, Sandeep Tandon is the Executive Chairman of the combined entity, Jasbir Gujral is Managing Director, Ranjit Singh heads International Business, and Sanjiv Narayan is Director and Head of Government Affairs and Special Projects at SGS Tekniks
- Our details on Syrma SGS's origins underscores that: 1) the company leadership is fairly diverse and well-integrated, 2) the company has smoothly managed the amalgamation of two disparate entities, and 3) the senior leadership of both has successfully transitioned from "entrepreneurship" to their own "established business"
- Company now has a rich track record of successful inorganic integration

PCB-M opportunity underestimated by street

Our view: PCB-M is a large opportunity with attractive economics. We assess Syrma SGS's PCB-M roadmap and JV partner Shinhyup's credentials to evaluate Syrma SGS's execution readiness. We detail our model for Syrma SGS's PCB-M to show that the business is likely to deliver Rs23bn revenue by FY33E (~7% of consolidated) at 18% EBITDAM (with ~5% PLI)/13% OPM, to clock 16%+ post-tax ROCE by FY33E.

Exhibit 52: Syrma SGS's PCB-M foray targets Automotive, Consumer appliances, display panels, and Lighting as end-markets



Source: Company, Emkay Research

Exhibit 53: Aerial view of the 24-acre PCB-M campus at Nadiupeta, Andhra Pradesh; foundation and structure works underway

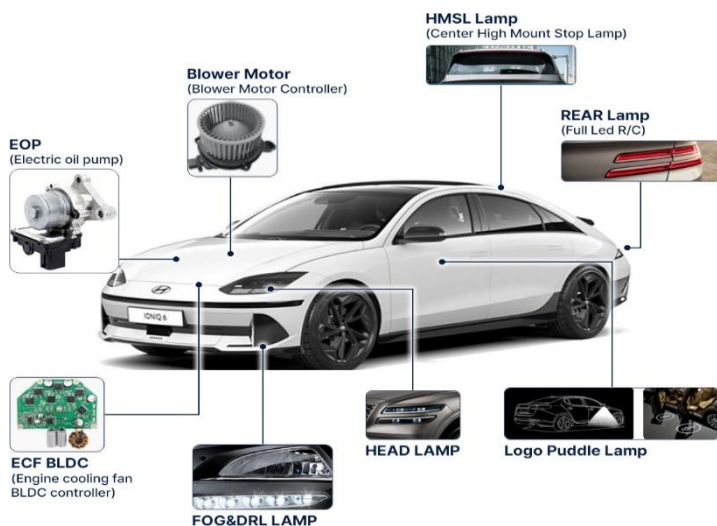


Source: Company, Emkay Research

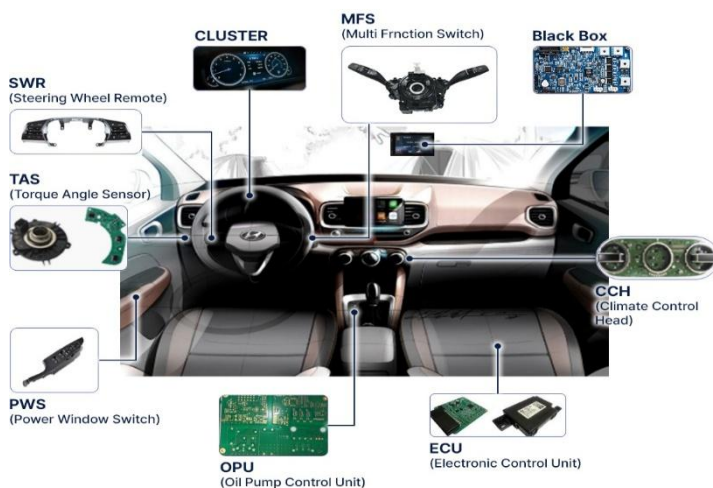
A) Execution derisked via graded increases in tech complexity/investments and support from JV partner

- Syrma SGS's PCB-M execution plan does not attempt to do too much at once and, instead, begins with simpler technology with wider current market demand
 - The entire ~Rs15.3bn capex will be invested over two phases: Phases 1a and 1b will see investments of Rs8.5bn for 1.2mn sqmtr multilayer lines with ~Rs4.2bn operationalized in FY28, and another ~Rs4.3bn operationalized in FY29
 - Phase 2 will see incremental investments of ~Rs6.8bn; we expect it to be operationalized by FY31 – HDI/Flex PCB and CCL facility will be installed in Phase 2
 - Phases 1a and 1b will focus on PCB with ≤ 8 layers – this represents almost 75% of the current domestic consumption, enabling access to a wide existing market
 - <8-layer PCBs are simpler to manufacture, allowing for wider manufacturing tolerances, thereby enabling faster scale-up of yields
 - Advanced PCBs (Flex, HDI) and backward integration into CCL are likely to be operational 3 years after the first PCB revenue-log (ie in FY28), allowing sufficient time to increase capabilities
 - We favor this: For EMS players, PCB-M is diversifying into a new process-intensive business; capex and capability should move incrementally
- Shinhyup Electronics – a JV partner with relevant technological expertise, looking to scale up through India exposure
 - Shinhyup Electronics (unlisted) was incorporated in 1986, fabricating single- and double-sided boards; it became a supplier to Denso and Samsung in 1988
 - Shinhyup reported revenue of KRW59.2bn (~Rs3.5bn) in 2023 – placing it among small-to-mid-size Korean industrial players
 - Shinhyup's current annual production capacity is 420k sqmtr. S/S (single-side) and 600k sqmtr D/S (double-side)+ML (multi-layer); the capacity that Syrma and Shinhyup will setup together is also in that range – 480k sqmtr. S/S and 600k sqmtr D/S+ML

- Shinyup specializes in 'Silver Jump Printing', enabling increased performance per layer at lower cost – important for auto, consumer, industrial, lighting PCBs
- Shinyup has capabilities in Flex/HDI PCBs for automotive/industrial applications
- In our view, Shinyup's current scale, technical capabilities, and Korean heritage align it well as a JV partner for Syrma SGS's PCB-M ambitions

Exhibit 54: Automotive exteriors' applications of Shinyup's PCBs

Source: Shinyup website, Emkay Research

Exhibit 55: Automotive interiors' applications of Shinyup's PCBs

Source: Shinyup website, Emkay Research

B) Our estimates for PCB-M are above street estimates

Exhibit 56: Benchmarking Indian and Global PCB manufacturers to understand underlying economics – we model ~35% Gross Margins, 15-18% EBITDAM and steady state RoCE of ~16% for a stabilized asset

Company name	Country	Currency (mn)	Operating revenue (Rs mn)	Gross Margin	EBITDA Margin	Op Profit Margin	Net Fixed Asset turns (x)	Net WC Turns (x)	Core pre-tax ROIC	ROCE, post-tax	DIO	DSO	DPO	NWC days
Shogini Technoarts	India	Rs	3,907	38.6%	15.3%	13.3%	6.1	4.1	32.2%	29.4%	100.2	98.5	114.2	84.6
AT&S India	India	Rs	3,915	44.1%	-8.3%	-21.0%	1.8	8.2	-31.2%	-25.6%	93.1	67.9	75.3	85.7
Ascent Circuits	India	Rs	3,252	41.5%	19.0%	16.8%	3.0	3.1	25.6%	16.6%	124.7	97.2	89.4	132.5
Epitome Components	India	Rs	2,557	56.8%	13.2%	9.6%	3.2	2.3	12.8%	6.1%	200.9	86.6	29.6	257.8
Zhen Ding Technology	Taiwan	TWD	1,82,522	29.7%	17.6%	7.6%	1.3	6.6	8.5%	4.8%	55.8	62.8	66.9	51.8
Tripod Technology Corp.	Taiwan	TWD	73,399	31.7%	23.4%	17.6%	3.8	2.8	28.1%	15.3%	87.5	119.1	67.9	138.7
Compeq Manufacturing	Taiwan	TWD	75,996	26.1%	18.2%	10.7%	2.0	5.0	15.2%	11.1%	74.9	89.1	96.7	67.3
AT&S	Austria	€	1,590	33.1%	13.8%	-8.1%	0.5	7.7	-3.6%	-2.1%	50.0	84.2	104.6	29.6

Source: Company, Emkay Research

- We analyzed several Indian and global PCB fabricators and identified key variables on unit economics - these are summarized below:
 - Gross margin (GM) is typically 35-45% – we build in 65% COGS initially (implied GM: 35%), gradually decreasing it from 65% in FY30E to ~60% in FY33E to reflect CCL backward integration; we do not incorporate additional GM for HDI/Flex PCBs
 - EBITDAM is typically 15-18% – we build in 20% opex (implied EBITDAM: 15%) with levers for fixed and variable, to reflect the operating leverage typical in this business
 - Gross fixed asset turns are generally in the 1.2-2.0x range – we assume 1.5x (ceiling) for the entirety of our forecast period
 - We forecast PLI revenue of 6%/6%/5%/5% for FY28E/FY29E/FY30E/FY31E, per the scheme rate, but increase the FY32E/FY33E rate to 5%/5% vs 4%/4% scheme rate, to reflect backward integration of CCL (from FY31E; however, we do not include this in the first-year numbers)
- Notably, our estimates are above the street's and represent an upside risk to consensus' earnings

Exhibit 57: Syrma SGS's PCB-M forecasted P&L – Scale and yields are key in PCB-M, and we expect positive EBITDA FY29E onward; please note the Other Income is revenue recognition of government grant, modelled as deferred income liability

P&L (Rs mn)s	FY28E	FY29E	FY30E	FY31E	FY32E	FY33E
Revenue	1,705	8,641	11,706	13,223	18,100	21,724
Scrap Income from Yield Loss	111	149	60	222	186	159
PLI Income	102	518	585	661	905	1,086
Total Op revenue	1,918	9,309	12,351	14,106	19,191	22,970
COGS	1,847	6,608	8,009	9,859	12,419	14,121
Gross Profit	71	2,700	4,342	4,247	6,773	8,849
<i>Gross margin</i>	3.7%	29.0%	35.2%	30.1%	35.3%	38.5%
Employee benefit expenses	366	1,167	1,272	2,059	2,229	2,360
Other expenses	308	1,102	1,287	1,869	2,165	2,388
EBITDA	-603	432	1,782	319	2,378	4,101
<i>EBITDA margin</i>	-31.5%	4.6%	14.4%	2.3%	12.4%	17.9%
D&A expenses	100	417	567	793	1,036	1,070
Financial expenses	263	386	453	428	319	204
Other Income	638	1,025	1,365	1,505	1,293	893
Profit Before Tax	-329	654	2,128	603	2,316	3,719

Source: Emkay Research

This report is intended for Team White Marque Solutions (team.emkay@whitemarquesolutions)

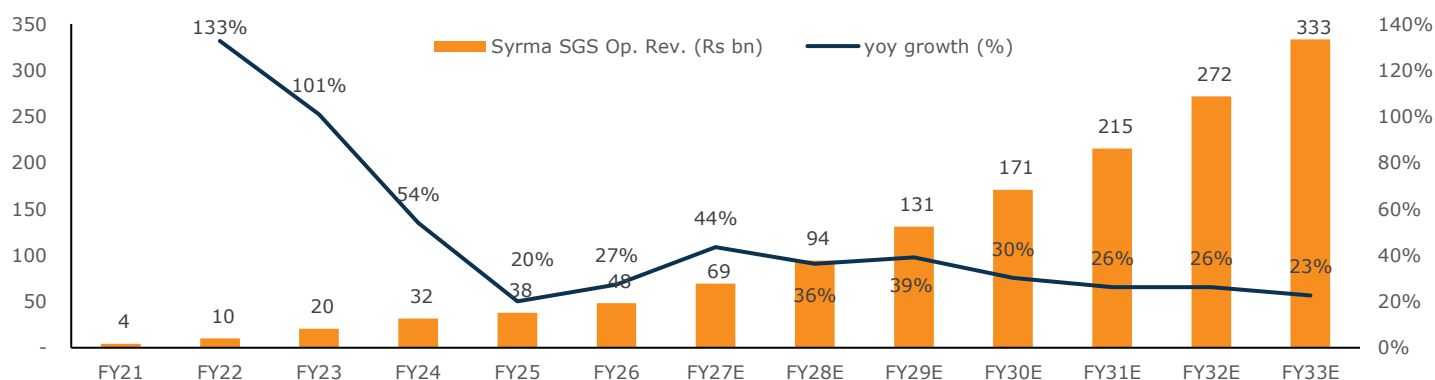
Financials: growth, margin expansion, FCFF

Our view: Syрма SGS presents a compelling case for sustained revenue growth led by high-margin segments improving profitability. We believe the company will generate free cash flow FY29E onward and our DCF-based Jun-27E TP stands at Rs1,900.

A) Details of Financials

- We build in ~32% revenue CAGR over FY26-33E, led by the Automotive, Industrial, IT+Railways, and MedTech segments
- Industrials: we assume slower growth for smart meters, given Syрма SGS's commentary, the slower execution on ground, and elections/state government execution outlook
- Auto: we believe growth will continue, driven by SGS Teknics positioning and additional contribution from Kaga Electronics JV
- MedTech: at inflection point with customer-related issues for Syрма Johari behind and growth to come from R&D in new products
- IT+ Railways: IT to do well, driven by partnerships with MSI/Giga Computing/others, while Railway segment growth would be driven by IR capex cycle and Elemaster JV
- We expect selective growth in Consumer segment, prioritizing higher margin verticals

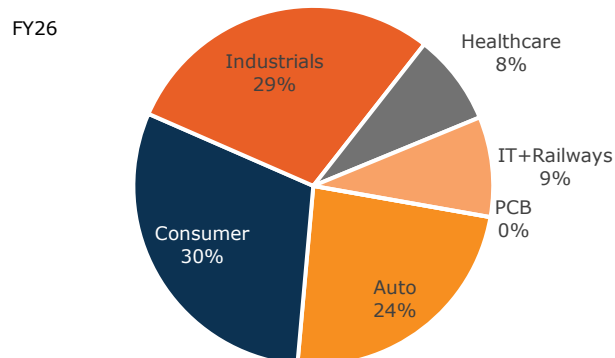
Exhibit 58: We forecast revenue growing ~7x over FY26-33E (~32% CAGR)



Source: Emkay Research

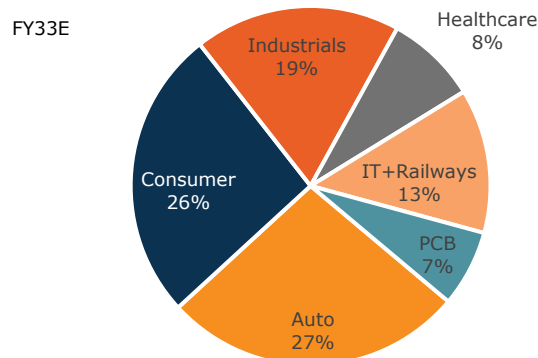
- FY33E EMS revenue of ~Rs310bn translates into ~\$2.8bn (assuming the exchange rate depreciates by 2% pa, starting at 96 today) – this is much lower than global HMLV EMS peers today – there is a significant growth runway even past the forecast period

Exhibit 59: Consumer segment contributes majority revenue share, with Industrials and Auto, the other top contributors



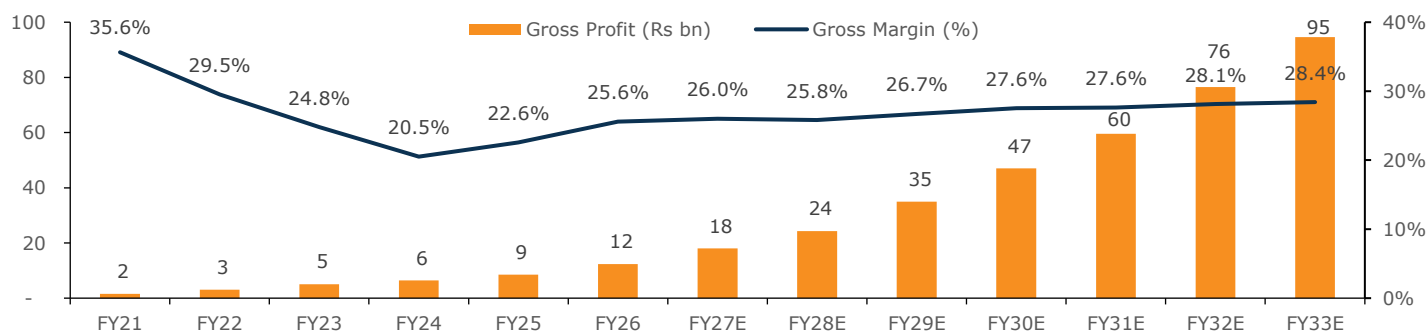
Source: Company data, Emkay Research

Exhibit 60: Consumer segment set to see a decline in importance, with Auto, IT+Railways, and PCB-M growing in the mix



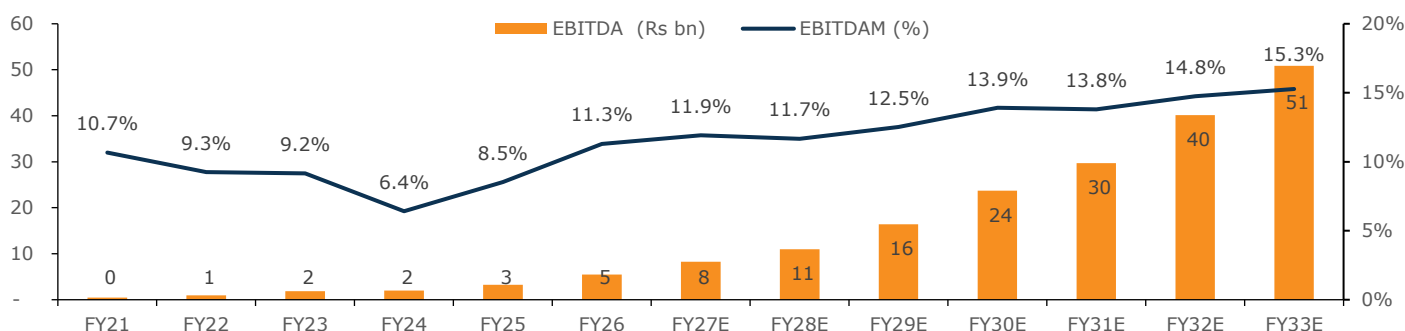
Source: Emkay Research

- We build in gross margin expansion of 25.8%/28.4% for FY28E/FY33E, based on our bottom-up modelling of a vertical-wise margin profile and positive shift in mix toward high-margin business

Exhibit 61: Gross margin expansion aided by revenue mix shift in favor of high margin verticals

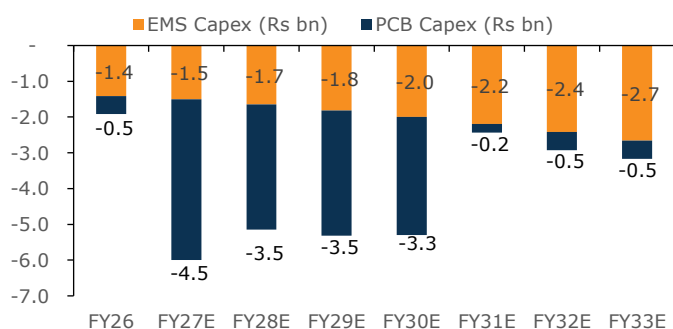
Source: Emkay Research

- We build in EBITDAM improvement to 15.3% in FY33E from 11.3% in FY26, on the back of operating leverage and gross margin expansion; we expect the EMS EBITDAM improvement in FY28E to be offset by PCB-M's early-stage yield losses

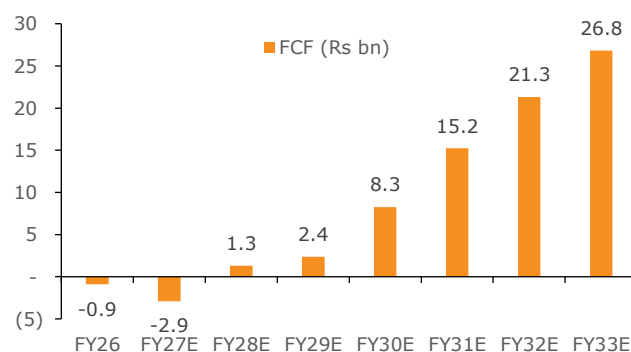
Exhibit 62: Gross margin uplift and operating leverage to aid EBITDAM expansion

Source: Emkay Research

- On the back of improvement in profitability, receipt of government capex subsidy, and steady working capital investment, we expect Syrma SGS to be FCFF-generative starting FY29E
- In our view, any future fundraising is likely to target new growth opportunities; we do not see current capital expenditure plans (including PCB-M) requiring any fundraise

Exhibit 63: FY26-30E capex largely for PCB-M; Syrma SGS has 50% government capex subsidy for PCB-M

Source: Company, Emkay Research

Exhibit 64: FCF generation starting FY29E; driven by profitability improvements and government capital subsidies

Source: Company, Emkay Research

Exhibit 65: Syrma SGS return ratios stabilize at 20.6%/22.7% post PCB-M ramp-up

	FY26	FY27E	FY28E	FY29E	FY30E	FY31E	FY32E	FY33E
DuPont Analysis: RoE	10.4%	12.0%	13.5%	16.7%	19.3%	19.4%	20.5%	20.6%
DuPont Analysis: RoCE (Post Tax)	11.1%	12.9%	14.5%	18.0%	20.8%	21.3%	22.5%	22.7%

Source: Company, Emkay Research

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions)

B) Summary of 1QFY27 results

- Syрма SGS delivered a strong 1QFY27 performance:
 - Operating revenue came in at Rs15.9bn, up 14.1% over consensus; up 68% yoy
 - EBITDA stood at Rs1.6bn, up 18.6% vs consensus; up 86.5% yoy
 - PAT stood at Rs1bn, up 27% vs consensus; up 101.2% yoy
 - Gross margin stood at 24.5% vs 24.7% oya (one year ago), EBITDAM came in at 10.2% (vs 9.2% oya), and PAT margin stood at 6.3% (vs 5.3% oya)
- Performance was broad-based, with all verticals delivering strong growth:
 - Auto revenue grew ~78% yoy to Rs3.9bn, representing 25% revenue share
 - Consumer revenue grew ~68% yoy to Rs5.3bn, representing 34% revenue share
 - Industrial revenue grew ~31% yoy to Rs3.8bn, representing 24% revenue share
 - Healthcare revenue grew ~100% yoy to Rs1.3bn, representing 8% revenue share
 - IT+Railways revenue grew ~200% yoy to Rs1.5bn, representing 9% revenue share
 - The end-1QFY27 order book stood at Rs68bn, with automotive at 29%, consumer at 30%, Industrial at 24%, Healthcare at 8%, and IT & Railways at 9%
- **Key takeaways from the conference call**
 - Based on the 1Q performance, the management expects to exceed its 35% revenue growth guidance for FY27
 - It onboarded 18 new clients in 1Q; potential pipeline from new customers is >Rs10bn on full ramp-up
 - The Medtech Jodhpur facility is expected to see addition of medical-grade plastics injection molding
 - The Bangalore facility is being dedicated partly to the data center ecosystem (power management, cooling)
 - The company is in negotiations with potential partners to enter solar inverter manufacturing after the KSolare deal did not materialize
 - The management also indicated that it is actively interested in and scouting for potential partners, to enter the Semiconductors space through ISM 2.0; the company will not commit capital until a suitable partner is identified
 - Total capex of Rs900mn in 1QFY27, with Rs500mn toward the PCB project and Rs400mn for the EMS business; full-year ex-PCB capex guidance is Rs1,500mn
 - The PCB project phase 1 total cost is ~Rs4mn, of which Rs1-1.3bn is already funded; balance to be funded during FY27 with debt mix of ~50-60% and government capex subsidy of 50%, available under ECMS
 - PCB phase 1 commercial production target is Apr-27; the current building is 65-70% complete and equipment arrivals will begin in Oct-26
 - Phases 2 and 3 equipment buildup expected at end-FY27 or early-FY28; Phase 2 funding of Rs4bn will be largely via government incentives

C) Key risks

- Our thesis has two key risks: 1) PCB-M is a new business and its economics could be weaker than our expectations (although our modelling is fairly conservative, in our view) and 2) organic growth momentum may not sustain or may be impacted by prolonged geopolitical pressures

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Exhibit 66: Syrma SGS's 1QFY27 results – Strong broad-based revenue growth complemented with margin expansion

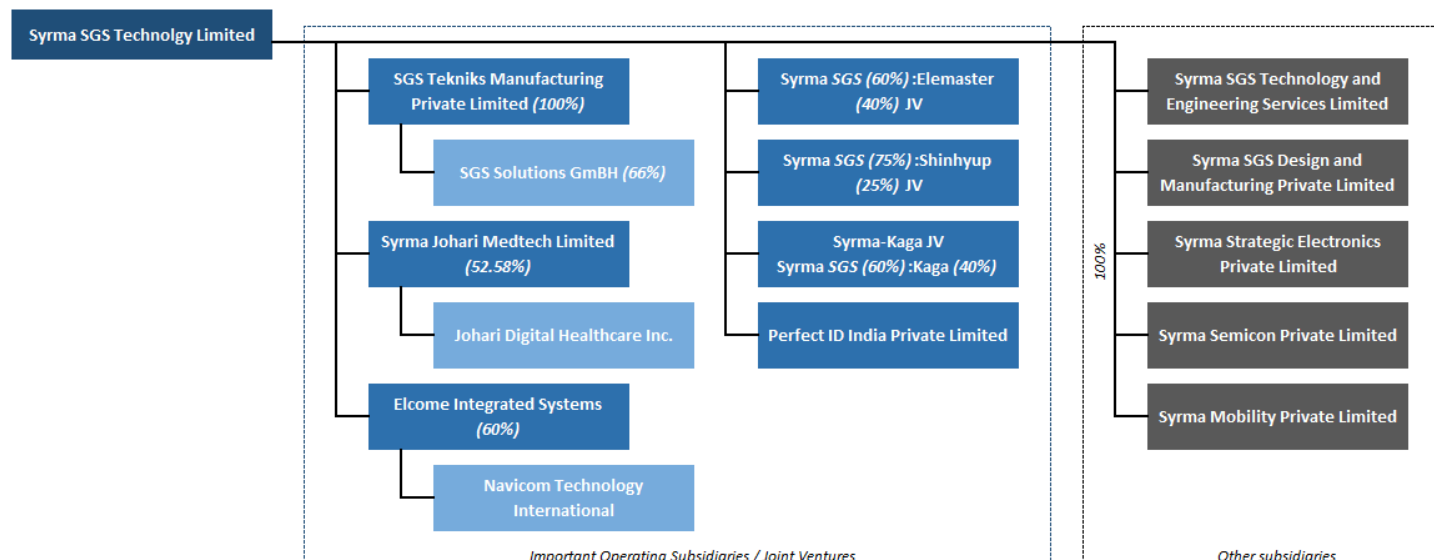
Particulars (Rs mn)	2QFY25	3QFY25	4QFY25	1QFY26	2QFY26	3QFY26	4QFY26	1QFY27
Oper revenue	8,327	8,697	9,244	9,440	11,459	12,642	14,650	15,886
- yoy change	17.0%	23.1%	-18.5%	-18.6%	37.6%	45.4%	58.5%	68.3%
COGS	6,312	6,430	6,731	7,107	8,730	9,174	10,855	11,992
- % of oper revenue	75.8%	73.9%	72.8%	75.3%	76.2%	72.6%	74.1%	75.5%
Gross Profit	2,015	2,267	2,512	2,333	2,728	3,468	3,795	3,894
- Gross Margin	24.2%	26.1%	27.2%	24.7%	23.8%	27.4%	25.9%	24.5%
Employee Cost	461	465	522	504	515	556	605	753
- yoy change	48.3%	22.1%	29.3%	10.5%	11.7%	19.7%	16.0%	49.4%
- % of oper revenue	5.5%	5.3%	5.6%	5.3%	4.5%	4.4%	4.1%	4.7%
Other Exp.	845	1,006	916	963	1,061	1,318	1,448	1,525
- yoy change	7.1%	22.8%	13.4%	18.1%	25.6%	31.0%	58.1%	58.3%
- % of oper revenue	10.1%	11.6%	9.9%	10.2%	9.3%	10.4%	9.9%	9.6%
EBITDA	710	796	1,075	866	1,152	1,594	1,741	1,616
- yoy change	41.8%	101.7%	45.9%	90.7%	62.4%	100.3%	62.0%	86.5%
- % of oper revenue	8.5%	9.1%	11.6%	9.2%	10.1%	12.6%	11.9%	10.2%
D&A Expense	167	202	208	206	218	203	214	225
- % of oper revenue	2.0%	2.3%	2.2%	2.2%	1.9%	1.6%	1.5%	1.4%
Finance Costs	136	154	156	149	126	77	130	133
- % of oper revenue	1.6%	1.8%	1.7%	1.6%	1.1%	0.6%	0.9%	0.8%
Other Income	100	218	223	160	87	103	118	151
- % of oper revenue	1.2%	2.5%	2.4%	1.7%	0.8%	0.8%	0.8%	0.9%
PBT	507	657	934	671	895	1,417	1,516	1,408
- yoy change	32%	144%	53%	128%	77%	116%	62%	110%
- PBT margin	6.1%	7.6%	10.1%	7.1%	7.8%	11.2%	10.3%	8.9%
Tax	110	105	219	172	232	280	312	351
- Tax rate	21.8%	16.0%	23.5%	25.7%	25.9%	19.8%	20.6%	24.9%
Exceptional	-	-21	-	-	-	-34	-12	-
Minority	34	42	60	2	23	75	180	56
Adj PAT	362	509	654	497	641	1,062	1,024	1,001
- yoy change	22.0%	228.2%	87.3%	157.8%	76.8%	108.5%	56.5%	101.2%
- PAT margin	4.4%	5.9%	7.1%	5.3%	5.6%	8.4%	7.0%	6.3%
Reported PAT	362	531	654	497	641	1,096	1,012	1,001
Reported EPS (Rs)	2.03	2.74	3.67	2.79	3.44	5.33	5.28	5.19
Adj EPS (Rs)	2.03	2.63	3.67	2.79	3.44	5.17	5.34	5.19

Source: Company, Emkay Research

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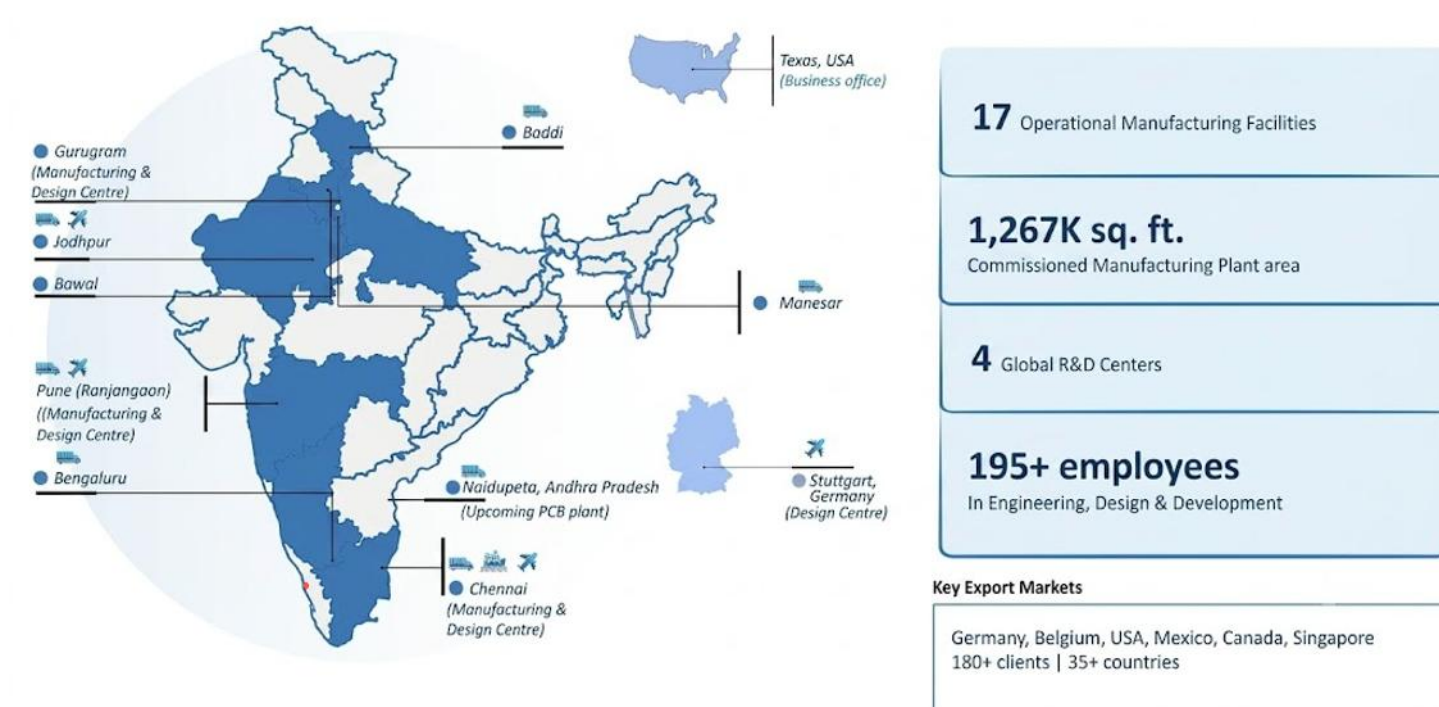
About the company

Exhibit 67: Syrma SGS's corporate structure – Operates through multiple acquisitions and joint ventures



Source: Company, Emkay Research

Exhibit 68: Manufacturing footprint of Syrma SGS – Well diversified domestically, with global business operations as well



Source: Company, Emkay Research

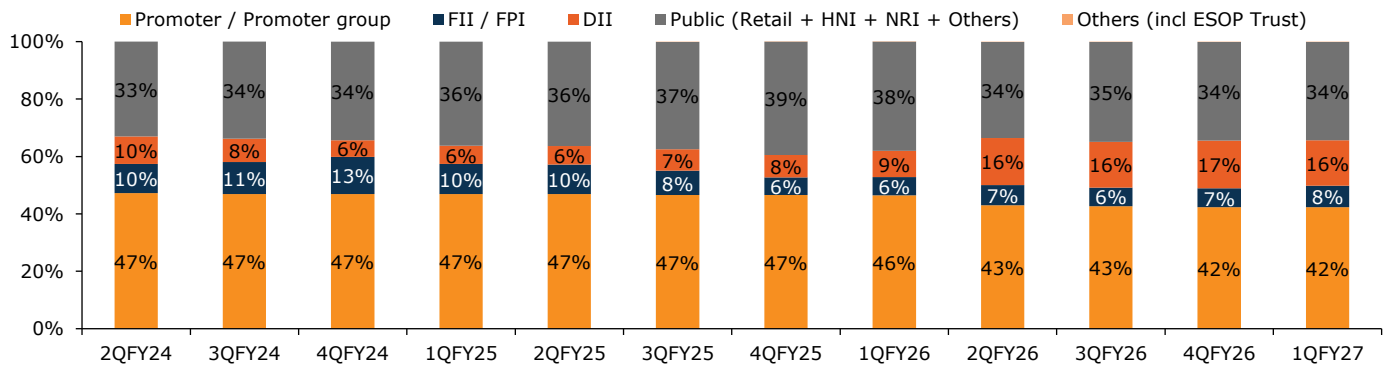
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Exhibit 69: Brief profiles of the company's leadership team – Jaidit Singh Brar takes over as CEO from Satendra Singh and the difference in professional experience suggests that Syrma SGS now views operations to have matured and aims to pursue more strategic initiatives

Name	Role and Appointment	Profile
Sandeep Tandon	Executive Chairman Syrma SGS Technology Co-founder	BSc, Electrical Engineering, Andrew and Erna Viterbi School of Engineering, University of Southern California. YPO Presidents' Program, Harvard Business School. Over 18 years in electronics manufacturing. Previously at Celetronix Inc, USA.
Jasbir S Gujral	Managing Director Syrma SGS Technology Founding Member	Fellow Member, Institute of Chartered Accountants of India (FCA). Over 39 years in the electronics manufacturing sector. Founding promoter of SGS Teknics Manufacturing Pvt, a wholly owned subsidiary of Syrma SGS Technology.
Jaidit Singh Brar	Chief Executive Officer (Current) Syrma SGS Technology Appointed: effective 29-Jun-26 Also: Independent Director at Exide Industries and Tenneco Clean Air India	Post Graduate Diploma in Management (MBA), IIM Calcutta. Over 25 years of experience across strategy, performance transformation, and growth. Senior Partner, McKinsey & Company (24 years).
Satendra Singh	Senior Operating Director (Current) Syrma SGS Technology Effective: 26-Jun-26 (Previously CEO: 24-Aug23 – 25-Jun-26)	MS, Manufacturing Management, BITS Pilani. Advanced Management Program, IIM Bangalore. Transformational Leadership Executive Program, Harvard Business School. Over 30 years of experience in operations, strategic planning, global supply chain, and manufacturing, across Nokia and Flextronics. Appointed CEO of Syrma SGS in Aug-23; transitioned to Senior Operating Director in Jun-26.
Ashwani Kumar	President — Operations Syrma SGS Technology	Over 27 years of experience in electronics manufacturing. Previously at Denso and Magneti Marelli (automotive electronics companies).
Bijay Agarwal	Chief Financial Officer Syrma SGS Technology	More than 16 years of experience in finance and business strategy. Previously at Motorola India Pvt and Dalmia Bharat.
N G Sreedharan	Chief Technology Officer Syrma SGS Technology	Over 30 years of experience in the electronics industry and research. Previously at Tata Institute of Fundamental Research (TIFR) and Celetronix.

Source: Company, Emkay Research

Exhibit 70: Company shareholding structure – Dilution in Promoter shareholding in 2QFY26 due to QIP



Source: Company, Emkay Research

Syrma SGS Technology: Consolidated Financials and Valuations

Profit & Loss

Y/E Mar (Rsmn)	FY25	FY26	FY27E	FY28E	FY29E
Revenue	37,867	48,191	69,156	94,245	131,024
Revenue growth (%)	20.1	27.3	43.5	36.3	39.0
EBITDA	3,233	5,445	8,234	10,991	16,413
EBITDA growth (%)	59.9	68.4	51.2	33.5	49.3
Depreciation & Amortization	751	841	978	1,459	1,824
EBIT	2,482	4,604	7,257	9,532	14,588
EBIT growth (%)	64.7	85.5	57.6	31.4	53.0
Other operating income	-	-	-	-	-
Other income	310	167	342	738	940
Financial expense	400	272	523	699	740
PBT	2,392	4,499	7,076	9,571	14,788
Extraordinary items	(21)	(46)	0	0	0
Taxes	526	996	1,769	2,393	3,697
Minority interest	(146)	(280)	(918)	(1,230)	(1,802)
Income from JV/Associates	0	0	0	0	0
Reported PAT	1,699	3,178	4,389	5,948	9,289
PAT growth (%)	58.3	87.1	38.1	35.5	56.2
Adjusted PAT	1,720	3,224	4,389	5,948	9,289
Diluted EPS (Rs)	9.2	16.8	22.8	30.9	48.3
Diluted EPS growth (%)	50.4	82.9	36.2	35.5	56.1
DPS (Rs)	1.4	1.4	1.5	1.5	1.5
Dividend payout (%)	14.9	8.4	6.6	4.9	3.1
EBITDA margin (%)	8.5	11.3	11.9	11.7	12.5
EBIT margin (%)	6.6	9.6	10.5	10.1	11.1
Effective tax rate (%)	22.0	22.1	25.0	25.0	25.0
NOPLAT (pre-IndAS)	1,936	3,585	5,442	7,149	10,941
Shares outstanding (mn)	188	192	192	192	192

Source: Company, Emkay Research

Cash flows

Y/E Mar (Rsmn)	FY25	FY26	FY27E	FY28E	FY29E
PBT (ex-other income)	2,371	4,454	7,076	9,571	14,788
Others (non-cash items)	935	1,222	1,407	1,634	1,843
Taxes paid	(607)	(892)	(1,769)	(2,393)	(3,697)
Change in NWC	(934)	(1,889)	(3,905)	(4,591)	(7,003)
Operating cash flow	1,765	2,896	2,809	4,220	5,931
Capital expenditure	(2,455)	(1,918)	(5,703)	(2,900)	(3,565)
Acquisition of business	0	(2,350)	0	0	0
Interest & dividend income	-	-	-	-	-
Investing cash flow	(952)	(7,411)	(6,777)	(4,275)	(3,281)
Equity raised/(repaid)	10	9,790	33	88	194
Debt raised/(repaid)	330	(3,266)	4,030	2,243	(97)
Payment of lease liabilities	(133)	(113)	(106)	(91)	(79)
Interest paid	(513)	(406)	(492)	(764)	(857)
Dividend paid (incl tax)	(266)	(267)	(289)	(289)	(288)
Others	(135)	(160)	741	353	424
Financing cash flow	(707)	5,579	3,917	1,540	(704)
Net chg in Cash	125	1,123	(50)	1,486	1,946
OCF	1,765	2,896	2,809	4,220	5,931
Adj. OCF (w/o NWC chg.)	2,699	4,784	6,714	8,812	12,934
FCFF	(690)	978	(2,893)	1,320	2,366
FCFE	(1,227)	542	(3,500)	432	1,374
OCF/EBITDA (%)	54.6	53.2	34.1	38.4	36.1
FCFE/PAT (%)	(72.3)	17.0	(79.7)	7.3	14.8
FCFF/NOPLAT (%)	(35.6)	27.3	(53.2)	18.5	21.6

Source: Company, Emkay Research

Balance Sheet

Y/E Mar (Rsmn)	FY25	FY26	FY27E	FY28E	FY29E
Share capital	1,780	1,926	1,924	1,923	1,923
Reserves & Surplus	15,719	26,696	30,587	35,955	44,826
Net worth	17,500	28,622	32,511	37,878	46,749
Minority interests	749	2,033	4,076	6,181	8,858
Non-current liab. & prov.	61	264	264	264	264
Total debt	6,112	3,531	7,561	9,804	9,707
Total liabilities & equity	25,413	36,576	48,637	59,595	72,173
Net tangible fixed assets	6,672	8,601	13,603	17,051	20,665
Net intangible assets	3,413	4,712	4,922	4,901	4,858
Net ROU assets	1,358	1,269	1,181	1,092	1,003
Capital WIP	656	718	567	819	678
Goodwill	3,221	4,547	4,547	4,547	4,547
Investments [JV/Associates]	291	608	658	721	812
Cash & equivalents	1,322	7,015	6,964	8,451	10,397
Current assets (ex-cash)	28,087	34,482	48,564	61,978	77,011
Current Liab. & Prov.	16,474	21,035	27,929	35,478	43,314
NWC (ex-cash)	11,613	13,447	20,635	26,500	33,697
Total assets	25,413	36,576	48,637	59,595	72,173
Net debt	4,790	(3,484)	597	1,353	(690)
Capital employed	25,413	36,576	48,637	59,595	72,173
Invested capital	21,698	26,760	39,160	48,452	59,220
BVPS (Rs)	93.2	148.8	169.1	197.0	242.9
Net Debt/Equity (x)	0.3	(0.1)	-	-	-
Net Debt/EBITDA (x)	1.5	(0.6)	0.1	0.1	-
Interest coverage (x)	6.9	17.4	14.5	14.6	20.9
RoCE (%)	11.9	16.3	19.4	21.0	26.1

Source: Company, Emkay Research

Valuations and key Ratios

Y/E Mar	FY25	FY26	FY27E	FY28E	FY29E
P/E (x)	159.2	92.1	66.6	49.1	31.4
EV/CE(x)	11.3	8.5	6.6	5.4	4.5
P/B (x)	16.3	10.2	9.0	7.7	6.3
EV/Sales (x)	7.3	6.0	4.2	3.1	2.2
EV/EBITDA (x)	85.1	53.1	35.6	26.7	17.8
EV/EBIT(x)	110.9	62.8	40.4	30.8	20.0
EV/IC (x)	12.7	10.8	7.5	6.1	4.9
FCFF yield (%)	(0.3)	0.3	(1.0)	0.5	0.8
FCFE yield (%)	(0.4)	0.2	(1.2)	0.1	0.5
Dividend yield (%)	0.1	0.1	0.1	0.1	0.1
DuPont-RoE split					
Net profit margin (%)	4.5	6.7	6.3	6.3	7.1
Total asset turnover (x)	1.6	1.6	1.7	1.8	2.0
Assets/Equity (x)	1.4	1.3	1.4	1.5	1.5
RoE (%)	10.2	14.0	14.4	16.9	22.0
DuPont-RoIC					
NOPLAT margin (%)	5.1	7.4	7.9	7.6	8.4
IC turnover (x)	1.9	2.0	2.1	2.2	2.4
RoIC (%)	9.7	14.8	16.5	16.3	20.3
Operating metrics					
Core NWC days	111.9	101.9	108.9	102.6	93.9
Total NWC days	111.9	101.9	108.9	102.6	93.9
Fixed asset turnover	3.8	4.1	4.3	4.7	5.5
Opex-to-revenue (%)	14.0	14.3	14.1	14.1	14.2

Source: Company, Emkay Research

This report is intended for Team White Marque Solutions (team.emkay@whitemarquesolutions)

Mission-critical box-build specialist; initiate with BUY

Electronic Manufacturing Services ▶ Initiating Coverage ▶ August 11, 2026

CMP (Rs): 1,930 | TP (Rs): 2,400

We initiate coverage on Avalon Technologies with BUY and DCF-based Jun-27E TP of Rs2,400 (24% upside), implying FY28E target PER of 58x. Avalon is a specialist in mission-critical HMLV box-builds (60% revenue in 1QFY27). The company is vertically integrated and has a dual-shore manufacturing presence in India (~75% by value) and the US (remaining ~25%). The company has 1) defensible high gross margins (33-35% historical + guidance), 2) a pathway to grow EBITDA margin (~11% in FY26 to >17% by FY33E), and 3) exposure to multiple >30% growth opportunities. Avalon posted revenue/PAT CAGR of 18%/39% over FY21-26, and we expect it to log a robust 44%/58% revenue/PAT CAGR over FY26-29E. Our valuation is underpinned by 1) Avalon's ability to transition to a less WC-intensive model (144 core WC days in FY26) and, 2) it continuing to extract superior turns on operating assets (7.3x in FY26). In our view, Avalon's business strategy has low idiosyncratic execution risk, and the company is well positioned for long-term value creation.

Capabilities centered around mission-critical box builds for HMLV EMS markets

Avalon has been focused on growing as a specialist in mission-critical box builds for clients in Industrial Goods, Aerospace, Railways, and Medtech, among others. This is reflected in its box-builds revenue rising from ~44% in FY22 to ~60% in 1QFY27 – the highest among peers. Avalon has backward integration in relevant adjacencies, commensurate to its scale and target segments, including sheet metal fabrication and machining, wiring harnesses, and magnetics, to name a few. Further, Avalon has dual-shore manufacturing in the US and India, with the US output at >25% value-workshare. This suite of operational capabilities positions Avalon as a 'one-stop shop', offering clients the flexibility to migrate from vanilla PCB-A work to more complex high-margin box-builds. In return, Avalon's customers gain India's cost advantage, simplified quality audit and vendor onboarding (due to multiple capabilities under one roof), and trust in the company's execution prowess.

Multiple >30% growth vectors with long-term visibility keep execution risk low

Avalon takes a 'build your resume' approach to new business which has enabled the company to foray into increasingly complex and niche products. Avalon has gained exposure to multiple >35% revenue CAGR opportunities which are currently neither in P&L nor in order book, including semiconductor manufacturing equipment sub-assemblies, power transmission systems, railway signaling, and energy storage among others. Mission critical products have longer development/validation (1-3 years) and production cycles (10-15 years) and EMS vendor onboarding is resource-intensive, resulting in high switching costs for clients creating good long-term visibility on revenue/earnings, once onboarded.

Low capex + high NFA-turns model; but high WC needed for growth initiatives

Historically, Avalon's has had capex (<3% of operating revenue in FY26) with high net fixed asset turnover (>5x historically, 7.3x in FY26). NWC reinvestments are high at ~144 core NWC days in FY26, mainly inventory. We see this as essential, given Avalon's current scale and business strategy. Avalon's net profit will grow far ahead of peers (55% CAGR over FY26-31E) with PAT margin at 10.8% by FY31E, supporting ROE/ROCE expansion to 30%/24% by FY31E from 16%/13% in FY26. Avalon will turn FCF positive FY29 onwards and has balance sheet headroom to support growth investments (book D/E of 0.3 at FY26 end).

Target Price – 12M	Jun-27
Change in TP (%)	NA
Current Reco.	BUY
Previous Reco.	NA
Upside/(Downside) (%)	24.4

Stock Data	AVALON IN
52-week High (Rs)	2,004
52-week Low (Rs)	777
Shares outstanding (mn)	66.8
Market-cap (Rs bn)	129
Market-cap (USD mn)	1,353
Net-debt, FY27E (Rs mn)	1,667.2
ADTV-3M (mn shares)	0.4
ADTV-3M (Rs mn)	957.8
ADTV-3M (USD mn)	10.1
Free float (%)	0.6
Nifty-50	24,583.8
INR/USD	95.3

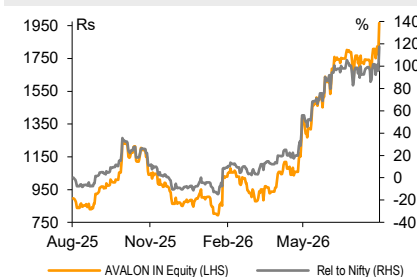
Shareholding, Jun-26

Promoters (%)	44.4
FPIs/MFs (%)	7.8/24.7

Price Performance

(%)	1M	3M	12M
Absolute	9.2	39.1	115.5
Rel. to Nifty	7.5	36.8	113.5

1-Year share price trend (Rs)



Avalon Technologies: Financial Snapshot (Consolidated)

Y/E Mar (Rs mn)	FY25	FY26	FY27E	FY28E	FY29E
Revenue	10,981	16,032	23,370	33,939	48,159
EBITDA	1,149	1,733	2,788	4,506	6,841
Adj. PAT	634	1,129	1,682	2,786	4,351
Adj. EPS (Rs)	9.5	16.9	25.1	41.5	64.7
EBITDA margin (%)	10.5	10.8	11.9	13.3	14.2
EBITDA growth (%)	83.7	50.9	60.8	61.6	51.8
Adj. EPS growth (%)	126.1	77.9	48.6	65.5	56.0
RoE (%)	10.9	16.9	20.8	26.8	30.9
RoIC (%)	11.0	15.4	21.3	24.4	26.2
P/E (x)	200.7	113.9	77.0	46.6	29.8
EV/EBITDA (x)	111.2	74.4	47.1	29.5	19.7
P/B (x)	21.1	17.9	14.5	11.0	8.0
FCFF yield (%)	(0.2)	-	(0.7)	(0.6)	-

Source: Company, Emkay Research

Mayank Pandey

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+91 22 66121340

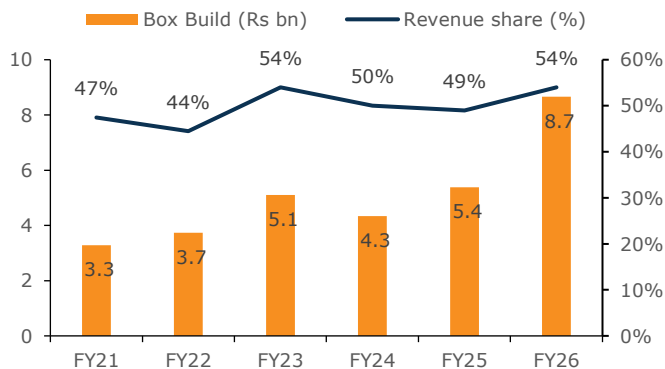
Capabilities center on mission-critical box-builds for HMLV EMS markets

Our view: We illustrate that Avalon's backward integration and dual shore manufacturing capabilities enable its right-to-win in its core competence: mission-critical box-builds

A) Strong franchise in mission-critical box-builds

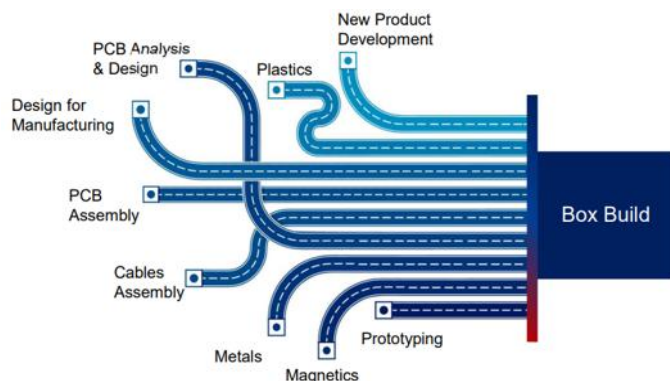
- Box-builds unlock higher value addition and stickier positioning with clients in EMS; PCB-A is still relevant as a foot-in-the-door with clients, enabling Avalon to win wallet-share
- Avalon has focused on increasing revenue share from box-builds, growing it from ~44% in FY22 to 60% in 1QFY27; Management is focusing on growing this further
- Many of Avalon's box-builds are mission-critical, high mix, and complex products that require engineering depth – value per box can be as high as \$100k-150k
- These box-builds usually are input sub-assemblies for high-value end-products like Semiconductor Manufacturing Equipment (~\$4mn/unit) or locomotive engines (\$1-3mn/unit)
- Ability to supply such niche box-builds is a competitive advantage for Avalon

Exhibit 71: Avalon's box-build revenue CAGR was 21% over FY21-26, with revenue share in 1QFY27 at 60% (54% in FY26)



Source: Company, Emkay Research

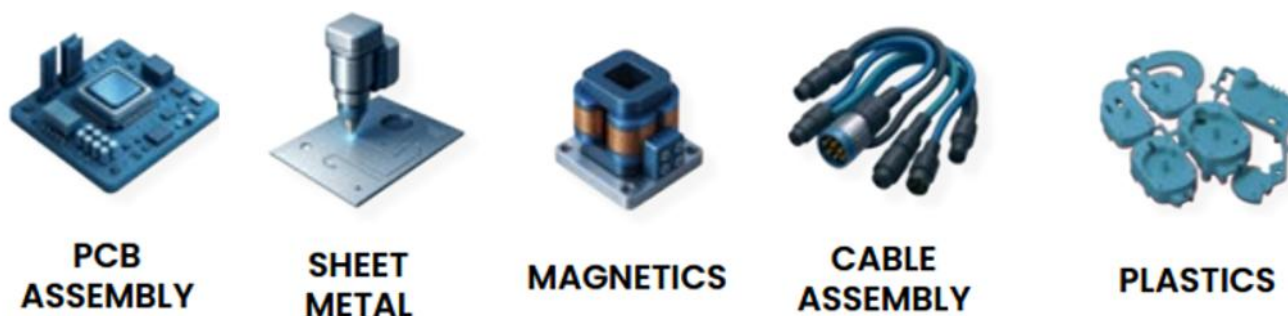
Exhibit 72: Avalon is backward integrated in relevant/adjacent capabilities that add value to its box-build offerings



Source: Company, Emkay Research

B) Backward integration in relevant capabilities

Exhibit 73: Avalon's backward integration capabilities are relevant for full box-build system integration



Source: Company, Emkay Research

- PCB-A (*in Chennai and USA*): Capabilities include surface-mount (SMT) PCB-A, through-hole (THT) PCB-A, backward and forward traceability, advanced testing, and others
- Sheet metal fabrication (*in Chennai*): Production of castings, enclosures, casings using capabilities in machining/fabrication, welding, and testing/calibration
- Avalon's capabilities in sheet metal enable it to supply certain high-value metal-only parts for Aerospace applications; we view this capability less from a financial sense and more as capability depth in products offered to engineering-intensive sectors

Exhibit 74: Sheet metal – Enable Avalon to manufacture high-quality enclosures, casings, and mounting brackets for its EMS box-builds as well as some non-electronics Aerospace parts/sub-assemblies such as aircraft engine parts and pilot seat frames



Source: Company, Emkay Research

- **Magnetics (in Chennai):** Production of transformers and motors using capabilities in linear winding, toroidal winding, vacuum varnishing, dip varnishing, and testing

Exhibit 75: Magnetics - Avalon manufactures a variety of transformers, inductors, chokes, and solenoids for industrial applications; the magnetics facility is equipped with fireproof temperature-controlled chemical storage and heavy-duty medium-rise storage racks



Source: Company, Emkay Research

- **Cables and Wire harness (in Chennai and USA):** Production of wiring harnesses using capabilities in routing, braiding, electromechanical assembly, ultrasonic welding, and testing
- Close to bagging cable commodity orders from an Aerospace major

Exhibit 76: Wiring harnesses - Avalon produces durable wiring harnesses, which perform reliably under tough conditions; products include wiring looms/assembly, fan tray assembly, flat ribbon and RF cable assembly, and competencies in crimp cross section and ultrasonic welding



Source: Company, Emkay Research

- **Injection molding (in Chennai):** Production of plastic parts from all types of plastics using over-molding/insert-molding, assembly, ultrasonic welding, and surface treatments

Exhibit 77: Plastics - Avalon produces precision plastic parts/products leveraging capabilities in injection molding, over-molding, insert molding, ultrasonic welding, and surface treatments from all types of plastics, including high-performance plastics, engineering plastics, and general plastics



Source: Company, Emkay Research

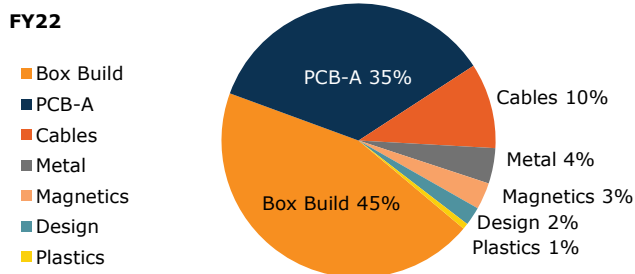
- **System integration (in Chennai and USA):** Final electromechanical integration and testing along with capabilities in reverse engineering, surge handling, component indigenization

Exhibit 78: Avalon's system integration capabilities enable the company to bring together its components expertise and manufacture the final box while meeting stringent customer requirements on quality and reliability



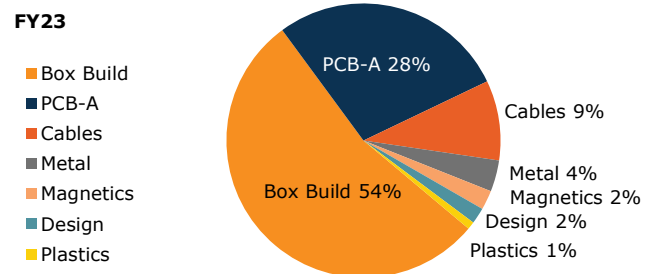
Source: Company, Emkay Research

Exhibit 79: Avalon's revenue share from backward integration capabilities in external revenue in FY22



Source: Company, Emkay Research

Exhibit 80: Avalon's revenue share from backward integration capabilities in external revenue in FY23



Source: Company, Emkay Research

- Backward integration benefits clients in 1) simplifying quality/vendor management oversight, 2) reducing development/modification timelines, and 3) increasing execution comfort/accountability with Avalon

C) Dual shore manufacturing presence

Exhibit 81: Dual shore manufacturing presence – India facilities largely used for labor-intensive operations with all the backward integration capabilities located in India; US facilities used for some PCB-A and system integration for customers requiring US presence and greater degree of oversight

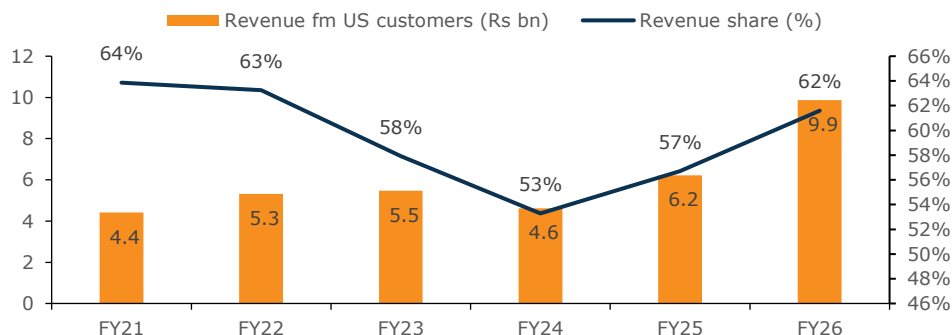


Source: Company, Emkay Research

"We've been in the US for the last 25 to 30 years. So, we understand the market well."

- Kunhamed Bicha, Avalon Technologies - 3QFY26 Earnings call

- Avalon has a dual-shore manufacturing model with plants in USA (~20% by value; Atlanta and Fremont) and India (~80%; mainly Chennai, and one facility in Bengaluru)
- Avalon gets ~60% of revenue from US clients; this reflects the large market in the US and Europe for mission-critical box-builds, with India swiftly narrowing the gap (Railways, Transmission, etc)
- Avalon management aims to grow in Europe/SEA markets going forward, and rebalance geographical exposure as: 30% USA, 10% EU, 10% SEA, and 50% India, by FY29

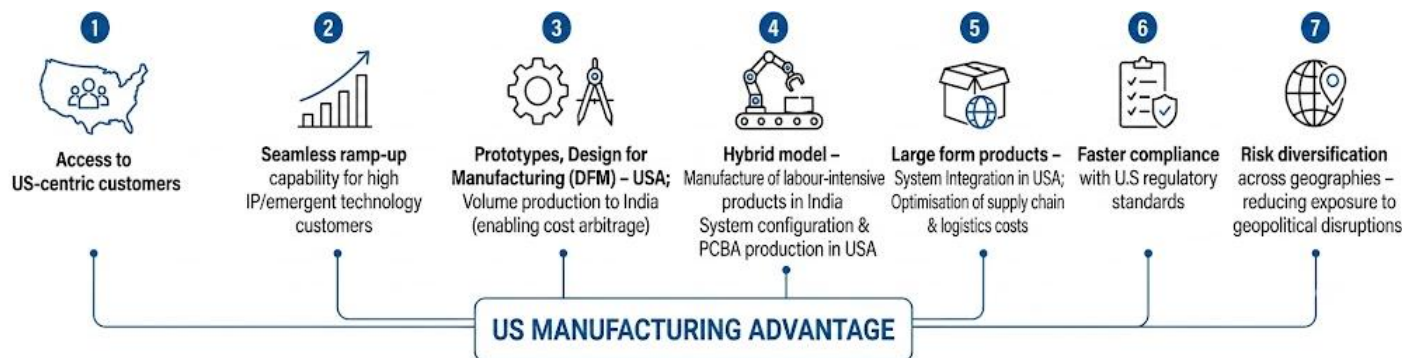
Exhibit 82: US customers form >55% of Avalon's revenue (59% in 1QFY27)

Source: Company, Emkay Research

"We are analyzing whether we can do the bulk of the work in India and then shift a portion of the production to our entities in the US and Canada"

- J. Sampath, CFO Kaynes Technologies, Media Interview

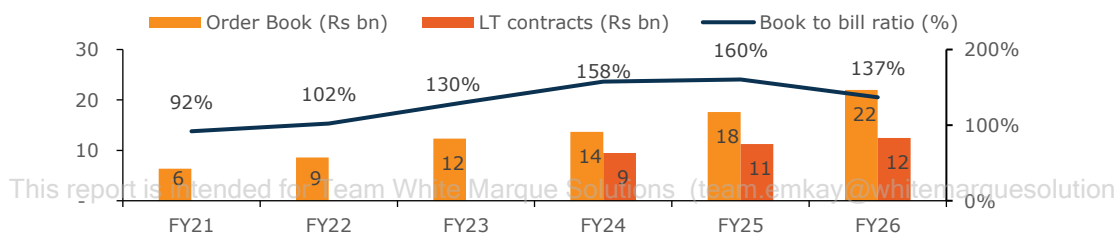
- Avalon's management expects the US operations to breakeven by end-FY27, at ~4% EBITDA loss in Q4FY26; this is reflected in our estimates
- To illustrate that dual-shore model provides a competitive edge, we highlight that Kaynes also considered dual shore manufacturing at the height of tariff uncertainty
- In our view, presence in USA is an asset for Avalon as it enables the company to:
 - attract/serve clients who are particular about wanting local assembly/oversight
 - achieve faster regulatory compliance with US standards for certain products
 - carry out system integration in USA for large form products to reduce logistics costs
 - position itself as a US-based manufacturer, with India operations used to lower costs

Exhibit 83: Avalon leverages its US manufacturing presence to give its customers a sense of greater control/oversight into their products; in our view, this is an important edge in technologically sensitive contract manufacturing

Source: Company, Emkay research

D) One-stop-shop for mission-critical box-build EMS

- Avalon has been able to position itself as a 'one stop shop' for mission-critical box builds with ~75-80% of revenue from clients that have been with the company for >9 years
- Avalon was able to recover ~99% of tariffs (on its exports to USA) from its customers
- The order book CAGR stood at 28% over FY21-FY26, and the company's long-term contracts (counted separately from the order book) have grown at 15% over FY24-26

Exhibit 84: Avalon's order book (executable in 0-14 months) CAGR stood at 28% over FY21-FY26; long term contracts (executable in 14M-3Y) have grown at 15% CAGR over FY24-26

Source: Company, Emkay Research

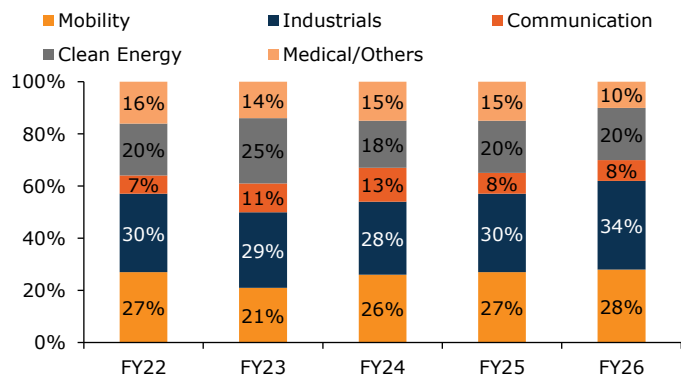
Multiple >30% growth vectors with long-term visibility keep execution risk low

Our view: We demonstrate that Avalon is well positioned to take advantage of secular growth tailwinds in all its verticals while adding new >30% growth opportunities

A) True HMLV – Deep engineering sectors served

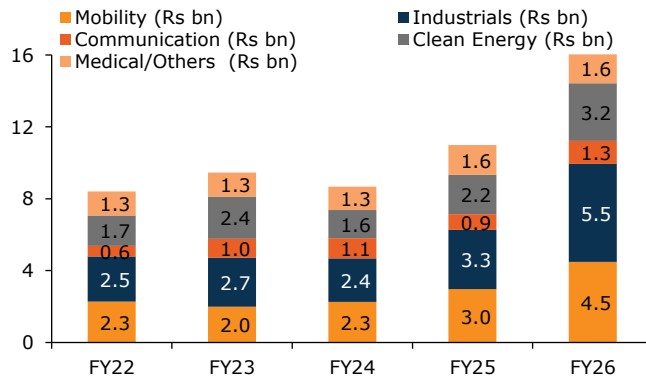
- Avalon exclusively serves deep engineering sectors like Aerospace, Industrials, Railways, Clean Energy; no exposure to sectors like consumer durables

Exhibit 85: Avalon is diversified but mobility/industrials are mainstay verticals; Clean Energy is picking up fast



Source: Company, Emkay Research

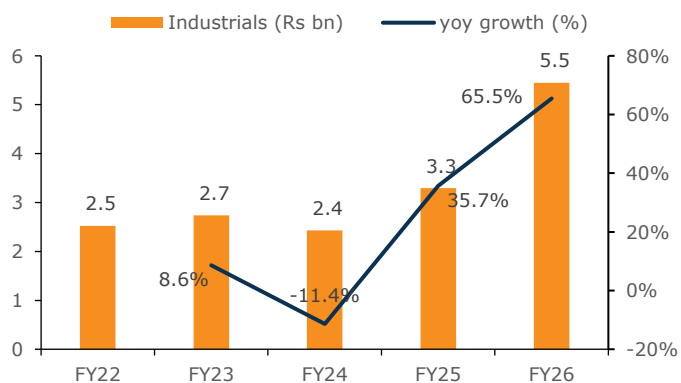
Exhibit 86: Avalon's vertical-wise revenue – Mobility, Industrials, and Clean Energy are key growth drivers



Source: Company, Emkay Research

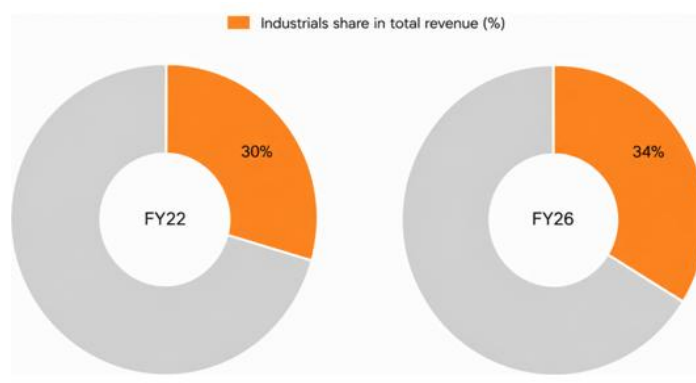
- Industrials (comprising Power and Automation): Avalon's largest vertical with 34% revenue share in FY26, posting second-highest CAGR of 21.3% over FY22-26
 - Products include PCBAs, CNC machine magnetics, power cables, controllers for power pumps, control panels, piston assemblies, fuel dispenser systems, and others
 - Likely to remain the fastest-growing sector for Avalon, with multiple new growth opportunities and projects currently underway
 - The semiconductor equipment business will be part of the Industrials vertical; prototype validation is ongoing and volume production is expected from FY27
 - Onboarded a new major global power sector customer from Europe in FY26, for power inverter systems; will be served from the USA facility first
 - Working in India with another major global power customer – both power customers could unlock further opportunities in power transmission space for Avalon

Exhibit 87: Industrials posted the second-fastest CAGR of 21.3% over FY22-26 among Avalon's verticals



Source: Company, Emkay Research

Exhibit 88: Industrials is Avalon's largest vertical, with 34% revenue share in FY26, having grown from 30% in FY22

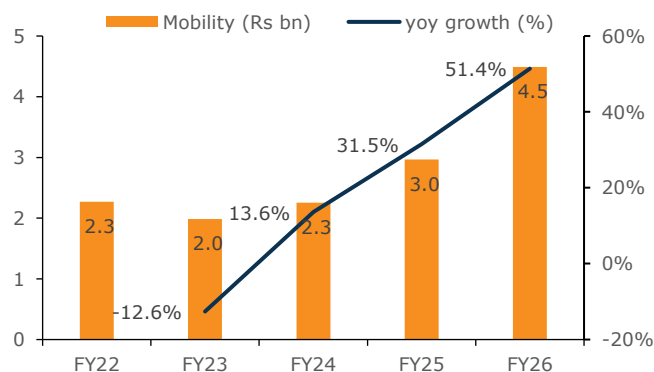


Source: Company, Emkay Research

- Mobility (comprising Railways, Aerospace, and Automotive): Avalon's second-largest vertical with 28% revenue share and third-highest CAGR of 18.6% over FY22-26

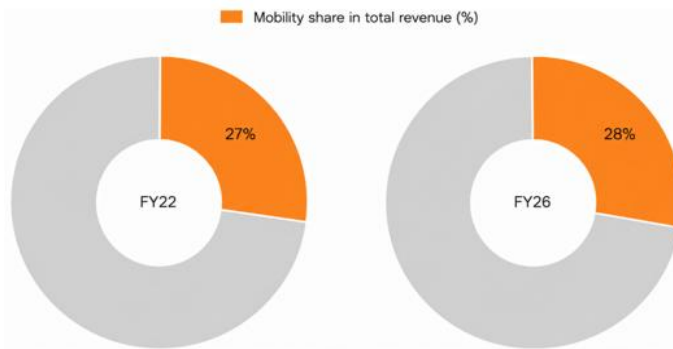
- Offerings in Aerospace (~8% of consolidated revenue) include seating systems, cabin systems, smoke detectors, combustion liners, engine parts, wiper assemblies, and lighting enclosures
- Offerings in Railways (~16% of consolidated revenue) include electronic interlocking systems, anticollision systems ('Kavach'), braking systems, wheel slide protection systems, engine control systems, emergency braking systems, and traction systems
- Offerings in Automotive include GPS trackers for trucks, camera systems, electronic dashboard, actuation systems, 2W controller systems, battery management systems, converters and controllers, and motion control systems
- The Kavach anti-collision system has completed testing and is on track for commercial production in 2HFY27 – production of locomotive engine subsystems has already commenced
- Aerospace cabin sub-assemblies have passed first article inspection and are moving toward volume production – the company is also pursuing opportunities in metal cockpit assemblies and landing gear components

Exhibit 89: The Mobility vertical posted the third-highest CAGR of 18.6% over FY22-26



Source: Company, Emkay Research

Exhibit 90: Mobility is Avalon's second-largest vertical, with 28% revenue share in FY26



Source: Company, Emkay Research

Exhibit 91: Avalon's product portfolio in Rail, which is part of the Mobility vertical – Wide array of signaling and train interior products



Source: Company, Emkay Research

Exhibit 92: Avalon's product portfolio in Aerospace/Vehicles, which is part of the Mobility vertical – Aerospace is largely sheet metal/plastics

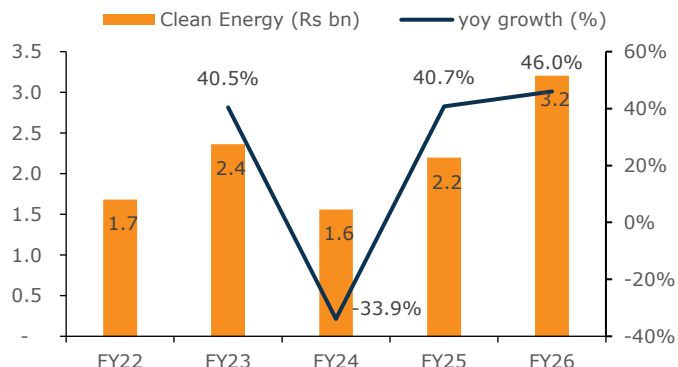


Source: Company, Emkay Research

- Clean Energy (comprising Solar, Hydrogen, and Electric Vehicle): Avalon's third-largest vertical at 20% of FY26 revenue and fourth-highest CAGR of 17.5% over FY22-26
- Offerings in Solar include solar trackers, solar inverters, solar chargers, Solar pump controllers, energy storage system
- Offerings in Hydrogen include DC power supply, AC/DC power converters, inverters, sub-systems for electrolyzers

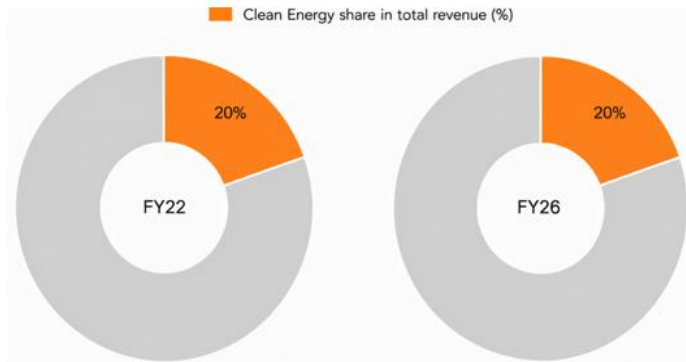
- Offerings in EVs include onboard charging units, converters, motor controllers, electronic dashboards, management systems, sensor boards
- The company's focus is energy storage systems, which is growing >50% pa in USA

Exhibit 93: Clean Energy's fourth-highest CAGR of 17.5% over FY22-26, impacted by US renewable policy changes in FY24



Source: Company, Emkay Research

Exhibit 94: Clean Energy is Avalon's third-largest vertical at 20% of FY26 revenue, with strong growth momentum recently



Source: Company, Emkay Research

Exhibit 95: Avalon's clean energy vertical has a play into multiple high-growth potential segments, including electric vehicles, energy storage systems, solar plant management systems, charging and energy management systems, and hydrogen electrolyzers

ELECTRIC VEHICLES



- 1 Ceramic Capacitors
- 2 Safety Critical
- 3 Relays, Switches and Sensors

SOLAR

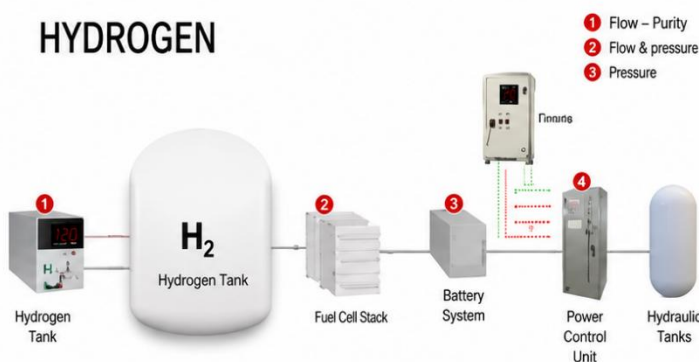


- 1 Solar Inverters
- 2 Solar Junction
- 3 Solar Chargers
- 5

HYDROGEN



- 1 Charging Station
- 2 Ceramic Capacitors
- 3 Onboard Charger
- 4 Relays & Contactor Switch
- 5 Battery Voltage Control unit
- 6 DC Converter

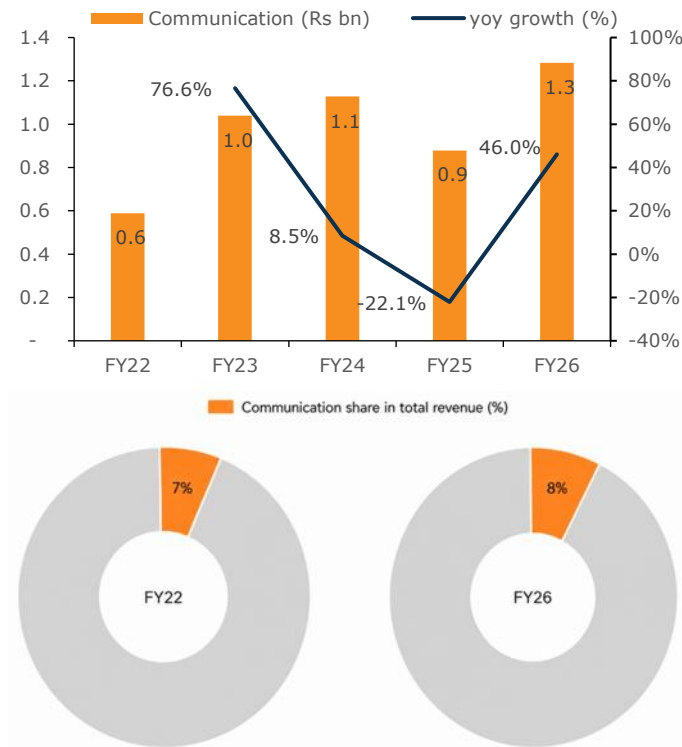


Source: Company, Emkay Research

- Communication (comprising Telecom, Satellite, and Digital Infrastructure): The smallest vertical with 8% revenue share but the highest CAGR, of 21.5% over FY22-26
 - Offerings in Telecom/5G include remote radio heads (RRH), antenna-base band units
 - Offerings in Satellite include base station antenna, digital antenna, control panels
 - Offerings in Digital infrastructure include fleet management systems, vehicle tracking systems, vision systems
 - Completed prototypes of control systems for satellite communication customer and volume orders expected in FY27

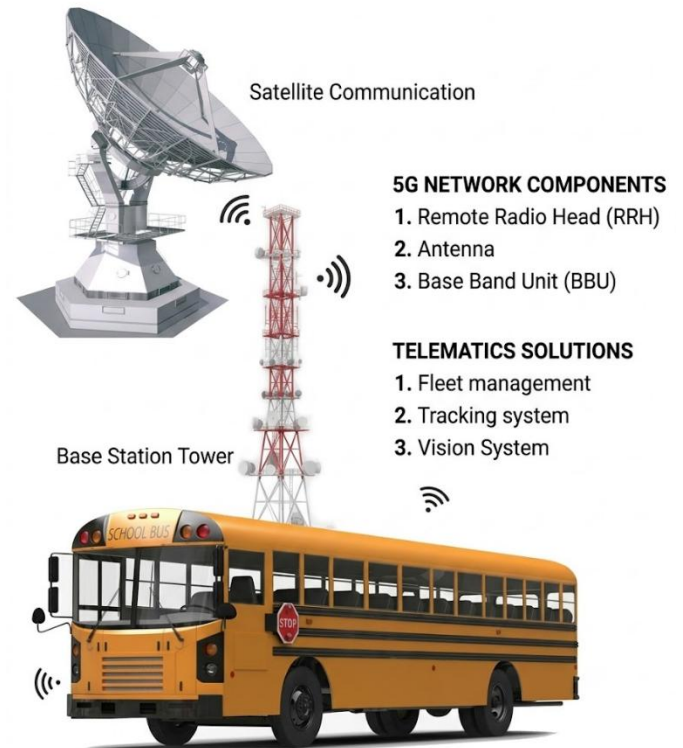
This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions)

Exhibit 96: Communication is Avalon's smallest vertical with 8% revenue share; posted highest CAGR though on a small base



Source: Company, Emkay Research

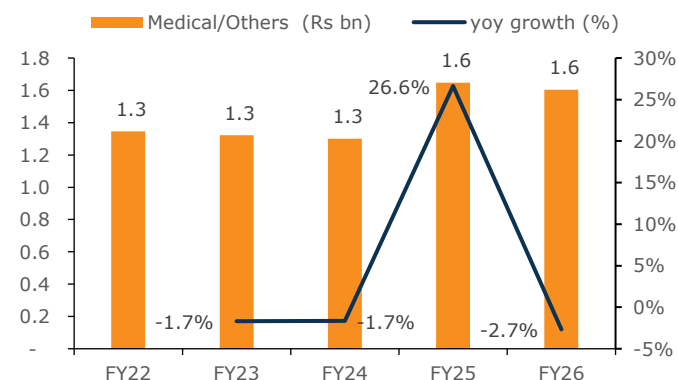
Exhibit 97: Avalon's product portfolio in Communication vertical is mainly focused on 5G Network components and Telematics



Source: Company, Emkay Research

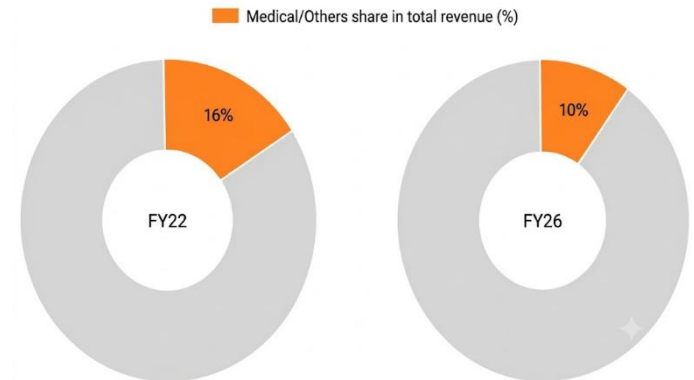
- Medical, Defense, and Others: Avalon's second-smallest vertical with 10% revenue share in FY26 and the lowest CAGR of 4.5% over FY22-26
- Offerings include PCBAs for oxygen concentrators and blood analyzers, cables for flow meters, and micro motor controllers, among others
- In our view, as of now, box-build contribution in this segment is low – Management has indicated it is shifting focus and scouting growth opportunities in the segment
- Avalon onboarded a new customer in the defense segment for critical components for an integrated battlefield command system

Exhibit 98: Avalon's Medical/Others vertical has the lowest CAGR (4.5% over FY22-26); yet to see sustained growth momentum



Source: Company, Emkay Research

Exhibit 99: Medical/Others revenue share has reduced to 10% in FY26 - Management has indicated it is shifting focus



Source: Company, Emkay Research

B) Growth from SME box-builds

- Avalon has been working on supplying a box-build for semiconductor manufacturing equipment (SME) with a leading global player for ~2 years now
- The company completed project readiness phase and has guided for production ramp-up over 2HFY27

"We are partnering with a leading global semiconductor equipment company to provide highly complex Industry 4.0 compliant box-builds"

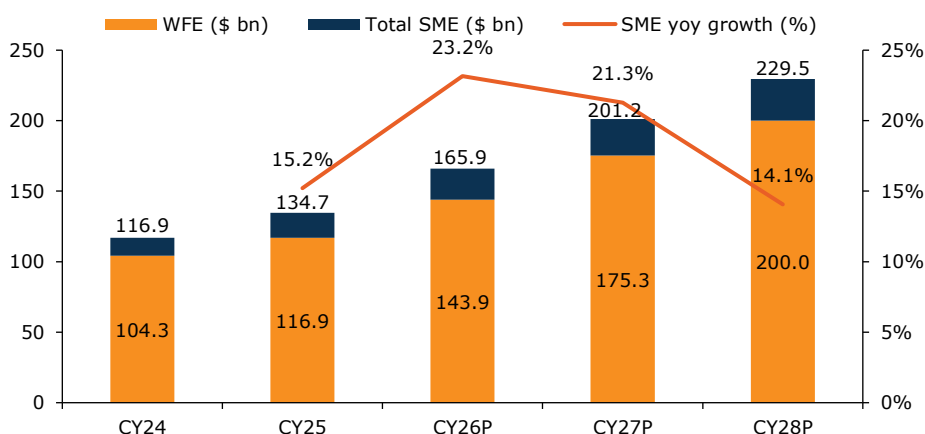
- Kunhamed Bicha, Avalon Technologies's 1QFY26 Earnings call

- On our estimates, Avalon could add ~Rs6.5bn topline, with one global SME player at 100% wallet share
- Potential annual opportunity for the first box-build could be up to ~Rs35bn, on the assumption of only one type of SME served
- Potential upsides include: 1) winning more products with same customer; 2) winning more customers for same product and; 3) serving the wider SME market
- Industry body SEMI estimates that the total global sales of SME will reach \$166bn/\$230bn by CY26/CY28 from \$134.7bn in FY25 – CAGR of ~19% over CY25-28
 - Total Wafer Fab Equipment (WFE) sales are expected to grow 23.1%/21.8%/14.1% yoy to \$143.9bn/\$175.3bn/\$200bn in CY26/CY27/CY28, respectively
 - Wafer Fab Equipment (WFE) sales for foundry/logic applications are expected to grow 18.9%/18.1%/13.6% yoy to \$78.0bn/\$92.1bn/\$104.7bn in CY26/CY27/CY28
 - Wafer Fab Equipment (WFE) sales for DRAM applications are expected to grow 39.0%/27.4%/15% yoy to \$38.8bn/\$49.4bn/\$56.9bn in CY26/CY27/CY28
 - Wafer Fab Equipment (WFE) sales for NAND applications are expected to grow 30.7%/31.1%/14.5% yoy to \$13.9bn/\$18.2bn/\$20.8bn in CY26/CY27/CY28
- Avalon could also benefit from the ISM 2.0 scheme through this product, depending on the details of the scheme

"AI is accelerating demand for more powerful and efficient chips, driving increased investment across the semiconductor capital equipment market; The mid-year forecast points to a higher equipment spending trajectory as chipmakers invest in the leading-edge logic, advanced memory, test and packaging capabilities required for the AI era."

- Ajit Manocha, SEMI president and CEO

Exhibit 100: Strong growth in semiconductor manufacturing equipment (SME); ~87% share of wafer fabrication equipment (WFE)



Source: SEMI ('Global Semiconductor Equipment Sales forecast' – Issue 14-Jul-26), Emkay Research

C) Growth from railways 'Kavach' systems

- Avalon is the EMS partner for Kyosan's Electronic interlocking and Kavach products
 - Testing completed for Kavach product; commercial production expected by 2HFY27
 - Kyosan (TSE: 6742) Japanese railway signaling specialist; reported ~\$621mn FY26 revenue, with signaling systems cornering 85.7% revenue share
 - Kyosan is among the RDSO-approved vendors for Kavach
- Annual budgetary allocations to Signaling and Telecommunication posted CAGR of 23% over FY20-BE27 – representing 2.6% of total capex in BE27 vs 1.1% in FY20
 - Total program capex trackside Kavach implementation was ~Rs280bn, with ~Rs28bn spent in FY26 and ~Rs250bn yet to be spent
 - Total program capex Locomotive Kavach implementation was ~Rs72bn for ~1,000 locomotives @7.2mn/unit; we model @Rs.8mn/unit based on recent contracts
 - Electronic Interlocking Systems implementation is expected to require Rs152bn of total program capex, with Rs95bn for new connections and rest for upgradation

We are very well entrenched in the rail segment. We see a lot of requirements for the Indian railways coming to our customers, whether it's interlocking, whether it's braking, whether it's cables. We are also in the process of testing Kavach system for our customers for interoperability and our customer has been approved by the Indian railways

- Kunhamed Bicha, Avalon Technologies's 2QFY25 Earnings call

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions.com)

- Based on the full implementation of this system alone, the EMS EBITDA opportunity translates into Rs34bn at 10% EBITDA margin (cumulative by FY30)
- Orders in Kavach 5.0 (for Metrorail, busy sub-urban networks, etc) and Train Management systems represent additional upside to these estimates

Exhibit 101: Strong growth momentum in budget allocation for railways signaling and telecommunication infra likely to continue

Rs. bn	FY20	FY21	FY22	FY23	FY24	FY25	BE26	BE27
Total Railway Capex	1,617	2,151	2,314	2,622	2,652	2,694	2,652	2,930
- o/w Signaling and Telecommunication	18	18	21	42	56	56	68	75
as a % of Total Railway Capex	1.08%	0.84%	0.93%	1.60%	2.10%	2.07%	2.56%	2.56%
7Y CAGR of S&T Capex								23.11%

Source: Government data, Emkay Research

Exhibit 102: We estimate EMS EBITDA opportunity from Kavach and Electronic Interlocking of at least Rs50bn to 2030

	Work yet to begin	EBITDA opportunity (Rs bn)
Kavach: Trackside (route kilometers)	38,548	17
Kavach: Locomotives (units)	8,979	11
Electronic Interlocking: Stations (nos)	635	23

Source: Government data, Emkay Research

D) Power transmission electronics box builds

- Avalon management has guided that they are working on power transmission box builds; the company has entered 2 out of the 3 major global customers in HVDC power electronics and substation infrastructure
- In our view, this will likely prove to be a major growth area for Avalon and the company is well positioned to leverage its dual shore manufacturing presence and box build expertise
- Investments in upgradation/expansion of power transmission infra across all major markets, to accommodate changing supply demand dynamics—an increased renewables mix on the supply side, and data centers, electric vehicles, etc, on the demand side
 - India – Rs9trn (~\$95-100bn) by 2032; Rs6trn remaining to be deployed
 - USA – \$1trn by 2035; \$950bn to be deployed
 - UK – £170bn (~\$130bn) by 2035; £120bn to be deployed
 - EU – €475bn (~\$545bn) by 2035-2040; ~€380bn to be deployed
- Based on our analysis of recently awarded projects by country and rate schedules in the respective countries, electronics opportunity size works out to at least 5-7% of total transmission capex
 - The presents a revenue opportunity of ~Rs2.1trn globally for EMS players over the next decade

Exhibit 103: Our estimate on the EMS addressable opportunity arising from budgeted grid investments; grid investment budgets have continued to inch up and electronics content measured herein is estimated from the 'Schedule of Rates' of recently awarded project

	India	USA	UK	Germany	France	Italy	Rest of EU
Transmission Capex - to be deployed (\$ bn)	63	950	162	132	106	23	178
Outer year for deployment	2032	2035	2035	2037	2040	2034	2040
Split between Line and non-Line Capex	42:58	52:48	45:56	47:54	45:55	31:70	44:56
EMS addressable opportunity (Rs bn)/year	12	121	25	17	10	3	16

Source: IEA, Emkay Research

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions)

E) Business wins bring long-term earnings visibility

- As we noted earlier, ~75% of Avalon's revenue comes from customers that have been with the company for >9 years
 - Mission-critical box-builds have long testing and validation times, involving multiple rounds of vendor audits and prototype testing – likely to last 1-3 years
 - For example, by the time box-builds for the SME customer ramp-up, Avalon will have been working on it >2.5 years
 - Drivers of this dynamic are 1) ensuring controlled access to competitively/strategically sensitive IP from the OEM to EMS; 2) meeting steep quality and reliability benchmarks commensurate to the 'mission-critical' nature of products; and 3) tightly controlled and monitored supply chain access
 - It follows that if onboarding a new EMS vendor is so resource intensive for the OEM, then customer stickiness is extremely high once onboarded for the EMS vendor – provided they continue to deliver
 - This is Avalon's key moat, and also the reason why Avalon's business wins are a long-term uplift to its baseline revenue scale – production cycles are 10-15 years

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions)

Financials: Management focus on low capex, high NFA turns; WC investments necessary

Our View: 1QFY27 results indicate strong momentum in business growth continues. We believe ramp ups in supplies to SME customer, clean energy, railways orders, and other industrials will continue to drive growth. Avalon will continue to generate superior fixed asset turns driven by exports and box-builds, and will be able to bring down WC through scale and growth in domestic business.

A) Details of Financials

- We build 46% revenue growth in FY27E and 40% revenue CAGR over FY26-33E
 - Avalon's is currently investing in growth programs which are currently showing up neither in P&L nor in order-books – in our view Avalon will double revenue by FY28E, one year ahead of guidance

Exhibit 104: Avalon will sustain growth momentum late into the decade, as it embeds into global supply chain for niche mission-critical box-builds; our EBITDAM profile reflects US manufacturing operations breaking even in late-FY27E

(Rs mn)	FY26	FY27E	FY28E	FY29E	FY30E	FY31E	FY32E	FY33E
Oper revenue	16,032	23,370	33,939	48,159	67,560	93,863	1,27,411	1,67,695
yoy growth	46.0%	45.8%	45.2%	41.9%	40.3%	38.9%	35.7%	31.6%
Gross profit	5,504	7,928	11,680	16,685	23,584	32,985	45,066	59,694
Gross margin	34.3%	33.9%	34.4%	34.6%	34.9%	35.1%	35.4%	35.6%
yoy growth	40.2%	44.1%	47.3%	42.8%	41.4%	39.9%	36.6%	32.5%
EBITDA	1,733	2,788	4,506	6,841	10,143	14,749	20,902	28,649
EBITDA Margin	10.8%	11.9%	13.3%	14.2%	15.0%	15.7%	16.4%	17.1%
yoy growth	50.9%	60.8%	61.6%	51.8%	48.3%	45.4%	41.7%	37.1%

Source: Emkay Research

- Avalon historical/guidance gross margin is in the 33-35% range, based on our vertical-wise bottom-up modelling, we believe there is upside potential to this range
- On EBITDAM, Management said that the India manufacturing and sales business EBITDAM is 16%, while the US manufacturing business EBITDAM is at -4%
 - Given that US manufacturing is ~25% of the business, breakeven in the US should lead to consol business EBITDAM of ~12%, all else being equal
 - The company is targeting ~25% ROCE – per our definition $(EBIT \times (1 - \text{tax})) / (\text{Total Equity} + \text{Total Debt} + \text{Lease Liabilities})$, ROCE will improve by 12pts to ~26% over FY26-33E

Exhibit 105: Avalon's return ratios will improve driven by margin improvements and capital turnover improvement

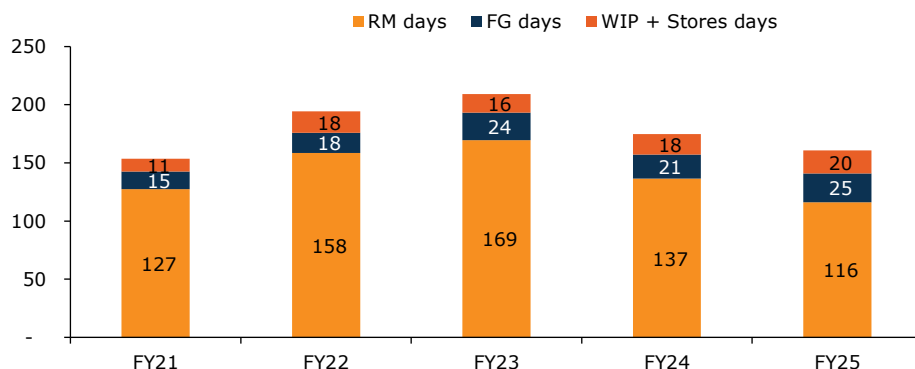
	FY26	FY27E	FY28E	FY29E	FY30E	FY31E	FY32E	FY33E
DuPont Analysis: ROE	15.6%	18.8%	23.6%	26.7%	28.8%	30.0%	30.3%	29.7%
DuPont Analysis: ROCE (Post Tax)	13.4%	14.8%	17.9%	19.9%	21.9%	23.6%	24.9%	25.6%

Source: Emkay Research

Notes:

1. Net Fixed Asset turnover: Net Fixed Assets include all operating assets/investments = PPE + CWIP + ITA + ITUD + RoUA + Goodwill
2. ROCE post tax: $EBIT \times (1 - \text{Tax})$ divided by Sum of (Debt, Lease Liabilities, Equity with NCI)
3. ROIC post tax: Operating Profit $\times (1 - \text{tax})$ divided by Sum of (Fixed assets + Net current assets excluding cash and equivalents)
4. Operating Profit is calculated only from Operating Revenue whereas EBIT is calculated using Total Income

- Avalon's working capital investments have been ahead of peers historically – the company has improved its core working capital days to 144 in FY26 (from 178 in FY25)
 - Avalon's WC comes mainly from Inventory Days; two dynamics are at play: 1) RM Inventory days, and 2) FG Inventory days

Exhibit 106: RM days and FG days are the biggest contributors to Inventory days

Source: Emkay Research

Note: Inventory days here are calculated using point in time balance sheet values rather than averages

- As an export-heavy player, Avalon will bear an elevated FG Inventory (~25 days) burden relative to peers – we expect modest improvements to this as the company increases domestic revenue share and leverages scale, to access more advantageous financing/supply chain solutions
- Avalon's RM inventory was ~116 days in FY25 – this reflects Avalon trying to enter new and niche mission-critical box-builds; to secure approvals from customers Avalon need to go the extra mile in R&D, prototyping testing, and validation
- We expect this dynamic to moderate once Avalon becomes better entrenched in global supply chains and with its customers
- Avalon's receivable days have largely been rangebound (78-84 days) – we expect receivables days to improve to ~72 days

B) Summary of 1QFY27 results

- Avalon 1QFY27 results were strong, with revenue up 49.8% yoy, marking the 8th straight quarter with >30% revenue growth and 5 out of last 8 quarters delivering >40% growth
 - Revenue was 13% above Bloomberg consensus estimates
- The strong growth was accompanied with better-than-expected EBITDA and EBITDAM expansion – PAT was in line with consensus, mainly owing to lower reported Other Income
 - Gross Margin came in at 34.7%, in line with estimates
 - EBITDA came in at Rs580mn, up 29% over consensus and up 94% yoy; EBITDAM came in at 12%, coming in 147bps ahead of street estimates
 - PAT at Rs349mn was in line with consensus, but up 145% yoy, with PAT margin of 7.2% vs 4.4% in 1QFY26 and 8.6% in 4QFY26
- In terms of segmental mix, Clean Energy was the standout performer, with Mobility and Industrials continuing to deliver strong growth
 - Clean Energy revenue grew ~141% yoy to Rs1,405mn, comprising 29% revenue share
 - Industrials revenue grew ~50% yoy to Rs1,550mn, representing 32% revenue share
 - Mobility revenue grew ~44% yoy to Rs1,211mn, forming 25% revenue share
 - Medical/Others revenue grew ~7% to Rs484mn, translating into 10% revenue share
 - Communication revenue declined ~40% yoy to Rs194mn, dropping to 4% revenue share
- Key takeaways from the conference call
 - Guidance revised upward to 26–30% for FY27 (from 24–27%) – we believe this is conservative (and in keeping with Avalon's historical pattern on guidance)
 - India operations were 72% of revenue, EBITDA margin for India was 16.7%, PAT margin was 11.1%

- US operations loss narrowed to Rs40mn (from Rs140mn two years ago; Rs90mn one year ago); EBITDA breakeven target by end-FY27 for US operations reiterated
- New Chennai manufacturing plant is complete and will commence production from 2QFY27, with focus on catering to domestic demand
- The company is also in the process of acquiring a new land parcel in Chennai for future expansion plans
- The company maintained a strong guidance outlook for the Kavach commercial production, wafer fabrication equipment (wallet share increased), and new business wins in the aerospace sector

Exhibit 107: Avalon's recent quarter performance – Strong 1QFY27 results and robust growth in the last 8 quarters with margin expansion

Particulars (Rs bn)	2QFY25	3QFY25	4QFY25	1QFY26	2QFY26	3QFY26	4QFY26	1QFY27
Op Revenue	2,750	2,809	3,428	3,233	3,825	4,175	4,799	4,844
- yoy change	36.8%	31.1%	58.1%	62.1%	39.1%	48.7%	40.0%	49.8%
COGS	1,737	1,760	2,225	2,085	2,512	2,749	3,183	3,165
- % of oper rev	63.2%	62.7%	64.9%	64.5%	65.7%	65.8%	66.3%	65.3%
Gross Profit	1,013	1,048	1,203	1,148	1,313	1,427	1,616	1,679
- Gross Margin	36.8%	37.3%	35.1%	35.5%	34.3%	34.2%	33.7%	34.7%
Employee Cost	467	494	570	634	699	700	774	834
- yoy change	2.4%	7.6%	26.3%	39.4%	49.6%	41.8%	35.9%	31.6%
- % of oper rev	17.0%	17.6%	16.6%	19.6%	18.3%	16.8%	16.1%	17.2%
Other Expenses	245	208	219	216	228	247	273	266
- yoy change	50.4%	25.8%	15.3%	31.5%	-7.0%	18.4%	24.6%	23.2%
- % of oper rev	8.9%	7.4%	6.4%	6.7%	6.0%	5.9%	5.7%	5.5%
EBITDA	301	346	414	299	386	480	569	580
- yoy change	139.6%	109.5%	139.6%	583.4%	28.1%	38.5%	37.5%	93.9%
- % of oper rev	11.0%	12.3%	12.1%	9.2%	10.1%	11.5%	11.8%	12.0%
D&A Expense	69	74	77	85	89	79	83	86
- % of oper rev	2.5%	2.6%	2.3%	2.6%	2.3%	1.9%	1.7%	1.8%
Finance Costs	37	45	42	38	41	30	42	35
- % of oper rev	1.4%	1.6%	1.2%	1.2%	1.1%	0.7%	0.9%	0.7%
Other Income	39	100	32	17	79	74	119	28
- % of oper rev	1.4%	3.5%	0.9%	0.5%	2.1%	1.8%	2.5%	0.6%
PBT	234	327	326	193	336	445	563	487
- yoy change	173%	261%	228%	-1059%	43%	36%	73%	152%
- PBT margin	8.5%	11.6%	9.5%	6.0%	8.8%	10.7%	11.7%	10.1%
Tax	60	87	83	51	86	119	151	139
- Tax rate	25.4%	26.7%	25.5%	26.4%	25.6%	26.7%	26.9%	28.5%
Exceptional	-	-	-	-	-	-	-	-
Minority	-	-	-	-	-	-	-	-
Adj PAT	175	240	243	142	250	326	412	349
- yoy change	140.1%	264.9%	243.8%	-716.1%	42.9%	35.9%	69.5%	145.3%
- PAT margin	6.4%	8.5%	7.1%	4.4%	6.5%	7.8%	8.6%	7.2%
Reported PAT	175	240	243	142	250	326	412	349
Reported EPS (Rs)	2.61	3.58	3.63	2.12	3.73	4.86	6.14	5.20
Adj EPS (Rs)	2.61	3.58	3.63	2.12	3.73	4.86	6.14	5.20

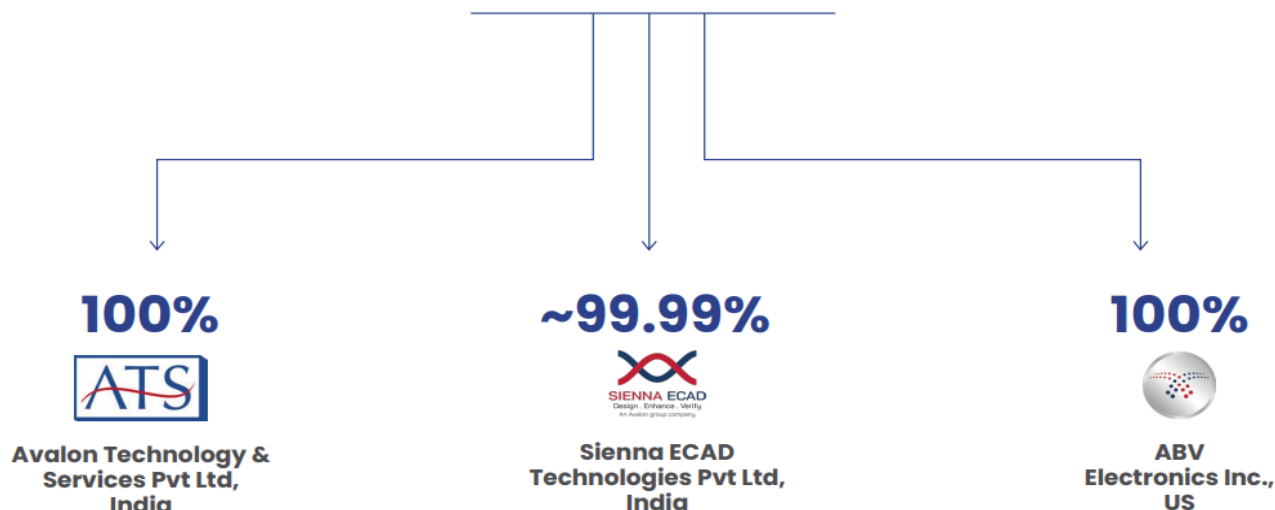
Source: Company, Emkay Research

C) Key risks

- Our thesis has three key risks: 1) Revenue growth at current pace (~50% over FY26 in FY27, 34% CAGR over FY26-33E. 2) Continued ability to generate superior asset turns from operating assets while maintaining disciplined capex. 3) Ability to lower working capital intensity through scale.

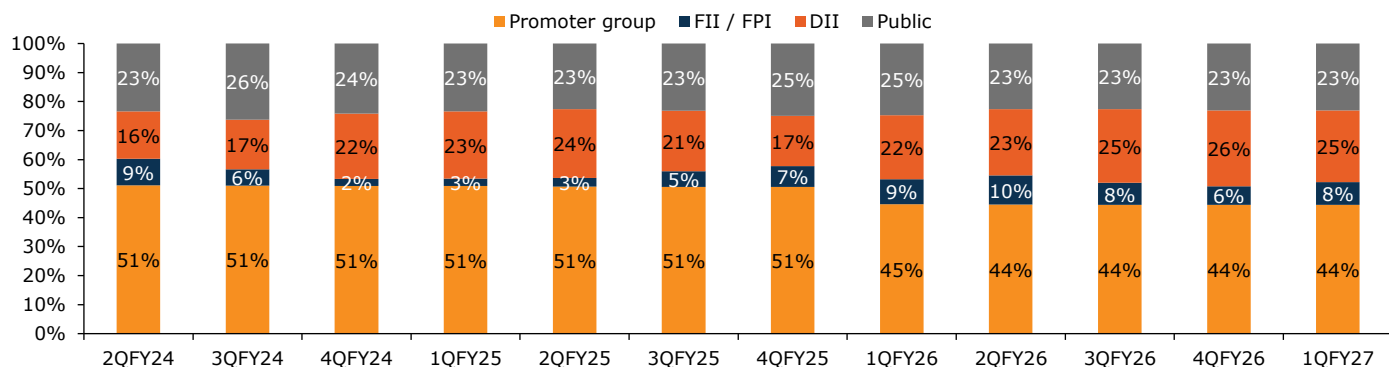
About the company

Exhibit 108: Avalon has a simple corporate structure with ATS being the Indian operating entity and ABV Electronics (DBA) SIENNA Corporation being the US operating entity; Sienna ECAD Technologies is the design and software development arm of the company



Source: Company, Emkay Research

Exhibit 109: Avalon's shareholding pattern



Source: Company, Emkay Research

Exhibit 110: Avalon's senior leadership team

Name	Role & Appointment	Profile
Kunhammed Bicha	Chairman and Managing Director Avalon Technologies Promoter and Co-founder	BE, Mechanical Engineering, PSG College of Technology. MS, Industrial Engineering, Wichita State University, USA. Co-founder of Sienna Corporation and Avalon Technologies. Associated with the company since incorporation.
Bhaskar Srinivasan	Promoter with ~9% stake Resigned from Board: 10-Feb-26 citing personal priorities; retains promoter shareholding	MS, Industrial Engineering, Wichita State University. MBA, Cochin University of Science and Technology. Co-founder of Avalon Technologies (since November 3, 1999) and co-founder of Sienna Corporation. Resigned from Board of Directors effective 10-Feb-26 – retains ~9% promoter shareholding.
Shriram Vijayaraghavan	Chief Operating Officer Avalon Technologies Appointed: 18-Oct-23	MS, Mechanical Engineering, University of Michigan Ann Arbor. MBA, Kellogg School of Management. Over 15 years in engineering and manufacturing. Previously: President, Wheels India; VP, Hertz Corporation (USA); Engagement Manager, McKinsey & Co (USA); Research, Caterpillar Inc.
Venky Venkatesh	Chief Sales Officer Avalon Technologies Joined: Apr-24	MS, Industrial Management, Northern Illinois University. Over 32 years of global sales experience across Fortune 500 companies with senior sales leadership roles at PwC, IBM, Infosys, and Accenture.
Suresh Veerappan	Chief Financial Officer (Current) Avalon Technologies	Chartered Accountant (CA). Global Executive MBA, Leadership & Strategy, Indian School of Business (ISB). Over 19 years in business strategy, investor relations, financial modelling, M&A, and compliance. Previously at Tattva Group, Bank of America, State Bank of India, and Grant Thornton India.

Source: Company, Emkay Research

Avalon Technologies: Consolidated Financials and Valuations

Profit & Loss					
Y/E Mar (Rs mn)	FY25	FY26	FY27E	FY28E	FY29E
Revenue	10,981	16,032	23,370	33,939	48,159
Revenue growth (%)	26.6	46.0	45.8	45.2	41.9
EBITDA	1,149	1,733	2,788	4,506	6,841
EBITDA growth (%)	83.7	50.9	60.8	61.6	51.8
Depreciation & Amortization	286	336	345	474	620
EBIT	863	1,397	2,442	4,032	6,221
EBIT growth (%)	117.7	61.9	74.8	65.1	54.3
Other operating income	-	-	-	-	-
Other income	124	280	50	65	83
Financial expense	120	141	249	383	502
PBT	867	1,536	2,243	3,714	5,802
Extraordinary items	0	0	0	0	0
Taxes	233	407	561	929	1,450
Minority interest	0	0	0	0	0
Income from JV/Associates	-	-	-	-	-
Reported PAT	634	1,129	1,682	2,786	4,351
PAT growth (%)	126.7	78.0	48.9	65.6	56.2
Adjusted PAT	634	1,129	1,682	2,786	4,351
Diluted EPS (Rs)	9.5	16.9	25.1	41.5	64.7
Diluted EPS growth (%)	126.1	77.9	48.6	65.5	56.0
DPS (Rs)	0	0	0	0	0
Dividend payout (%)	0	0	0	0	0
EBITDA margin (%)	10.5	10.8	11.9	13.3	14.2
EBIT margin (%)	7.9	8.7	10.4	11.9	12.9
Effective tax rate (%)	26.8	26.5	25.0	25.0	25.0
NOPLAT (pre-IndAS)	631	1,027	1,832	3,024	4,666
Shares outstanding (mn)	67	67	67	67	67

Source: Company, Emkay Research

Balance Sheet					
Y/E Mar (Rs mn)	FY25	FY26	FY27E	FY28E	FY29E
Share capital	132	134	134	134	135
Reserves & Surplus	5,983	7,084	8,819	11,692	16,180
Net worth	6,115	7,217	8,953	11,826	16,315
Minority interests	0	0	0	0	0
Non-current liab. & prov.	(166)	(111)	(111)	(111)	(111)
Total debt	1,417	1,834	3,076	4,862	7,061
Total liabilities & equity	7,765	9,252	12,609	17,252	23,927
Net tangible fixed assets	1,474	1,622	1,860	2,911	3,862
Net intangible assets	42	64	98	99	94
Net ROU assets	333	238	643	621	575
Capital WIP	104	239	274	204	249
Goodwill	0	0	0	0	0
Investments [JV/Associates]	18	89	89	89	89
Cash & equivalents	1,020	1,429	1,409	1,464	1,889
Current assets (ex-cash)	7,147	8,745	12,848	18,513	26,589
Current Liab. & Prov.	2,449	3,264	4,737	6,815	9,630
NWC (ex-cash)	4,698	5,481	8,111	11,698	16,958
Total assets	7,765	9,252	12,609	17,252	23,927
Net debt	397	405	1,667	3,398	5,172
Capital employed	7,765	9,252	12,609	17,252	23,927
Invested capital	6,214	7,167	10,068	14,709	20,915
BVPS (Rs)	91.4	107.7	133.4	176.0	242.6
Net Debt/Equity (x)	0.1	0.1	0.2	0.3	0.3
Net Debt/EBITDA (x)	0.3	0.2	0.6	0.8	0.8
Interest coverage (x)	7.9	11.7	9.8	10.5	12.4
RoCE (%)	13.5	20.2	23.6	28.5	31.5

Source: Company, Emkay Research

Cash flows					
Y/E Mar (Rs mn)	FY25	FY26	FY27E	FY28E	FY29E
PBT (ex-other income)	867	1,536	2,243	3,714	5,802
Others (non-cash items)	460	424	669	973	1,287
Taxes paid	(194)	(340)	(561)	(929)	(1,450)
Change in NWC	(883)	(1,049)	(2,696)	(3,275)	(4,174)
Operating cash flow	251	572	(345)	483	1,464
Capital expenditure	(466)	(536)	(563)	(1,291)	(1,421)
Acquisition of business	(18)	(71)	0	0	0
Interest & dividend income	-	-	-	-	-
Investing cash flow	538	(636)	(668)	(2,015)	(2,566)
Equity raised/(repaid)	9	10	21	28	48
Debt raised/(repaid)	(266)	400	1,242	1,786	2,199
Payment of lease liabilities	(123)	(136)	(171)	(235)	(229)
Interest paid	(131)	(119)	(200)	(327)	(492)
Dividend paid (incl tax)	-	-	-	-	-
Others	(12)	(76)	0	0	0
Financing cash flow	(523)	79	892	1,253	1,526
Net chg in Cash	265	24	(121)	(279)	425
OCF	251	572	(345)	483	1,464
Adj. OCF (w/o NWC chg.)	1,133	1,621	2,351	3,758	5,638
FCFF	(216)	35	(908)	(808)	43
FCFE	(346)	(84)	(1,108)	(1,136)	(448)
OCF/EBITDA (%)	21.8	33.0	(12.4)	10.7	21.4
FCFE/PAT (%)	(54.6)	(7.4)	(65.9)	(40.8)	(10.3)
FCFF/NOPLAT (%)	(34.1)	3.5	(49.6)	(26.7)	0.9

Source: Company, Emkay Research

Valuations and key Ratios					
Y/E Mar	FY25	FY26	FY27E	FY28E	FY29E
P/E (x)	200.7	113.9	77.0	46.6	29.8
EV/CE(x)	17.0	14.3	10.9	8.0	5.8
P/B (x)	21.1	17.9	14.5	11.0	8.0
EV/Sales (x)	11.6	8.0	5.6	3.9	2.8
EV/EBITDA (x)	111.2	74.4	47.1	29.5	19.7
EV/EBIT(x)	148.0	92.3	53.7	33.0	21.7
EV/IC (x)	20.6	18.0	13.0	9.0	6.5
FCFF yield (%)	(0.2)	-	(0.7)	(0.6)	-
FCFE yield (%)	(0.3)	(0.1)	(0.9)	(0.9)	(0.3)
Dividend yield (%)	0	0	0	0	0
DuPont-RoE split					
Net profit margin (%)	5.8	7.0	7.2	8.2	9.0
Total asset turnover (x)	1.5	1.9	2.2	2.4	2.4
Assets/Equity (x)	1.2	1.2	1.3	1.4	1.4
RoE (%)	10.9	16.9	20.8	26.8	30.9
DuPont-RoIC					
NOPLAT margin (%)	5.8	6.4	7.8	8.9	9.7
IC turnover (x)	1.9	2.4	2.7	2.7	2.7
RoIC (%)	11.0	15.4	21.3	24.4	26.2
Operating metrics					
Core NWC days	156.2	124.8	126.7	125.8	128.5
Total NWC days	156.2	124.8	126.7	125.8	128.5
Fixed asset turnover	8.5	10.0	12.8	13.7	13.8
Opex-to-revenue (%)	25.3	23.5	22.0	21.1	20.4

Source: Company, Emkay Research

This report is intended for Team White Marque Solutions (team.emkay@whitemarqueresolutions)

Execution eclipses tech/IP-led EMS story; initiate with REDUCE

Electronic Manufacturing Services ▶ Initiating Coverage ▶ August 11, 2026

CMP (Rs): 3,735 | TP (Rs): 3,300

We initiate coverage on Kaynes Technology with REDUCE and a DCF-based Jun-27E TP of Rs3,300 (12% downside), implying FY28E PER of 58x. Kaynes is attempting to move beyond traditional contract-manufacturing-led EMS into a design/IP/ODM-led model (~28% ODM revenue in FY26), while also investing in futuristic PCB-M and OSAT projects (~Rs10bn net over FY27E/FY28E; ~Rs9.3bn already done over FY24-FY26). If it executes successfully, Kaynes could reach Rs115bn/Rs251bn in revenue with 13.9%/17.5% EBITDA margins and 12.6%/19.3% post-tax ROCE by FY29E/FY33E, building a credible technological moat. However, the company's recent performance has highlighted the challenges of its strategy. The Iskraemeco acquisition has drawn the company into the high WC AMISP business with estimated Rs11bn receivables at end-FY26; PCB-M commissioning is delayed by >1Y; and OSAT remains risky due to high fixed costs and capital intensity (gross fixed asset turns ~1x for mature lines). The core EMS outlook has also become more challenging, given Kaynes's revenue concentration in Industrials and Auto segments, alongside multiple customer-specific risks emerging simultaneously. While we appreciate the company's technology ambitions, we believe execution risks currently outweigh the potential rewards and prefer to stay on the sidelines.

Transition from EMS to ODM: valuable long term, if short term can be survived

Kaynes's strategy is to transition from an EMS to an ODM. This increases near-term risks of sub-optimal asset utilization (through elevated R&D spends), loss of customers owing to perceived IP risks, and unrelated diversification. These risks have played out over the last 12M, with notable examples being: 1) the Iskraemeco acquisition gave access to a full smart meter box+software but also AMISP contracts, which the company is now busy executing; 2) plans to develop and license its own Kavach product to railway majors have not translated into growth yet. The company also bears customer/industry concentration risk, with ~80% revenue from Industrials and Automotive segments. We expect FY27 and FY28 to be challenging years for the company, given the smart metering overhang and the OSAT/PCB-M ramp-ups.

Tough economics in OSAT and no partner in HDI PCB-M add to execution burden

OSAT structurally tends to have single digit or low-double-digit ROCEs (4-12%), driven by short asset lives ~7-8 years, high D&A, and high, frequent replacement capex. Maintaining an optimal balance between capacity utilization (critical to profitability) and pricing power (low for a new OSAT beginning with legacy packaging) will keep management workload high. On the other hand, PCB-M is a process-intensive business, with yields (% of good boards of total) being key to profitability. Kaynes has chosen to pursue PCB-M independently, which we believe increases the risk of execution slippages.

EMS growth, smart meter receivables resolution key to restoring confidence

We expect core EMS revenue to grow 27%/31% in FY27E/FY28E, with OSAT/PCB-M taking total topline growth to ~33%/59%. Risks are skewed to the downside, owing to high cash consumption in WC and capex (Rs26bn total cumulative over FY27E/FY28E). Faster/slower resolution of Iskraemeco receivables is the key upside/downside risk, in our view; EMS growth kicking in would also help restore confidence in the name.

Target Price – 12M	Jun-27
Change in TP (%)	NA
Current Reco.	REDUCE
Previous Reco.	NA
Upside/(Downside) (%)	(11.6)

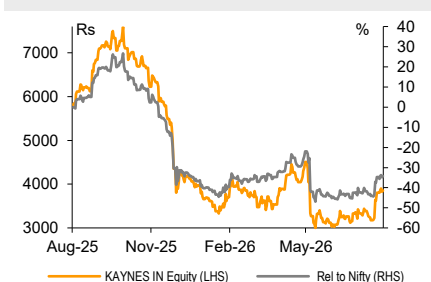
Stock Data	KAYNES IN
52-week High (Rs)	7,705
52-week Low (Rs)	2,995
Shares outstanding (mn)	67.0
Market-cap (Rs bn)	250
Market-cap (USD mn)	2,627
Net-debt, FY27E (Rs mn)	10,795.0
ADTV-3M (mn shares)	1.6
ADTV-3M (Rs mn)	5,759.4
ADTV-3M (USD mn)	60.4
Free float (%)	0.5
Nifty-50	24,583.8
INR/USD	95.3

Shareholding, Jun-26

Promoters (%)	53.5
FPIs/MFs (%)	5.8/11.8

Price Performance

(%)	1M	3M	12M
Absolute	12.0	(17.1)	(35.8)
Rel. to Nifty	10.2	(18.5)	(36.3)

1-Year share price trend (Rs)**Kaynes Technology: Financial Snapshot (Consolidated)**

Y/E Mar (Rs mn)	FY25	FY26	FY27E	FY28E	FY29E
Revenue	27,218	36,264	49,767	78,523	115,396
EBITDA	4,107	5,741	6,194	9,156	16,039
Adj. PAT	2,937	3,665	2,558	3,873	8,399
Adj. EPS (Rs)	45.5	54.8	37.9	57.3	124.3
EBITDA margin (%)	15.1	15.8	12.4	11.7	13.9
EBITDA growth (%)	61.6	39.8	7.9	47.8	75.2
Adj. EPS growth (%)	50.0	20.6	(31.0)	51.4	116.9
RoE (%)	11.0	9.6	5.2	7.4	14.3
RoIC (%)	12.1	10.4	7.6	10.3	16.7
P/E (x)	81.4	68.1	98.7	65.2	30.1
EV/EBITDA (x)	60.1	44.5	42.5	28.9	16.3
P/B (x)	8.5	5.2	5.0	4.6	4.0
FCFF yield (%)	(4.1)	(6.9)	(3.7)	0.1	1.6

Source: Company, Emkay Research

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions.com)

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EMS but with a design/ODM focus; acquisitions are yet to begin adding value

Our view: We illustrate that Kaynes is a more design/IP/ODM-focused EMS player; while this can create a long-term moat if executed correctly, it can increase near-term execution risks. We argue that acquisitions have not been value-accretive—especially the Iskraemeco acquisition, which has proved diversionary. We maintain that sustained execution and better business selection are needed to restore confidence in the name.

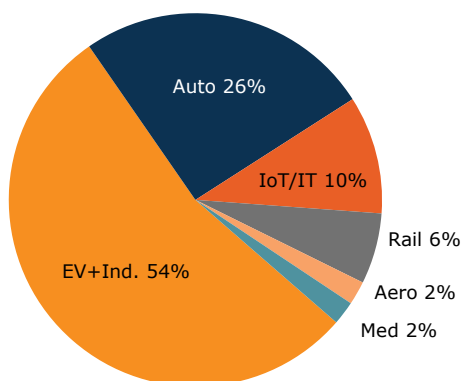
A) A design/IP-ownership approach to vanilla EMS

- Kaynes positions itself as a system design company and takes more of an IP/design-led strategy, different from a pure-play EMS business.
 - Per Kaynes's management, the company is focusing on creating reusable technology blocks that can work across applications; if this strategy works, Kaynes could move up the value chain from EMS to ODM/OEM, with higher margins.
 - The transition period brings risks of customer loss, however, as EMS companies attempting to segue into IP ownership can arouse competitive suspicion in clients.
- Kaynes's EMS franchise is concentrated in Industrial + EV and Automotive segments, making up 77%/80%/81% of revenue in 4QFY26/FY26/FY25.

"One of our key strategic priorities in the next few years will be to accelerate the transition from a traditional EMS-led organization to a differentiated ESDM and product-driven enterprise"

- N. Muthukumar, Kaynes Earnings Call 4Q FY26

Exhibit 111: Industrials, EV, and Auto account for ~80% of revenue



Source: Company, Emkay Research

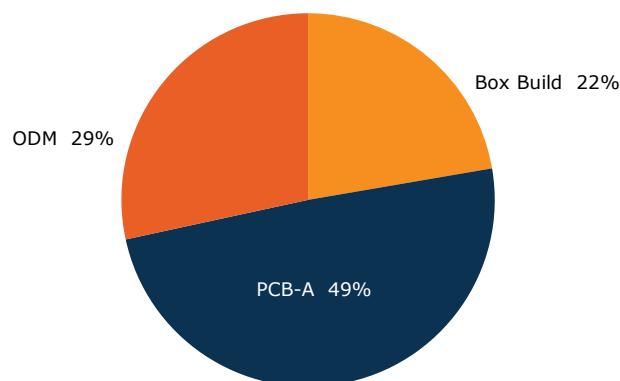
"We are changing our role into a device maker - that is ODM solution maker wherein we design the product, and we own the software and then we supply the device"

- J. Sampath, 3Q FY26 Kaynes Earnings call

[On Kavach] our plan is to be an ODM player. We will be allowing this product, once it is approved, to be used by all rail contractors and large OEMs so that we'll get a large portion of business. We have a German collaborator with whom this is being developed.

- R Kanan and J. Sampath, Kaynes 2Q FY25 earnings call

Exhibit 112: ODM increased from ~18% FY25 to 29% FY26

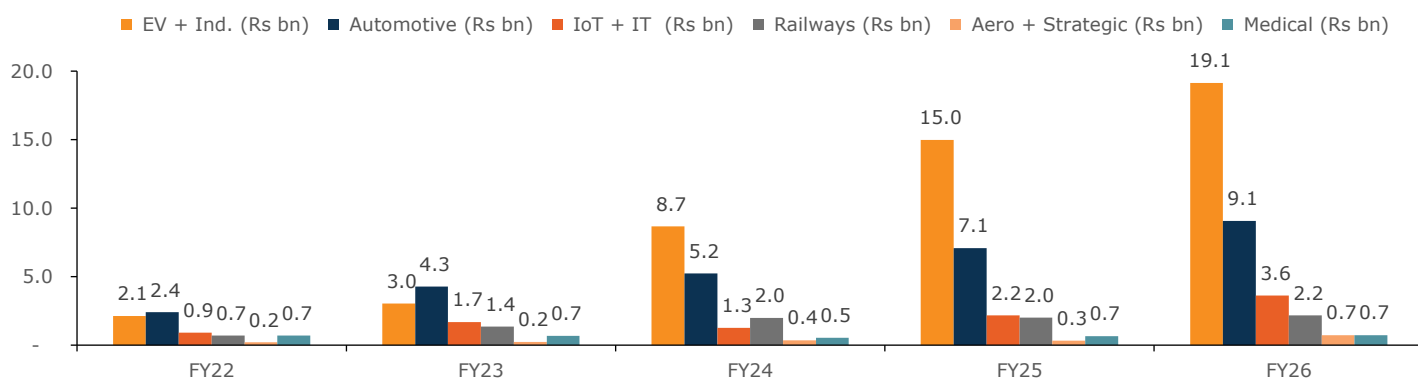


Source: Company, Emkay Research

- Products in the industrials + EV segment include smart meters, AMI infrastructure, grid-interface electronics, and EV systems.
 - Per the management, Kaynes's Hyderabad facility produces ~20% of India's smart meters; the company plans to expand into gas and water meters.
 - One reason for the Iskraemeco acquisition was that Kaynes gained the full smart meter (full box, software, clients) instead of being just a component supplier.
 - This vertical faces challenges with smart meter execution and weakness at the major E2W customer in the EV space.
- Automotive segment products include PCB-A for lighting, clusters, switches, etc, engine and vehicle control units, and wiring harnesses.
 - Developing automotive display modules in partnership with a Taiwanese company.
 - Developing camera module assembly with a consortium of nine Indian firms for applications such as dash cams and surveillance; all components, including image sensors, microcontrollers, lenses and casing, to be made in India.
- Railways is an important segment, with Kavach and electronic interlocking as growth drivers.
 - The company has opted for an ODM strategy in this segment-developing its own Kavach product and licensing it to railway players.

- The management guided that the Kavach product received initial approval and trial orders, with mass production ramping up from 2HFY27.
- The project has missed execution guidance multiple times, exemplifying how execution risk increases with the EMS-to-ODM business strategy.

Exhibit 113: Industrials, EV, and Automotive have been the main growth drivers; IoT/IT grew +60% yoy



Source: Company, Emkay Research

Exhibit 114: Kaynes's product portfolio across verticals

Automotive	Industrial & EV	Railways	Medical	Aerospace, Outerspace & Strategic electronics	IoT/IT, Cons and others
Cluster PCBA 	Engine Control Panel 	UM71 - Receiver 	Endoscopy cart & ICP sensor module 	HH Sonar 	Bar Code Scanner & RFID gateway
LED Headlamp/Tail Lamp/LED Position Lamp/DRL PCBA 	Street light controller 	ETCS cubicle 	X-ray & Dental X-ray machine 	Mission Critical Products² 	PLC & Asset Condition Monitoring gateway
Switches PCBA¹ 	Smart Energy Meter 	SDTC cubicle 	Controller Units 	ESAF 	Sensors
BCU Master / BCU Slave PCBA 	Precision Bridge and Strain Gage 	SDTC Card File 	Protein & clinical chemistry analyzers 	ATE & LRU Cable Assemblies 	Industrial HMI Reader & Industrial Tablet

Source: Company, Emkay Research

- The IoT/IT division grew 72%/67% in FY25/FY26, likely to sustain high growth for 2-3Y.
- Producing silicon microphones by sourcing wafers from Infineon and others, thus reducing India's import dependence in the headphone and wearable markets.
- Developing AR/VR glasses through a Mysore subsidiary in partnership with DigiLens, focusing on waveguide integration.
- High-performance servers for C-DAC, including the Rudra 1 and Rudra 2 models.

B) Iskraemeco acquisition proved a diversion, other acquisitions yet to deliver as "accelerators"

- From FY24 to FY26, Kaynes acquired/invested in seven companies, spending a total of Rs5.1bn (~1.4x FY26 PAT); total price-to-sales for all acquisitions was ~0.6x.
- Excluding Iskraemeco, price-to-sales is ~2.1x—Iskraemeco revenue is almost entirely receivables at this point.

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions.com)

- Kaynes was considering nearshoring some assembly/system integration work to the US/Canada through some of its acquisitions, at the height of tariff uncertainty, which in our view reflects that the company is exposed some disruption from tariffs

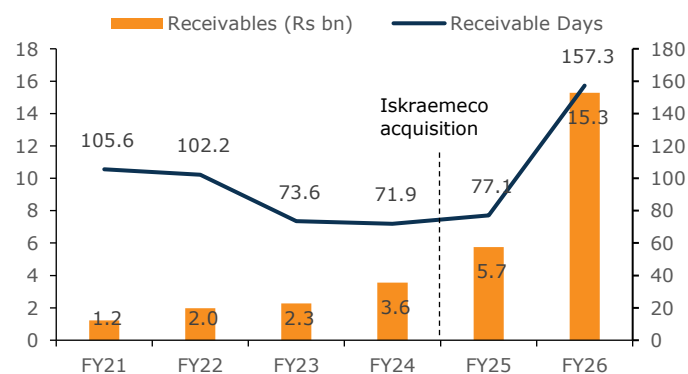
Exhibit 115: Subdued inorganic growth performance; Iskraemeco has been a drag

Company acquired	Date acquired	Stake acquired	Consideration (Rs mn)	FY25/last reported/estimated op rev (Rs mn)
Essnkay Electronics LLC	May-24	100%	100.2	-
Digicom Electronics Inc.	Jan-24	100%	208.8	452.4
Iskraemeco India Pvt. Ltd.	Sep-24	100%	429.9	6,178.6
Sensonic GmbH	Dec-24	54%	453.1	44.9
August Electronics Inc.	May-25	100%	3,505.5	1,720.0
Aerocaliph Components Pvt. Ltd.	Jul-25	76%	6.0	3.5
Cryo Precision Technologies Pvt. Ltd.	Jul-25	76%	0.7	9.4
Tranzmeo IT Solutions Pvt. Ltd.	Jul-25	11.13%	430.9	0.2

Source: Company, Emkay Research

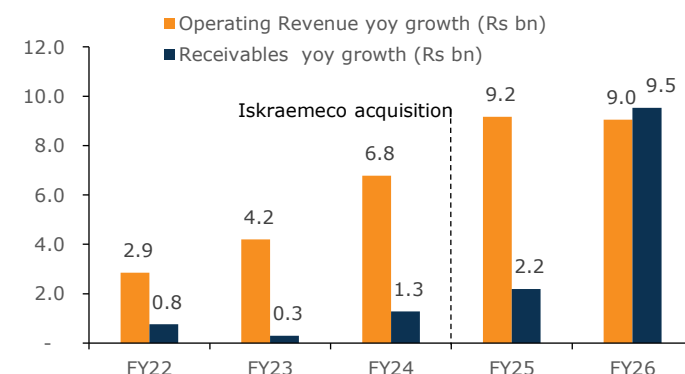
- Kaynes acquired Iskraemeco India Private Limited in Sep-24 for ~Rs430mn cash.
 - Iskraemeco was a buyer of PCB-A/sub-assemblies from Kaynes for its smart meters, which it would install and collect annuity payments on, under the AMISP model.
 - Kaynes inherited Iskraemeco's legacy contracts to install up to 3mn meters, of which 2.1mn meters had been installed by end-FY26.

Exhibit 116: Iskraemeco acquisition increased receivables days



Source: Company, Emkay Research

Exhibit 117: Trade receivables grew faster than Operating Revenue in FY26



Source: Company, Emkay Research

- Kaynes's payouts were linked to timely installation of meters—notoriously difficult, owing to the unpopularity of smart meters in Tier 2/Tier 3 towns.
- We estimate that in FY26 Kaynes could recover in cash only ~20% of the previous year's receivables and none of this year's revenue, implying DSO for meters of >365 days.
- The Iskraemeco acquisition has so far proved a costly diversion; while lucrative on paper, execution risks appear to have surpassed Kaynes's expectations.
- We have not modelled any receivable write-offs, given its counterparty is PGCIL (low likelihood of the NTSO with near-sovereign credit ratings defaulting on payments under a centrally championed scheme).

C) Slippage in delivering revised FY26 guidance; no FY27 guidance a missed opportunity

- In FY26, the business suffered due to a delay in Railway Kavach orders and cratering of orders from a major E2W OEM.
 - Kaynes missed its guidance of Rs40bn revenue for FY26; notably, guidance had been revised down in mid-4QFY26 from Rs44bn to Rs40bn, vs actual of Rs36bn.

"There's a railway product which got postponed. And being a new product, we don't want to aggressively push this through. We want to give time to all our designers to put their best foot forward so that we can get a bigger share of the business"

- J. Sampath, Kaynes earnings call 3Q FY26

- The management noted that a delay in "two government orders" partly contributed to the guidance miss
- Likewise, Kaynes's EV segment struggled, owing to a 90% revenue drop at "one of the largest electric vehicle OEMs", where Kaynes was sole supplier.
- Notably, other EMS players we spoke to said they avoided business with this major E2W OEM due to disadvantageous terms offered.
- In all fairness, the above events were beyond Kaynes's immediate control; that said, in our view investors do expect guidance not to be susceptible to high-probability or high-visibility events—government delays are the norm, not the exception, and the E2W OEM had been under pressure for some time.
- Kaynes declined to provide FY27 guidance in its 4QFY26/1QFY27 earnings calls, offering instead directional guidance that the company will deliver double the industry growth.
- In our view, given order books are guided as non-cancellable and the management has superior visibility on moving parts across industries/verticals, guidance followed by execution would have helped reset investor perception favorably.

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions)

OSAT and HDI PCB-M forays are capital-intensive and demand execution discipline

Our view: We show, through industry-peer benchmarking, that OSAT is a capital-intensive business with single-digit or low-double-digit ROCEs. While Kaynes has progressed in its OSAT business, it will need to sustain this execution profile and keep capacity utilizations high to achieve/maintain profitability. We further argue that by choosing to go alone in PCB-M for HDI and high-layer boards, Kaynes has added execution risk.

OSAT – A path to technology leadership, but inherent economics require continuous execution excellence

- Gross investments of ~Rs33bn, of which Kaynes's effective share is Rs14.1bn (the remainder from Government subsidies), to be deployed by end-FY28.
- Key packages include legacy packages (QFN, TO), semi-advanced packages (BGA, Flip chip BGA), and advance packages (2D, 2.5D, 3D, and co-package optics).
- Target applications include power electronics for automotive, healthcare, industrial, etc.

Exhibit 118: Overview of Kaynes's OSAT facility and multiple offtake agreements/partnerships the company has announced



Source: Company, Emkay Research

- Kaynes has established relationships with multiple global customers and strategic partners to support the ramp-up of its OSAT business:
 - Alpha and Omega Semiconductor (AOS): Anchor customer with a 5-year offtake agreement covering >60% of Phase 1 OSAT capacity. Commercial production of IPMS Si-IGBT power modules (17 dies/package) at the Sanand facility is expected to ramp to ~1.5mn chips/day, providing meaningful demand visibility and supporting initial capacity utilization.
 - Infineon Technologies: Signed an MOU covering the assembly and testing of MEMS microphones and power semiconductor bare dies, providing a pathway into automotive and industrial semiconductor applications.
 - Fujitsu: Customer and technology engagement for power semiconductor modules, validating Kaynes's capabilities in power semiconductor packaging.

- Mitsui High-tec and AOI Electronics: Collaboration/JV discussions to leverage Japanese expertise in semiconductor backend manufacturing, advanced packaging technologies, and process know-how.
- SEALSQ: Strategic engagement to develop an India-based trusted semiconductor packaging ecosystem, with discussions covering secure chip assembly, packaging, and trusted supply chains.
- UST: Strategic investor (~10% CCPS stake; post-conversion ownership and commercial scope yet to be fully disclosed), strengthening the broader semiconductor ecosystem around Kaynes's OSAT initiative.

Exhibit 119: Study of other OSAT players globally; mid-size generalists are the benchmark for Kaynes Semicon

Company	Classification	Op rev	Gross margin	EBITDAM	NFA turns	DIO	DSO	DPO	ROCE
		\$ mn	%	%	x	days	days	days	%
Lingsen	Mid-sized generalists	174	10.0%	3.2%	1.6	38	97	29	-7.4%
Tong Hsing	Mid-sized generalists	361	39.2%	25.3%	0.9	87	69	47	5.3%
Greatek	Mid-sized generalists	524	37.8%	33.7%	1.4	31	99	34	11.2%
Winstek	Mid-sized generalists	145	41.0%	34.4%	0.9	24	83	22	11.0%
Unisem	Mid-sized generalists	420	59.9%	18.2%	0.8	144	44	85	3.7%
King Yuan	Memory specialists	1,092	57.3%	46.5%	0.5	28	77	22	10.4%
Powertech	Memory specialists	2,342	33.3%	27.1%	1.1	48	106	56	9.2%
Hana Micron	Memory specialists	1,112	24.1%	18.6%	1.4	77	62	46	8.7%
ChipMOS	Memory specialists	748	32.1%	25.0%	1.2	76	101	26	2.2%
ASE	Large-sized diversified	20,156	28.0%	17.8%	1.4	55	75	70	7.9%
Amkor	Large-sized diversified	6,710	23.6%	16.5%	1.6	31	73	65	7.6%
JCET	Large-sized diversified	5,339	24.2%	15.4%	1.3	47	58	100	4.5%
Tongfu	Large-sized diversified	3,759	24.6%	19.0%	1.0	75	70	126	4.8%
Huatian	Large-sized diversified	2,320	28.6%	19.7%	0.6	86	67	148	1.1%

Source: Emkay Research

- OSAT economics can be unforgiving, with low-double-digit or single-digit ROCEs, owing to high D&A expense (and consequently high capital reinvestment rates)
 - Equipment wears out fast and generally needs replacement in ~7-8 years, making the business highly capital-intensive.
 - High D&A expense (~10-15% of operating revenue) eats into otherwise healthy 25-40% GMs and 15-25% EBITDAMs (depending on technology).
 - Legacy packaging OSATs have had limited pricing power, owing to lower capital intensity and weaker technological entry barriers.
 - This dynamic is expected to continue, as the majority of OSAT growth is projected to be driven by advanced packaging.
- In our view, the risks in the OSAT business are from its inherent economics, and its reinvestment dynamics are not yet fully appreciated by the market.
- We build in Rs3.3bn revenue in FY27 with GM of 33% and EBITDAM of -10.7%, mainly due to operating deleverage in a high-fixed-cost business.
 - At 60% capacity utilization with 99.5% yield, Phase 1 of the OSAT business is expected to generate Rs13.6bn in revenue, 11.6% EBITDAM, and 34.7% GM in FY28E.

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions)

Exhibit 120: Our estimates for Kaynes's OSAT business – lucrative if all goes to plan and stays the course; OSAT is inherently a high-fixed-cost, high capital-intensive business, with historically low ROCEs, especially for non-advanced OSAT companies

Particulars (Rs mn)	FY28E	FY29E	FY30E	FY31E	FY32E	FY33E
Revenue	13,578	26,780	32,271	35,514	36,607	36,973
Scrap income from yield loss	0	0	1	1	1	1
PLI income	-	-	-	-	-	-
Total operating revenue	13,578	26,781	32,272	35,515	36,607	36,973
COGS	8,870	17,495	21,082	23,200	23,914	24,153
Gross profit	4,708	9,286	11,190	12,314	12,693	12,820
GM	34.7%	34.7%	34.7%	34.7%	34.7%	34.7%
Non-material opex: fixed	2,729	4,511	4,556	4,601	4,647	4,694
Non-material opex: variable	407	803	968	1,065	1,098	1,109
Total non-material cost	3,136	5,314	5,524	5,667	5,745	5,803
- allocated to employee benefit expense	1,780	2,988	3,072	3,134	3,173	3,204
- allocated to other expense	1,356	2,326	2,452	2,533	2,573	2,598
EBITDAM	1,572	3,972	5,666	6,648	6,948	7,017
EBITDA margin	11.6%	14.8%	17.6%	18.7%	19.0%	19.0%
D&A expense	840	1,174	1,563	1,706	1,940	2,196

Source: Emkay Research

HDI PCB-M

"We are attempting the largest scope in the PC board, especially in tune with the PCB requirements of the future, which are likely to be high-density multilayer flex boards and so on. So from that perspective, we have put together a capex for the first plant. Firstly, we will start with multilayer boards. We are attempting to do up to about 76 layer boards"

- J. Sampath, 2Q FY26 Kaynes earnings call

- Gross investments of ~Rs14bn, of which Kaynes's effective share is Rs4.9bn (the remainder from government subsidies), to be deployed by end-FY27.
- Capacity of 5mn sqm for multi-layer rigid and flex PCBs (up to 74L), HDI PCBs, and flexible PCBs, targeting advanced applications such as smartphones, aerospace, etc.
- COD has slipped from originally guided 4QFY26 (guidance until 3QFY25) to Apr-26 (until 2QFY26) to now sometime in 2HFY27
- Notably, Kaynes has not tied up with any technology partner for its PCB-M ambitions.
 - The company aims to achieve process parameters at the machinery manufacturer's premises and then trans-ship the entire setup.
 - Kaynes's approach differs from that of peers such as Syrma SGS (Shinhyup JV) or Amber (Shogini acquisition and Korea Circuits JV).
- Higher-layer PCBs require significantly greater expertise in precision manufacturing.
 - PCB-M is a process-intensive business—the technological edge comes from optimizing multiple variables to maximize yields (% of good boards produced); as the layers increase, so does the technological bar to keep yields high.
 - A 4-layer standard-tolerance board is relatively forgiving of plating variation - even a 30% variation in copper thickness across the panel can be accommodated
 - By contrast, a 30% plating variation in a 12-layer controlled-impedance board—with 100-micrometer traces, 10:1 aspect ratio vias, and +/- 7% impedance tolerance—creates mechanical reliability, impedance excursion, and thermal cycling failure risks; this directly results in lower yields and higher cost per good board.
- In our view, this execution risk could cause lower-for-longer yields in Kaynes's PCB-M; we reflect this in our model.
- We build first PCB-M revenue only from FY28, given the multiple missed deadlines and lack of a technology partner in a process-intensive business.
- We estimate PCB-M revenue of Rs3.9bn/Rs19.8bn by FY28E/FY33E, with GM of 21.4%/35.8% and EBITDAM of -46.1%/15.9%, at a yield level of 65%/95%.
 - We currently do not build in any margin uplift from CCL/Prepreg; given that Phase 1 of PCB-M is not yet operational we did not make further assumptions on the backward-integration leg of Kaynes's PCB-M project.

Exhibit 121: Study of industry peers in PCB-M; India has native PCB-M ability, but HDI capacity will take time to ramp up

Company Name	Country	Currency (mn)	Operating revenue	Gross margin	EBITDA margin	Op profit margin	Net fixed asset turns	Net WC turns	Core pre-tax ROIC	ROCE post tax	DIO	DSO	DPO	NWC days
Shogini Technoarts	India	Rs	3,907	38.6%	15.3%	13.3%	6.1	4.1	32.2%	29.4%	100.2	98.5	114.2	84.6
AT&S India	India	Rs	3,915	44.1%	-8.3%	-21.0%	1.8	8.2	-31.2%	-25.6%	93.1	67.9	75.3	85.7
Ascent Circuits	India	Rs	3,252	41.5%	19.0%	16.8%	3.0	3.1	25.6%	16.6%	124.7	97.2	89.4	132.5
Epitome Components	India	Rs	2,557	56.8%	13.2%	9.6%	3.2	2.3	12.8%	6.1%	200.9	86.6	29.6	257.8
Zhen Ding Technology	Taiwan	TWD	1,82,522	29.7%	17.6%	7.6%	1.3	6.6	8.5%	4.8%	55.8	62.8	66.9	51.8
Tripod Technology Corp.	Taiwan	TWD	73,399	31.7%	23.4%	17.6%	3.8	2.8	28.1%	15.3%	87.5	119.1	67.9	138.7
Compeq Manufacturing	Taiwan	TWD	75,996	26.1%	18.2%	10.7%	2.0	5.0	15.2%	11.1%	74.9	89.1	96.7	67.3
AT&S	Austria	EUR	1,590	33.1%	13.8%	-8.1%	0.5	7.7	-3.6%	-2.1%	50.0	84.2	104.6	29.6

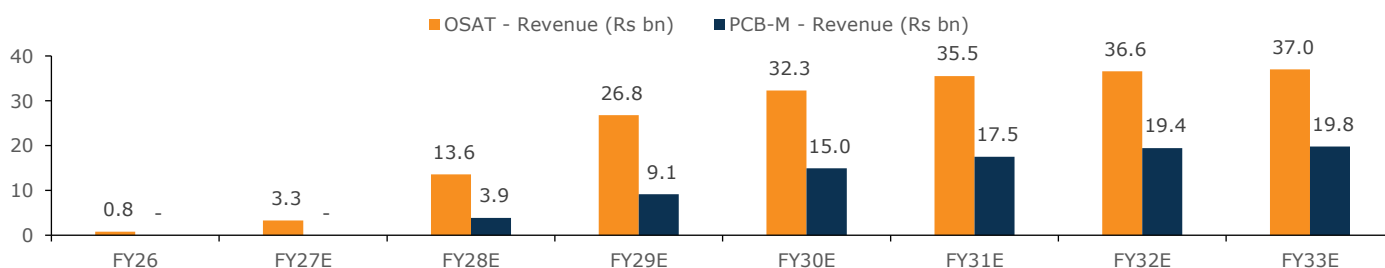
Source: Emkay Research

Exhibit 122: Our estimates for Kaynes's PCB-M; we conservatively build in first revenue from FY28E, given past misses in COD guidance

Particulars	FY28E	FY29E	FY30E	FY31E	FY32E	FY33E
Revenue	3,879	9,132	14,955	17,481	19,435	19,824
Scrap income from yield loss	204	297	257	148	100	102
PLI income	310	639	1,047	1,049	1,166	1,189
Total operating revenue	4,394	10,068	16,259	18,678	20,701	21,115
COGS	3,879	7,914	11,436	12,351	13,298	13,564
Gross profit	514	2,154	4,823	6,327	7,403	7,551
GM	11.7%	21.4%	29.7%	33.9%	35.8%	35.8%
Non-material opex: fixed	2,188	2,232	2,277	2,322	2,369	2,416
Non-material opex: variable	349	822	1,346	1,573	1,749	1,784
Total non-material cost	2,538	3,054	3,623	3,896	4,118	4,200
- allocated to employee benefit expense	1,435	1,627	1,837	1,944	2,033	2,074
- allocated to other expense	1,102	1,427	1,786	1,952	2,084	2,126
EBITDA	-2,024	-900	1,200	2,432	3,285	3,351
EBITDA margin	-46.1%	-8.9%	7.4%	13.0%	15.9%	15.9%
D&A expense	163	327	327	350	372	397

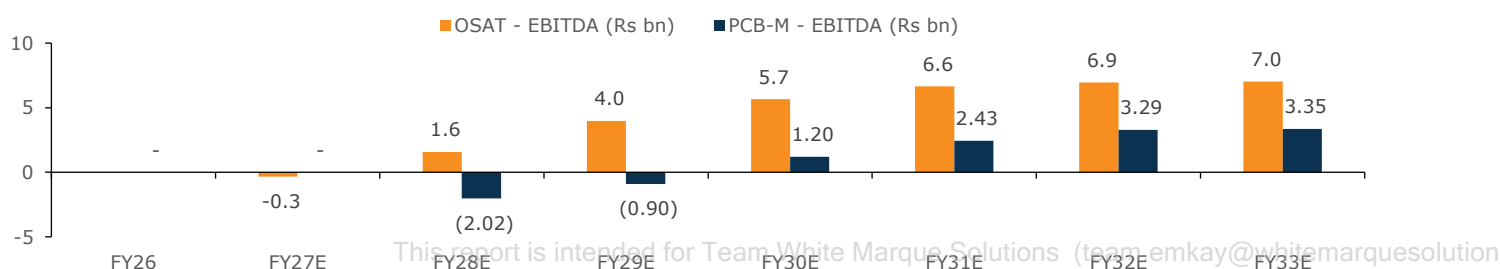
Source: Emkay Research

Exhibit 123: OSAT and PCB-M revenue profiles; if execution is smooth, they could collectively add as much revenue by FY29E as Kaynes generated in all of FY26



Source: Emkay research

Exhibit 124: OSAT and PCB-M EBITDA profile; consolidated margins to come under pressure, owing to operating deleverage in OSAT and yield losses in PCB-M during the ramp-up phase



Source: Emkay research

Financials: execution distractions

Our view: Kaynes is likely to take some time to piece together multiple elements of its strategy. We expect the company to grow core EMS revenue 27%/31% in FY27E/FY28E, complemented by revenue from the OSAT/PCB-M business, for total topline growth of ~33%/59% in FY27E/FY28E. Owing to the ramp-up in OSAT (high fixed cost) and PCB-M (low initial yields), we expect the company's EBITDA margin to compress 3pp/4.5pp in FY27E/FY28E from FY26 levels. Faster-than-expected resolution of the smart meter receivables situation and better-than-expected EMS growth are key upside risks to our estimates.

Details of financials

- We build in 37% revenue growth for Kaynes in FY27E, with core EMS growth slowing to 27%, offset by OSAT revenue.
- We expect the company's EMS portfolio to remain heavily reliant on EV + Industrials and Automotive, but OSAT and PCB-M to grow to ~32%/23% revenue share by FY29E/FY33E.
 - Barring further investments in OSAT and PCB-M, their revenue is expected to peak once capacity utilization and yields stabilize; after that, EMS is likely to grow faster.
- We expect near-term margins to come under pressure from the double ramp-up phases in the PCB-M and OSAT businesses.

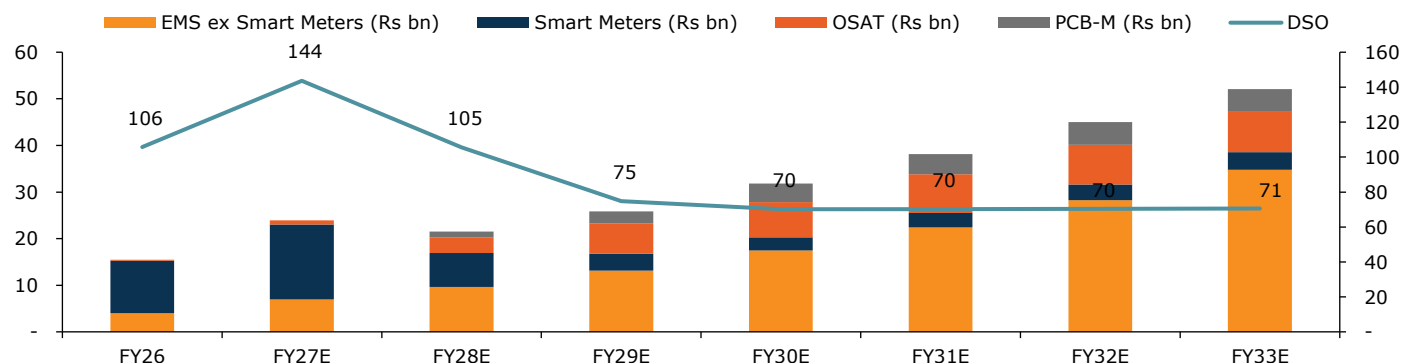
Exhibit 125: Margins in FY27E/FY28E to bear the brunt of the double ramp-up in OSAT and PCB-M

Headline P&L metrics	FY26	FY27E	FY28E	FY29E	FY30E	FY31E	FY32E	FY33E
Operating revenue	36,264	49,767	78,523	1,15,396	1,49,984	1,81,842	2,15,500	2,50,941
yoy growth	33%	37%	58%	47%	30%	21%	19%	16%
Gross profit	12,545	15,497	24,699	36,514	48,271	59,312	70,567	81,922
Gross margin	35%	31%	31%	32%	32%	33%	33%	33%
EBITDA	5,741	6,194	9,156	16,039	23,893	30,851	37,607	43,890
EBITDA margin	16%	12%	12%	14%	16%	17%	17%	17%
Operating profit	4,670	4,455	6,803	13,010	20,347	26,969	33,319	38,926
Operating profit margin	13%	9%	9%	11%	14%	15%	15%	16%

Source: Emkay Research

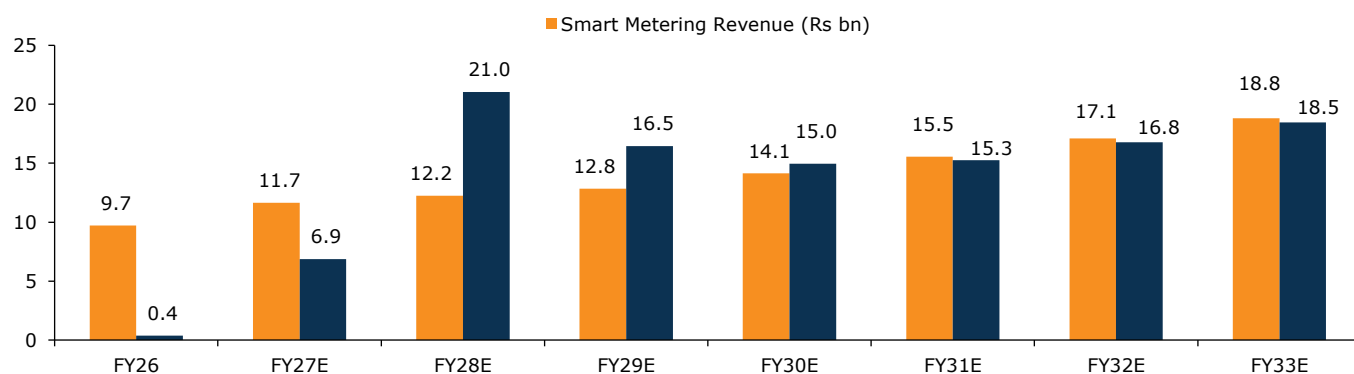
- We expect the company to draw down its bank balances (Rs6.9bn at end-FY26) to fund capex for FY27E (net Kaynes requirement of ~Rs7.9bn).
- We expect the company's net trade receivables to rise by Rs8.6bn in FY27E; we assume ~Rs6.8bn of cash collections of legacy receivables
 - We model DSO increasing from 106 to 147 in FY27E.
 - We also model Kaynes being able to finance the entirety of FY26 non-current receivables of Rs2.2bn in FY27E (only Rs1bn of the Rs3.2bn at end-FY25 was financed in FY26).
- We expect the company to require an additional Rs5.4 bn in short-term debt funding in FY27E, for which its drawing power is contingent on banks being willing to finance the PGCIL receivables.
 - This has proved to be a slow process for Kaynes—the original guidance of financing it by end-FY26 was not met.
- We model a Rs2.5bn reduction in receivables for Kaynes in FY28E, driven by completion of all Iskraemeco legacy contracts and progress on installations.

Exhibit 126: We expect Days Sales Outstanding (DSO) to normalize from FY28E, driven by collections and resolution of smart metering receivables



Source: Emkay Research

Exhibit 127: Our estimates on smart meter revenue and receivables collection; we take a cautious view on smart metering revenue growth, owing to industry-wide commentary on stretched working capital and difficulty in installations



Source: Emkay Research

- If all goes to plan, then post-tax ROCE could recover from 5-6% in FY27E/FY28E to ~20% by FY30E-FY33E.

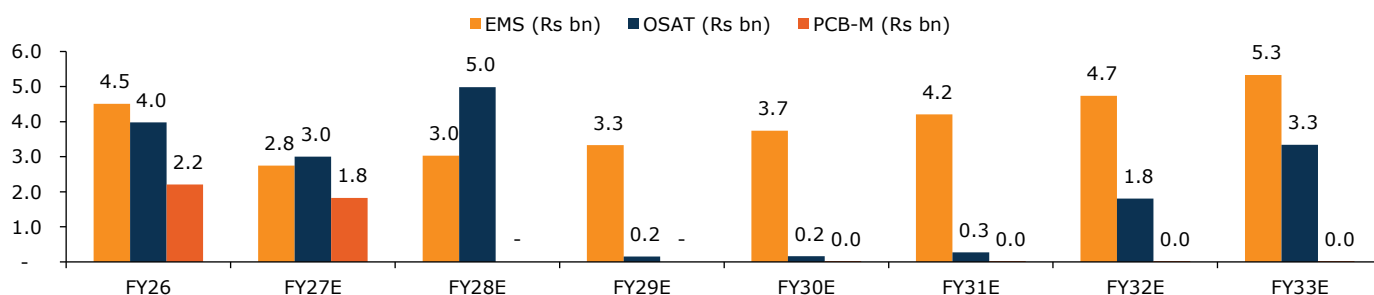
Exhibit 128: Return ratios to recover as operations begin to scale-up

	FY26	FY27E	FY28E	FY29E	FY30E	FY31E	FY32E	FY33E
DuPont analysis: ROE	7.6%	5.0%	7.1%	13.3%	18.3%	20.3%	20.5%	19.6%
DuPont analysis: ROCE (post-tax)	7.9%	5.6%	7.6%	12.7%	17.7%	20.1%	20.1%	19.3%

Source: Emkay Research

- Kaynes could become a cyclical stock, with both OSAT and revenue concentration in the Industrials and Automotive segments.

Exhibit 129: Our capex assumptions for Kaynes; OSAT replacement capex will begin to feature from FY32E, and we believe the OSAT capital reinvestment dynamic is not yet fully built in by the street



Source: Emkay research

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions.com)

Key risks

■ Upside risks:

- Changes in the smart metering business model; options include: 1) sale of Iskraemeco; 2) spin-off of the entity engaged in AMISP operations, with equity contribution from PGCIL or other AMISP-focused players; 3) tying up bank financing for receivables on an ongoing basis, with current receivables taken off balance sheet faster than anticipated.
- Faster-than-expected growth in the core EMS business; key catalysts include: 1) announcement of licensing agreements for the Kavach product; 2) announcement of tangible new product wins in the EV space, replacing weakness at the major customer; and 3) new unanticipated product wins.
- Faster-than-expected growth in OSAT; key catalysts include: 1) faster-than-expected announcement of ramped-up production at the OSAT facility; 2) tying up a new customer with a committed offtake agreement, similar to AOS.
- Announcement of commercial operations at the PCB-M facility.

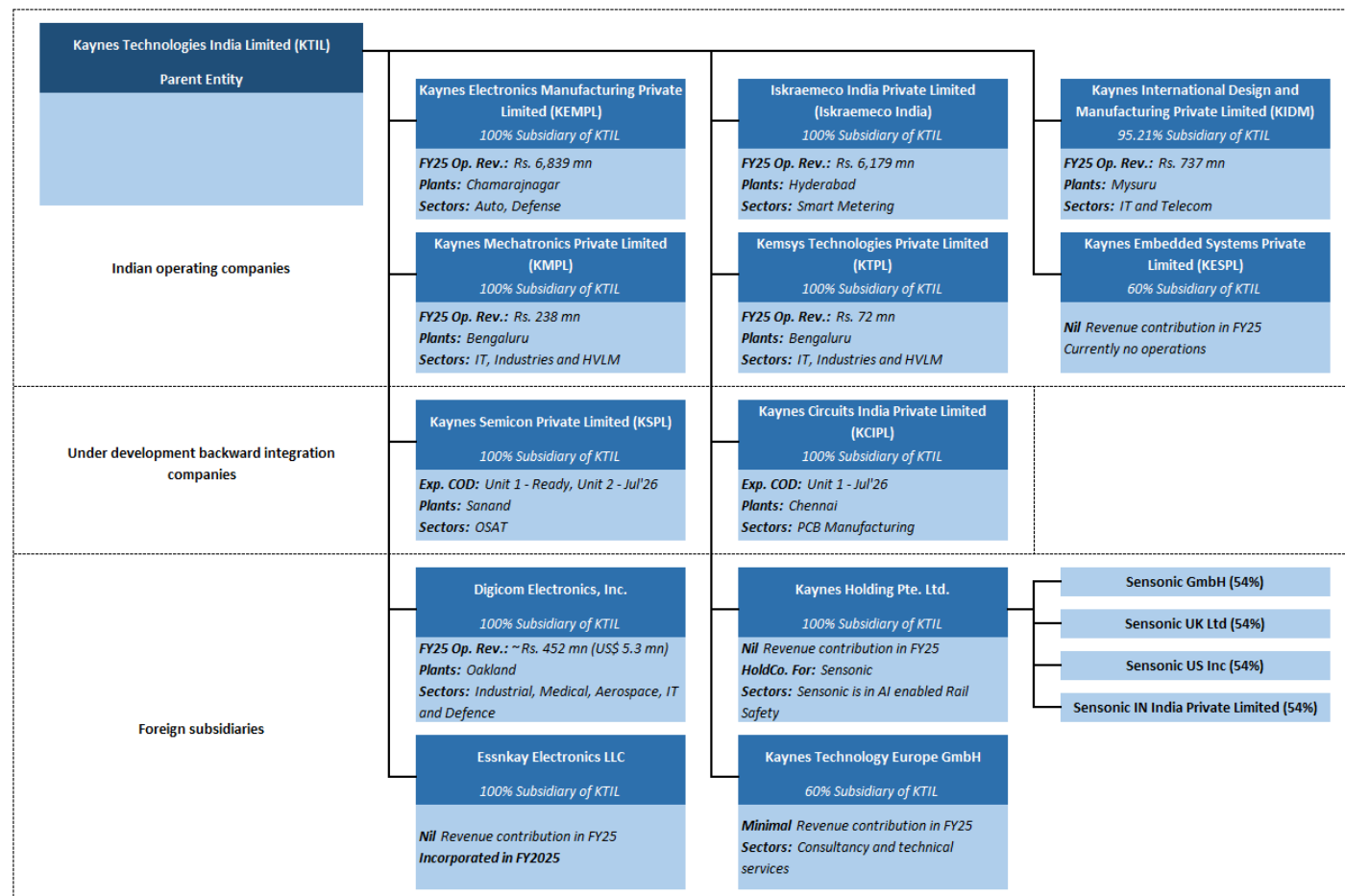
■ Downside risks:

- Sharper-than-expected build-up in smart meter receivables.
- Weaker-than-expected core EMS revenue.
- Further delays to commercial operations at the PCB-M facility.

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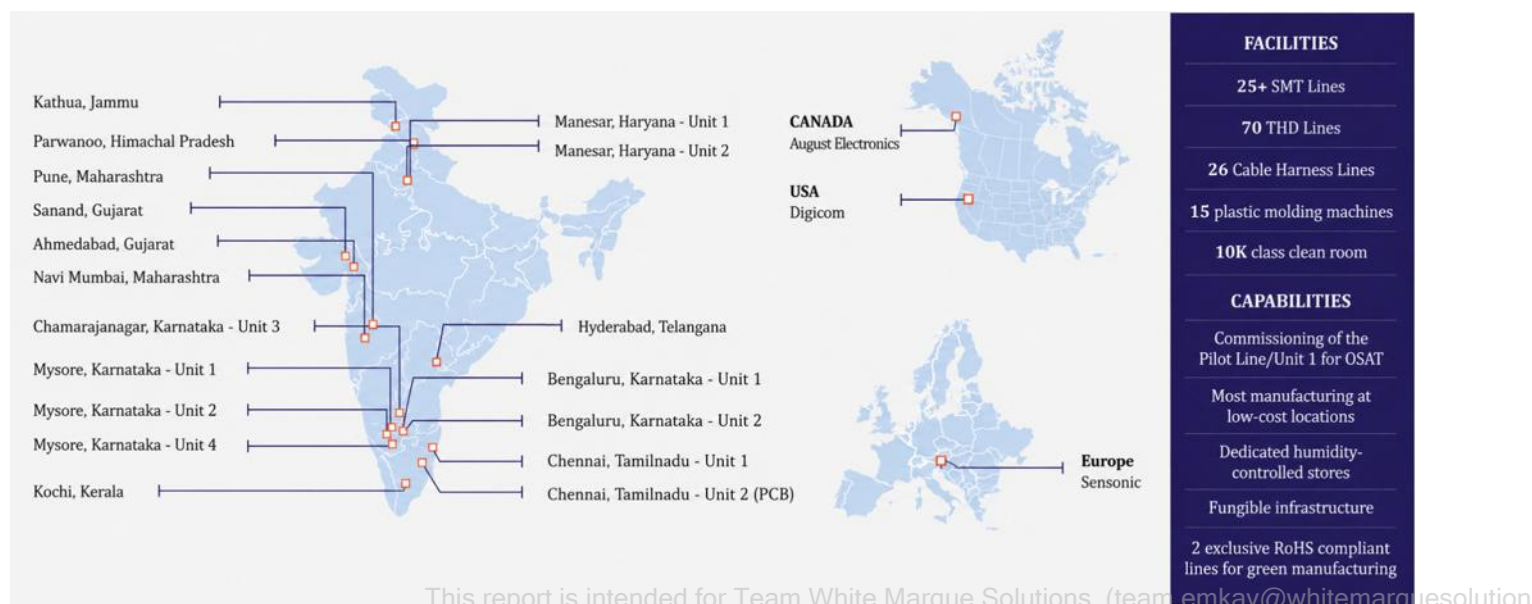
About the company

Exhibit 130: Kaynes Technology's corporate umbrella has been growing, led by the incorporation of new entities for new business ventures, as well as acquisitions both in India and abroad; the exhibit below does not show recent acquisitions of August Electronics, AeroCaliph, and Cryo Precision, or the minority stake purchase in Tranzmeo



Source: Company reports, Emkay Research

Exhibit 131: Kaynes Technology's India and global manufacturing presence



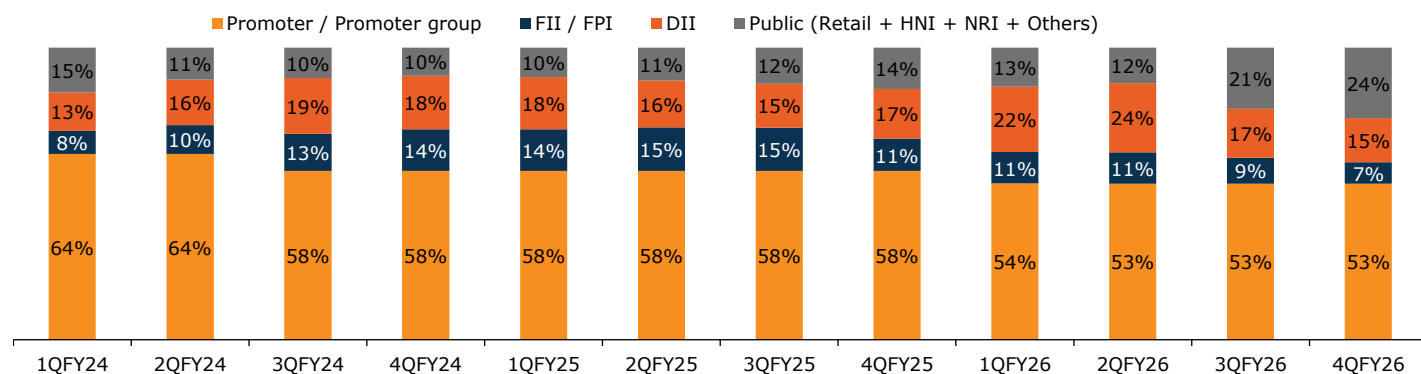
Source: Company reports

Exhibit 132: Brief overview of Kaynes Technology's leadership team

Name	Role & Appointment	Profile
Savitha Ramesh	Promoter and Chairperson Kaynes Technology India Limited With the company since 1996	BCom, University of Madras. Approximately 25 years of experience in the electronics manufacturing services industry. Co-promoter of Kaynes Technology.
Ramesh Kunhikannan	Executive Vice Chairman (Whole-time Director) Kaynes Technology India Limited Re-designated from MD: 24-Sep-25 Term: Until 31-Mar-29 With the company since incorporation	BE, National Institute of Engineering, Mysore. Founder of Kaynes Technology with 36+ years in strategic planning and business development in electronics manufacturing. Architect of Kaynes's EMS, OSAT, and PCB strategy. Director across all major Kaynes's subsidiaries including Kaynes Circuits, Kaynes Semicon, and Kaynes Electronics Manufacturing.
Dr Muthukumar Narayanaswamy	Managing Director Kaynes Technology India Limited Appointed: 24-Sep-25 Term: 24-Sep-25-23-Sep-30	MSc, Rubber Technology, Anna University. MBA, International Marketing, Thiagarajar School of Management. PhD, Operations Management, Annamalai University. 37 years in manufacturing, operations, and technology transformation across automotive and industrial sectors. President and COO/ED, Automotive Axles Limited/Meritor Heavy Vehicle Systems India (2008-Jun-24, 16 years). Earlier career at TTK-LIG, TVS Group, and Cummins Meritor.
Jairam Paravastu Sampath	Whole-time Director and CFO Kaynes Technology India Limited With Kaynes since 2011 Re-appointment approved: 13-May-26 New term from: 1-Apr-27 (5 years) Also: Director, Kaynes Space Tech	B Tech, Mechanical Engineering, IIT Madras. PGDM, IIM Ahmedabad. 30+ years across manufacturing, operations, finance, and sales. Vice President, TVS Electronics. VP and Head ICT Practices, Harita TVS Technologies. CMO, iPath Technologies. Joined Kaynes in 2011; leads finance and strategy functions. Absent from the 4QFY26 earnings call (May 2026) due to health.
Raghu Panicker	Chief Executive Officer Kaynes Semicon Private Limited (OSAT subsidiary) Appointed CEO: Oct-23 Also: VP, Business Strategy, Kaynes Technology India Limited	BE, Electronics and Communication. MBA, Marketing, PG Centre, Kolar. 33+ years in semiconductor and electronics industries. R&D Engineer, Semiconductor Complex Ltd/SCL (government fab), 1991-2001 (10 years). Country Manager India, Mentor Graphics/Siemens EDA, 2001-2021 (20 years). APAC Business Head, Tessolve Semiconductor (2-3 years). Joined Kaynes Semicon as CEO in October 2023.
Kumaran Subramaniam	Chief Executive Officer Kaynes Circuits India Private Limited (PCB manufacturing subsidiary)	Postgraduate diploma and bachelor's degree, University of Madras. 38 years of professional experience. Previous roles include CEO/Founder at Advallity Technologies, Managing Director South Asia and the Middle East at UROS, and CEO at RedCart Retail Private Ltd. Currently CEO, Kaynes Circuits India Private Limited.

Source: Company reports, Emkay research

Exhibit 133: Shareholding structure of Kaynes Technology



Source: Emkay research

This report is intended for Team White Marquee Solutions (team.emkay@whitemarquesolutions)

Kaynes Technology: Consolidated Financials and Valuations

Profit & Loss					
Y/E Mar (Rs mn)	FY25	FY26	FY27E	FY28E	FY29E
Revenue	27,218	36,264	49,767	78,523	115,396
Revenue growth (%)	50.8	33.2	37.2	57.8	47.0
EBITDA	4,107	5,741	6,194	9,156	16,039
EBITDA growth (%)	61.6	39.8	7.9	47.8	75.2
Depreciation & Amortization	447	1,071	1,739	2,352	3,029
EBIT	3,660	4,670	4,455	6,803	13,010
EBIT growth (%)	59.8	27.6	(4.6)	52.7	91.2
Other operating income	-	-	-	-	-
Other income	107	557	186	12	13
Financial expense	50	158	1,229	1,651	1,824
PBT	3,716	5,069	3,411	5,164	11,198
Extraordinary items	0	(26)	0	0	0
Taxes	782	1,404	853	1,291	2,800
Minority interest	2	0	0	0	0
Income from JV/Associates	-	-	-	-	-
Reported PAT	2,937	3,639	2,558	3,873	8,399
PAT growth (%)	60.0	23.9	(29.7)	51.4	116.9
Adjusted PAT	2,937	3,665	2,558	3,873	8,399
Diluted EPS (Rs)	45.5	54.8	37.9	57.3	124.3
Diluted EPS growth (%)	50.0	20.6	(31.0)	51.4	116.9
DPS (Rs)	0	0	0	0	0
Dividend payout (%)	0	0	0	0	0
EBITDA margin (%)	15.1	15.8	12.4	11.7	13.9
EBIT margin (%)	13.4	12.9	9.0	8.7	11.3
Effective tax rate (%)	21.0	27.7	25.0	25.0	25.0
NOPLAT (pre-IndAS)	2,890	3,376	3,341	5,102	9,757
Shares outstanding (mn)	65	67	68	68	68

Source: Company, Emkay Research

Cash flows					
Y/E Mar (Rs mn)	FY25	FY26	FY27E	FY28E	FY29E
PBT (ex-other income)	3,716	5,069	3,411	5,164	11,198
Others (non-cash items)	627	1,690	4,261	5,707	6,633
Taxes paid	(644)	(1,399)	(853)	(1,291)	(2,800)
Change in NWC	(4,522)	(11,859)	(8,663)	(1,285)	(7,227)
Operating cash flow	(823)	(6,499)	(1,844)	8,294	7,805
Capital expenditure	(9,316)	(11,037)	(7,949)	(8,012)	(3,482)
Acquisition of business	0	(431)	0	0	0
Interest & dividend income	-	-	-	-	-
Investing cash flow	(3,547)	(7,835)	208	(7,575)	(3,588)
Equity raised/(repaid)	23	16,011	75	0	0
Debt raised/(repaid)	5,694	(5)	5,180	(1,018)	872
Payment of lease liabilities	(64)	(80)	(131)	(174)	(194)
Interest paid	(1,076)	(1,223)	(1,531)	(1,812)	(1,802)
Dividend paid (incl tax)	-	-	-	-	-
Others	74	0	0	0	0
Financing cash flow	4,650	14,702	3,593	(3,004)	(1,124)
Net chg in Cash	280	368	1,957	(2,285)	3,093
OCF	(823)	(6,499)	(1,844)	8,294	7,805
Adj. OCF (w/o NWC chg.)	3,699	5,360	6,819	9,579	15,032
FCFF	(10,139)	(17,536)	(9,792)	282	4,322
FCFE	(11,122)	(18,668)	(11,202)	(1,338)	2,549
OCF/EBITDA (%)	(20.0)	(113.2)	(29.8)	90.6	48.7
FCFE/PAT (%)	(378.7)	(513.0)	(437.9)	(34.5)	30.4
FCFF/NOPLAT (%)	(350.9)	(519.4)	(293.1)	5.5	44.3

Source: Company, Emkay Research

Balance Sheet					
Y/E Mar (Rs mn)	FY25	FY26	FY27E	FY28E	FY29E
Share capital	641	670	676	676	676
Reserves & Surplus	27,762	47,382	50,010	53,882	62,281
Net worth	28,403	48,052	50,685	54,558	62,957
Minority interests	40	40	40	40	40
Non-current liab. & prov.	168	174	174	174	174
Total debt	8,755	8,749	13,929	12,911	13,783
Total liabilities & equity	37,640	57,394	65,370	68,366	77,636
Net tangible fixed assets	5,045	11,097	13,245	18,771	24,419
Net intangible assets	1,470	3,980	4,539	5,075	5,100
Net ROU assets	1,935	864	1,152	1,426	1,489
Capital WIP	3,913	5,107	8,278	8,427	3,623
Goodwill	141	161	161	161	161
Investments [JV/Associates]	1,475	2,746	1,004	1,126	1,279
Cash & equivalents	760	1,160	3,134	880	4,007
Current assets (ex-cash)	26,072	36,997	43,895	48,265	60,768
Current Liab. & Prov.	8,772	11,230	15,090	19,232	26,526
NWC (ex-cash)	17,300	25,767	28,806	29,033	34,241
Total assets	37,640	57,394	65,370	68,366	77,636
Net debt	7,994	7,589	10,795	12,031	9,776
Capital employed	37,640	57,394	65,370	68,366	77,636
Invested capital	23,815	40,845	46,589	52,879	63,761
BVPS (Rs)	439.8	719.0	750.0	807.3	931.6
Net Debt/Equity (x)	0.3	0.2	0.2	0.2	0.2
Net Debt/EBITDA (x)	1.9	1.3	1.7	1.3	0.6
Interest coverage (x)	74.2	32.9	3.7	4.1	7.1
RoCE (%)	11.6	11.1	7.6	10.3	18.1

Source: Company, Emkay Research

Valuations and key Ratios					
Y/E Mar	FY25	FY26	FY27E	FY28E	FY29E
P/E (x)	81.4	68.1	98.7	65.2	30.1
EV/CE(x)	6.6	4.5	4.1	3.9	3.4
P/B (x)	8.5	5.2	5.0	4.6	4.0
EV/Sales (x)	9.1	7.0	5.3	3.4	2.3
EV/EBITDA (x)	60.1	44.5	42.5	28.9	16.3
EV/EBIT(x)	67.5	54.7	59.1	38.9	20.2
EV/IC (x)	10.4	6.3	5.6	5.0	4.1
FCFF yield (%)	(4.1)	(6.9)	(3.7)	0.1	1.6
FCFE yield (%)	(4.4)	(7.5)	(4.5)	(0.5)	1.0
Dividend yield (%)	0	0	0	0	0
DuPont-RoE split					
Net profit margin (%)	10.8	10.1	5.1	4.9	7.3
Total asset turnover (x)	0.9	0.8	0.8	1.2	1.6
Assets/Equity (x)	1.2	1.2	1.2	1.2	1.2
RoE (%)	11.0	9.6	5.2	7.4	14.3
DuPont-RoIC					
NOPLAT margin (%)	10.6	9.3	6.7	6.5	8.5
IC turnover (x)	1.1	1.1	1.1	1.6	2.0
RoIC (%)	12.1	10.4	7.6	10.3	16.7
Operating metrics					
Core NWC days	232.0	259.4	211.3	135.0	108.3
Total NWC days	232.0	259.4	211.3	135.0	108.3
Fixed asset turnover	5.8	3.4	3.0	3.8	4.3
Opex-to-revenue (%)	15.1	18.8	18.7	19.8	17.7

Source: Company, Emkay Research

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ADD	5-15% upside
REDUCE	5% upside to 15% downside
SELL	>15% downside

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