India's Electronic Manufacturing Services (EMS) opportunity:

From assembly hub to integrated manufacturing powerhouse

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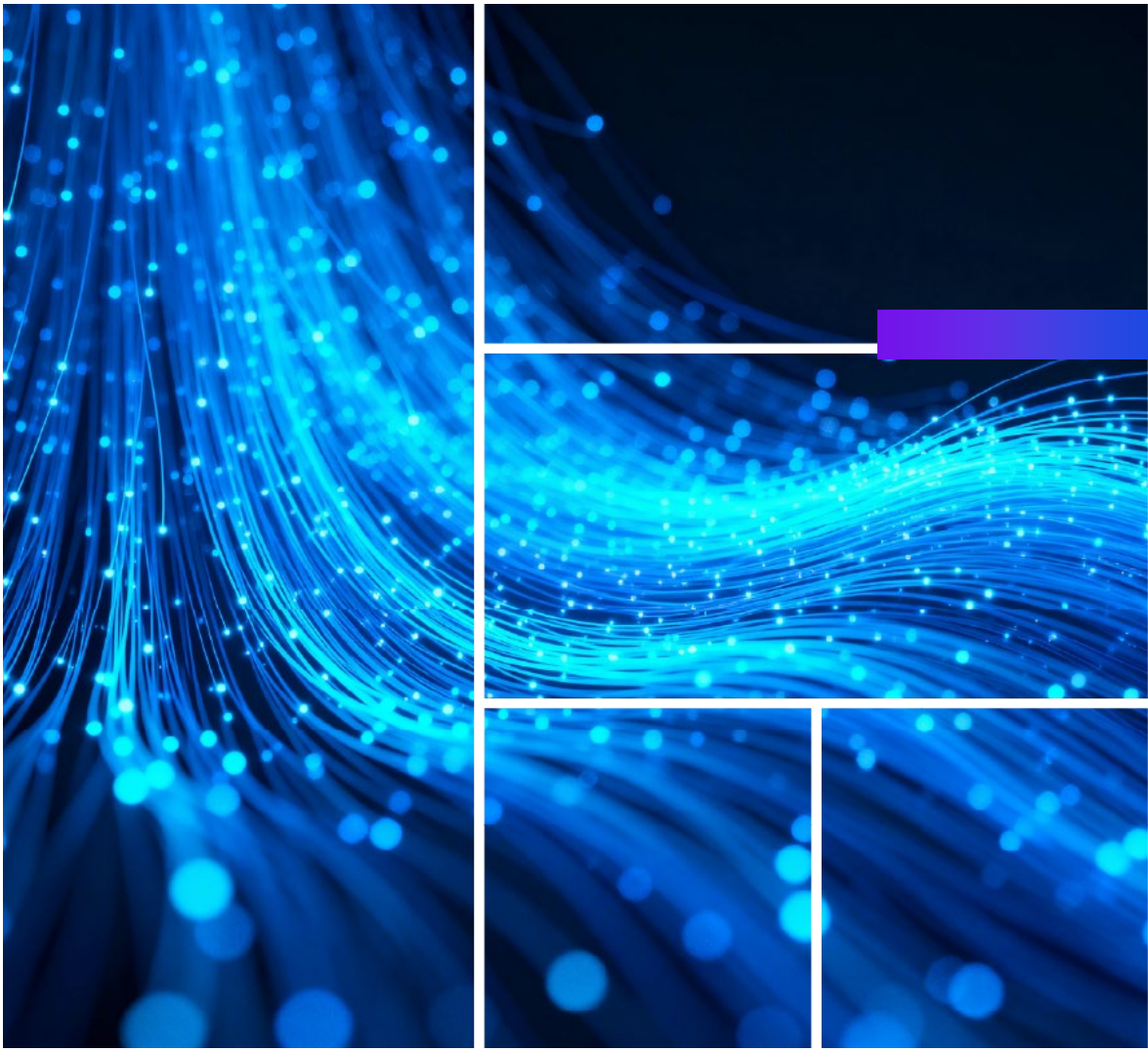
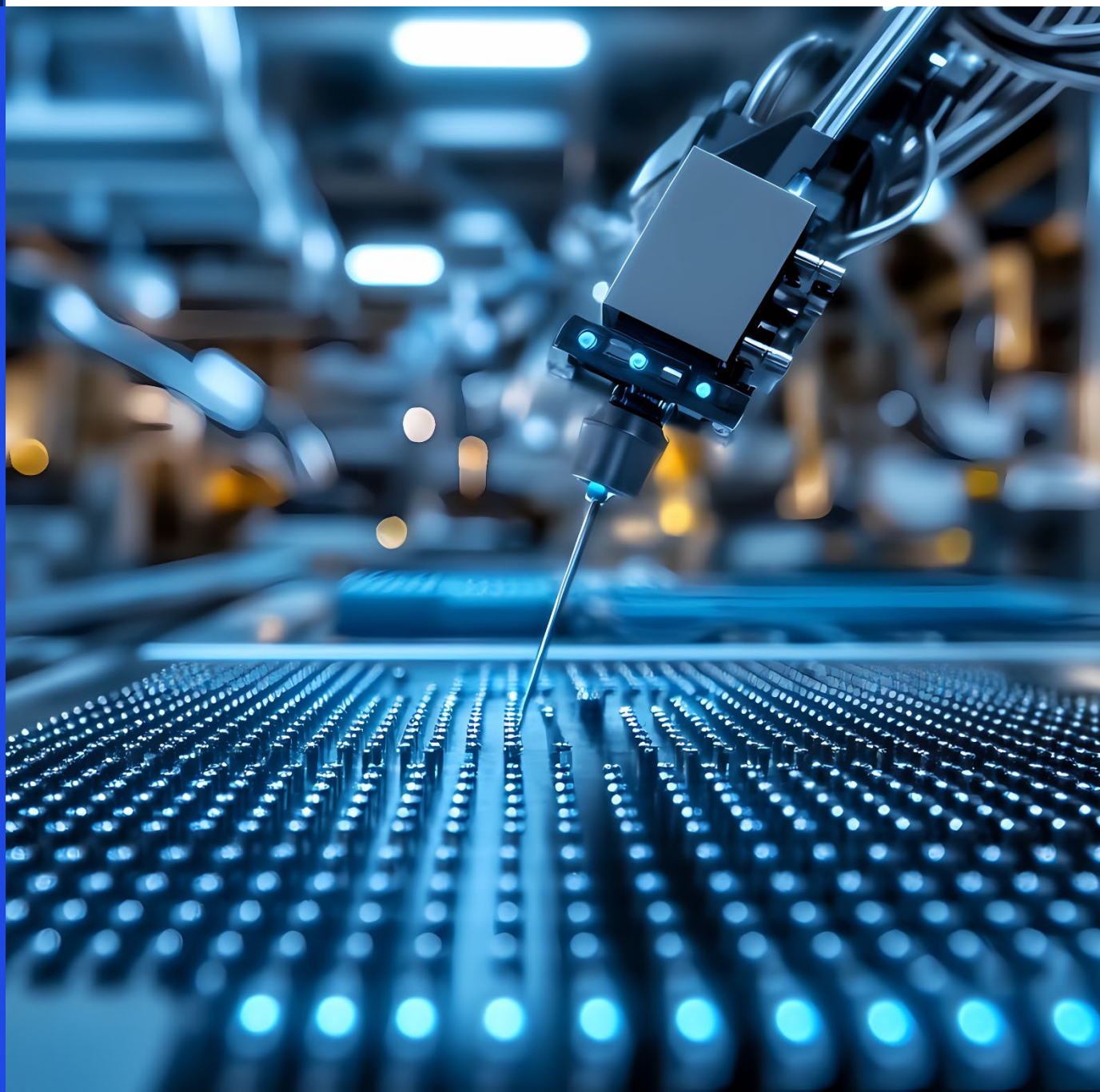


The global rewiring of electronics manufacturing



Global original equipment manufacturers (OEMs) are pivoting from China-centric supply chains toward resilience focused multi-node manufacturing networks

For three decades, the dominant logic of global electronics supply chains was clear: concentrate manufacturing where it is cheapest, leverage scale, and optimise for unit cost. China's established ecosystem—deep supplier networks, a large skilled workforce, and sustained infrastructure investment—positioned it as the leading global center for electronics manufacturing. By the early 2020s, China accounted for approximately 25-30 per cent[1] of global electronics manufacturing output, with electronic manufacturing services (EMS) and original design manufacturer (ODM) players embedded in a highly integrated industrial ecosystem.

However, the global manufacturing landscape is now undergoing a structural transformation. The traditional paradigm—where production was optimised purely for cost—has been replaced by a more complex framework.

Three structural forces are rewriting the playbook:

- **Geopolitical risk re-pricing**

  Heightened trade frictions between major economies, tighter controls on advanced technology flows, and the treatment of semiconductors as strategic assets have led global and Indian corporates and policymakers to reassess the risks of excessive supply-chain dependence on any single geography.

- **Resilience as a competitive asset**

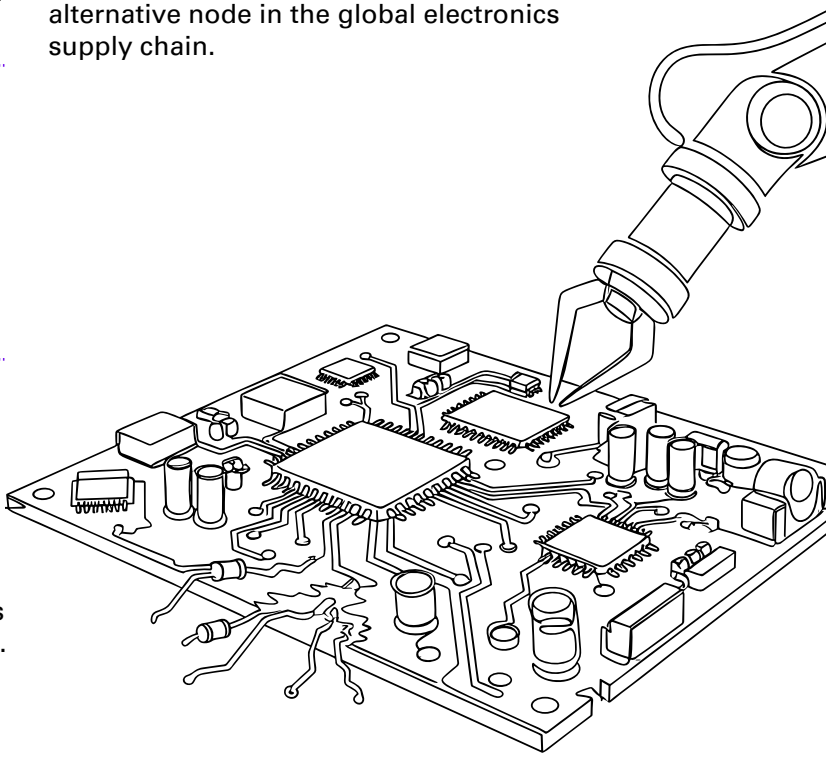
  COVID-19 exposed the fragility of just-in-time, single-source supply chains. The semiconductor shortage of 2021–22 cascaded across automotive, consumer electronics, and industrial sectors, costing the global economy billions in lost production. Resilience, through geographic diversification, redundant supplier qualification, and buffer inventory strategies, is now treated as a value driver, not a cost centre.

- **Regulatory pressure**

  Beyond commercial considerations, regulatory pressures, including the U.S. CHIPS and Science Act 2022, the EU Chips Act 2023, and India's production-linked incentive (PLI) schemes, are creating fiscal incentives for geographic diversification that reinforce commercial logic.

This has placed EMS providers at the centre of global manufacturing strategy. Rather than serving purely as contract manufacturers, EMS companies are increasingly functioning as strategic supply chain partners, enabling OEMs to build geographically diversified production networks.

For emerging manufacturing hubs such as India, this transformation presents a significant opportunity. The country's expanding manufacturing base, policy support, and growing domestic demand position it as a potential alternative node in the global electronics supply chain.



1. KPMG in India's 2026 analysis based on secondary research

Global EMS market to cross USD1 trillion by early 2030s, driven by rising connectivity, automation and outsourcing trends

The global EMS industry has expanded significantly over the past decade, driven by strong demand across multiple electronics segments, including consumer electronics, computing hardware, telecommunications infrastructure, and automotive electronics.

Recent industry reports estimate the global EMS market at approximately USD640–650 billion in 2025, with projections indicating continued expansion to over USD1 trillion by the early 2030s, representing a compound annual growth rate (CAGR) of roughly 6.5 – 7 per cent[2].

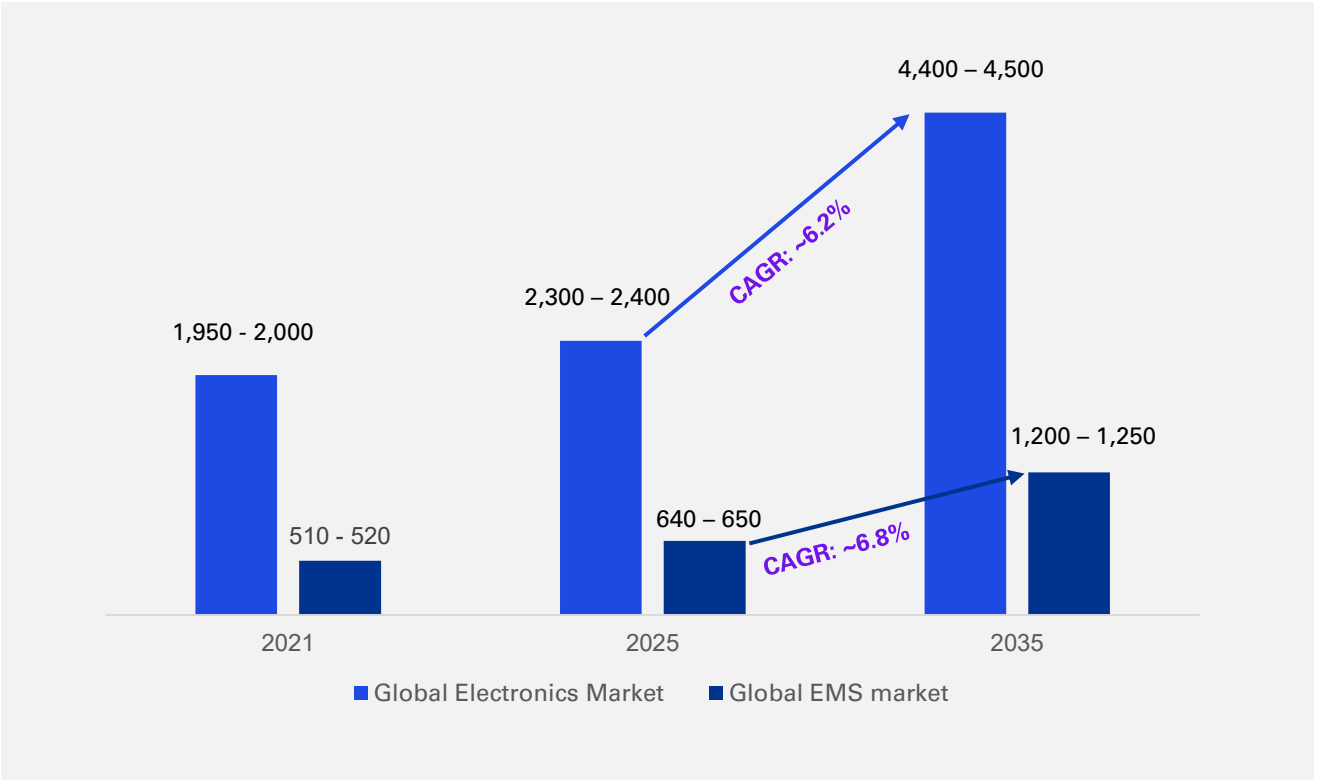
The growth is supported by three key megatrends and segment specific drivers:

Expansion of connected devices: The proliferation of connected devices—from smartphones and laptops to IoT-enabled industrial systems—continues to drive demand for electronics manufacturing capacity

Electrification and automation: The increasing electrification of industries such as automotive, energy, and manufacturing has significantly expanded demand for electronic components and systems

Outsourcing by OEMs: As electronics products become more complex and production cycles accelerate, OEMs are increasingly outsourcing manufacturing to EMS providers to maintain flexibility and reduce capital investment.

Figure 1: Global electronics manufacturing and EMS market (USD billion)[2]



2. KPMG in India's 2026 analysis based on secondary research

Figure 2: Segmental break-up of global EMS market[2]

Sn	ESDM application	Global market size CY25 (USD Bn)	Expected growth rate CY25-30	% of total market size (CY25)	Demand drivers	Key product families
1	**Consumer electronics**	261	6%	38% - 42%	• Higher internet penetration • Demand for better features	• Mobiles • TVs • LED lighting • Wearables • Laptops / Tablets
2	**Information and communications technology**	202	8%	29% - 33%	• Faster 5G roll-outs • Higher internet penetration • Increased OTT/ data consumption	• 5G radios • Wi-Fi APs • Routers/Switches • Servers
3	**Industrial (including automation)**	61	7%	8% - 12%	• Higher degree of process automation • Clean energy & building technology • Emergence of Industry 4.0	• Process control • Test & Measuring • Robotics • HMIs
4	**Automotive and transportation**	53	7%	5% - 10%	• Mega trends of EV, connected vehicles, autonomous vehicle leading to increase in Electronics content/ vehicle • Increased per capita vehicle penetration	• Infotainment units • Safety systems • ADAS systems
5	**Aerospace and defence**	25	7%	2% - 6%	• Defence modernisation and platform upgrades • Increased aircraft, UAV, and space procurements • Growth in surveillance and security systems	• Avionics systems • Radars and Sonars • Electronic warfare systems • Satellite communication equipment • Navigation and control systems
6	**Others (Healthcare, renewables etc.)**	42	5%	5% - 10%	• Demand for remote care facilities and rise in medical tourism • Net-zero emission targets set by governments; large-scale renewable deployments	• Invasive and non-invasive devices; health monitoring devices • Solar and wind inverters; power conversion systems
	Total	**645**				

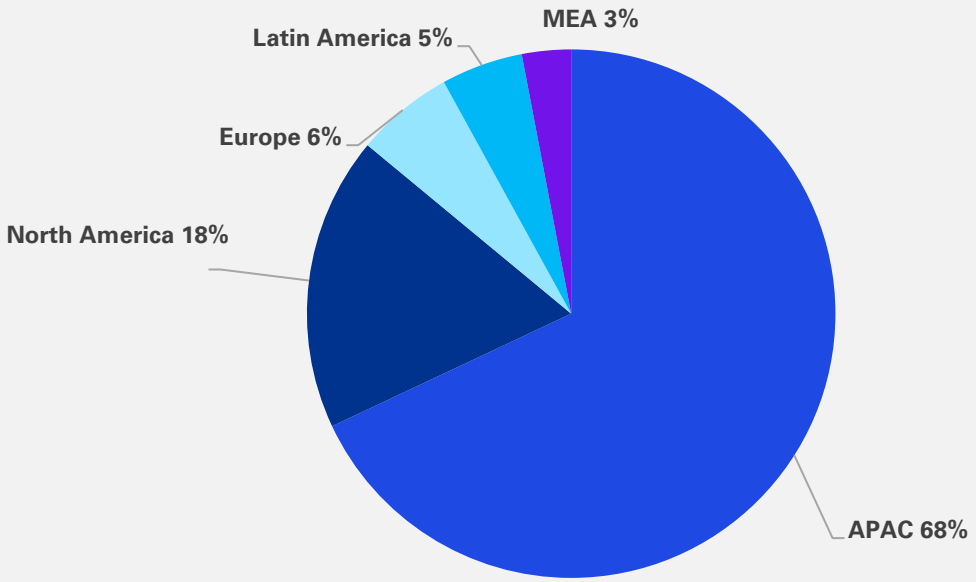
Note: ESDM - Electronics System Design and Manufacturing

2. KPMG in India's 2026 analysis based on secondary research

Asia remains the global EMS hub as 'China+1' re clusters manufacturing into a few scaled locations

The APAC region accounts for more than half of the global EMS market due to the presence of large manufacturing clusters, integrated component ecosystems, and export-oriented infrastructure. Outside China, manufacturing activity is concentrated in a handful of Asian countries namely India, Malaysia, Thailand and Vietnam. Mexico is also emerging as a strong alternative in the West on account of its proximity to the U.S. market. These global hubs have captured majority of the near-term relocation volumes benefiting from China + 1 strategy — particularly in labour-intensive consumer electronics and auto-adjacent manufacturing.

Figure 3: Global EMS market by region – 2025[2]



2. KPMG in India's 2026 analysis based on secondary research

India is one of the fastest growing electronics export markets, rapidly closing the scale gap with its peers

Figure 4: Comparison of key EMS markets[3]

Country	Key strengths	Key limitations	Share of global electronics exports 2021 (%)	Share of global electronics exports 2024 (%)	Electronics Export CAGR (2021-24)
China	Full-stack electronics ecosystem, dense supplier networks, deep engineering and certification capacity	Rising labour and compliance costs, export controls and geopolitics, and 'China + 1' re-allocation risk	45%	42%	0.2%
Vietnam	Deep smartphone OEM/ODM base, strong foreign direct investment (FDI) linkages to China supply chains, competitive labour costs, and improving logistics parks	Limited domestic demand; infrastructure constraints at scale, limited component depth outside select clusters	3.9%	4%	2.9%
Malaysia	Trusted hub for semiconductors back-end, test and measurement, high process quality, IP/certification maturity, and stable policy environment	Labour availability and cost pressure	3%	3.4%	5.7%
Mexico	Proximity to U.S., USMCA (United States–Mexico–Canada Agreement) advantage, and strong auto and industrial EMS base	Labour cost rising, capability gaps in high-complexity consumer electronics, and regional security/logistics variability	2.6%	3%	7.5%
Thailand	Established hard disk drives (HDD) and auto electronics base	Niche concentration, and limited EMS scale-up potential	1.2%	1.4%	8.4%
India	Scale of domestic market, policy support, talent depth, and geopolitical tailwinds	Component ecosystem gaps, logistics friction, and quality maturity	0.6%	1.1%	28.7%

Global OEMs are restructuring supply chains around resilience, geopolitics, and multi-node manufacturing. EMS providers are central to this shift. India's opportunity is not just cost-based — it is geopolitical and strategic.

3. KPMG in India's 2026 analysis based on secondary research and Trademap data accessed on 17 March 2026 for HS code 85

India's EMS opportunity: Scale built, depth pending

EMS is not a uniform-margin industry - Value pools vary dramatically by complexity, integration depth, and IP ownership

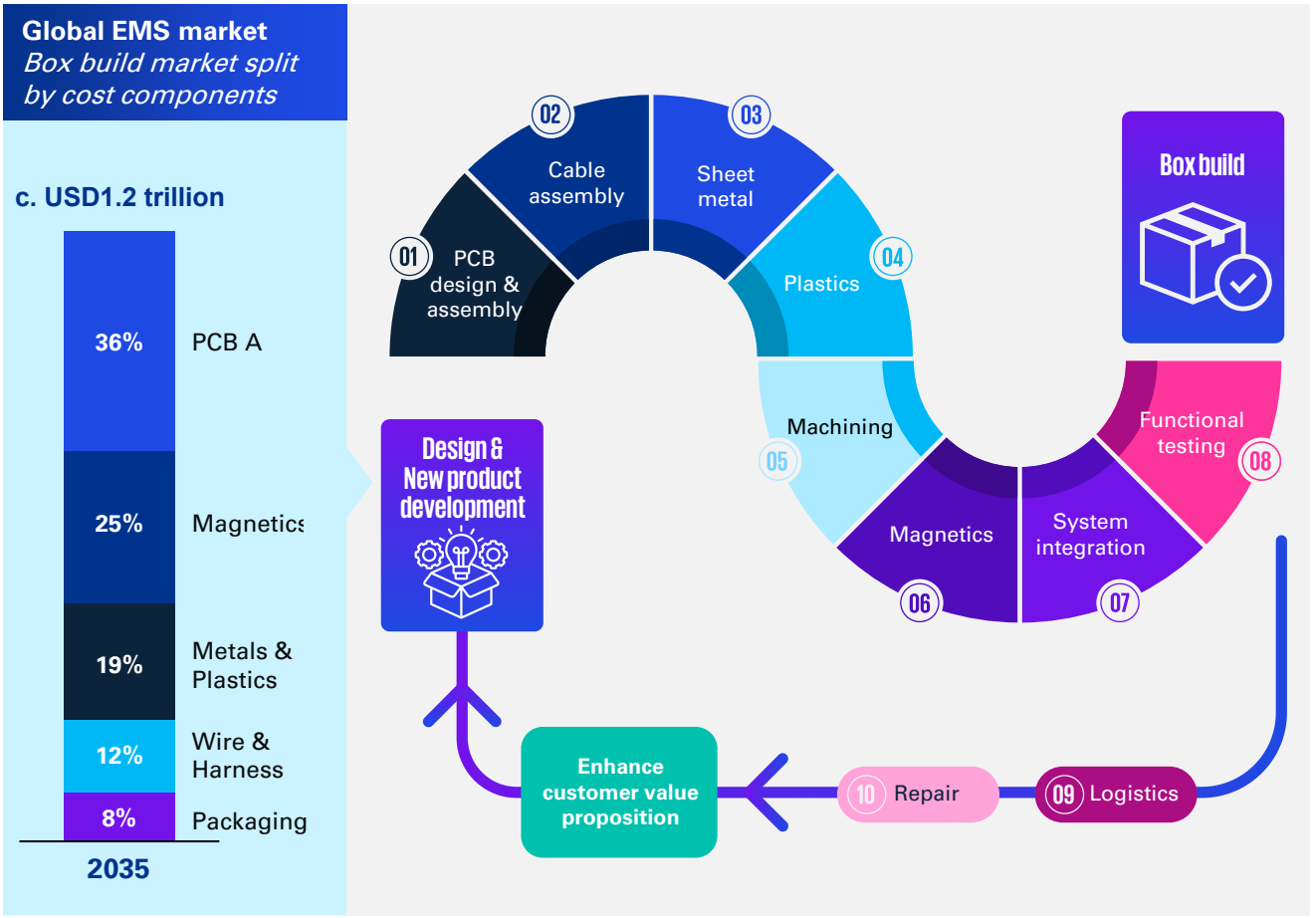
The EMS industry is often perceived as a high-volume manufacturing business driven primarily by scale. While scale remains important, the reality is that value creation within the EMS industry varies significantly across different levels of the manufacturing value chain.

At one end of the spectrum lies basic printed circuit board (PCB) assembly, where companies perform standardised manufacturing tasks with relatively thin margins and high competition. At the other end lies design-integrated manufacturing, where EMS providers combine engineering capabilities with production services, enabling them to capture significantly higher margins and strategic positioning.

The ability of EMS companies to move up this value curve has been a defining factor in the evolution of the global industry. Leading global EMS players have steadily expanded beyond contract manufacturing to offer design support, engineering services, and product development capabilities.

The global EMS industry encompasses a wide spectrum of service models, from simple board-level assembly to full design ownership and product lifecycle management. Understanding this spectrum is essential to appreciating where India sits today — and where the strategic prize lies.

Figure 5: Components of EMS value chain[4]



4. KPMG in India's 2026 analysis based on secondary research

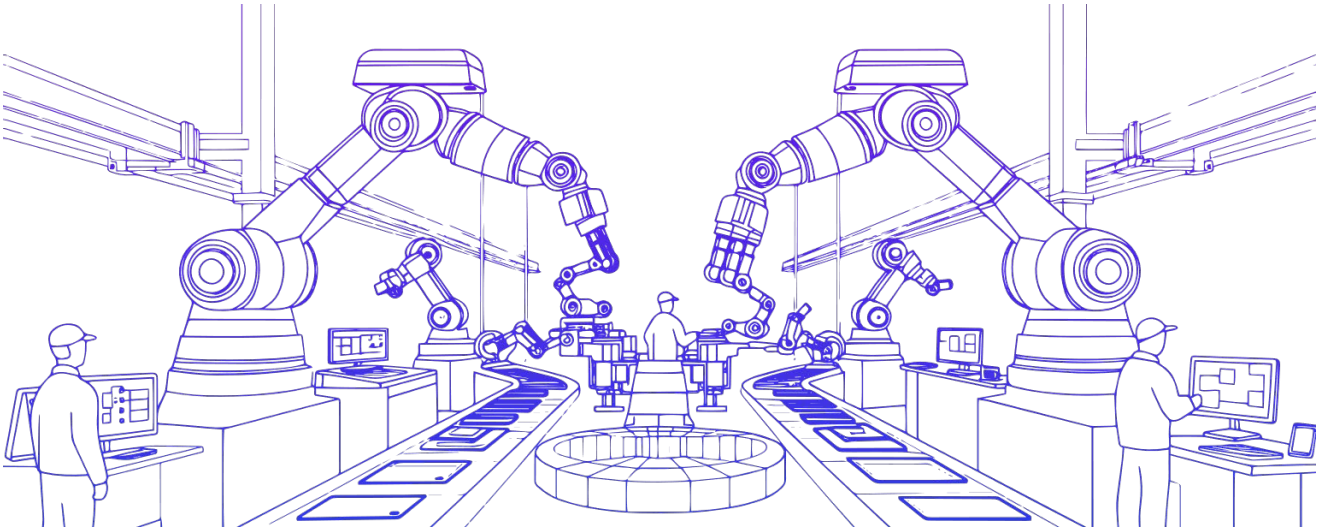
Figure 6: Comparison of various EMS business[5] models

Service model	Description	Typical EBITDA margin	Capital intensity	IP ownership
PCB assembly (PCBA)	Bare board population: limited value-add	2–4%	Low	Nil
Box-build/system assembly	Sub-assembly + final integration + testing	4–7%	Medium	Low
Consignment/full-turnkey	OEM provides design; EMS procures and builds	5–8%	Medium	Low
ODM (original design manufacturer)	EMS designs product to OEM specifications	8–12%	High	Partial
JDM (joint design manufacturer)	Co-development with OEM	10–15%	High	Shared
Design-led/IP-owning EMS	Full product ownership and lifecycle management	15–20%+	Very high	Full

India's domestic EMS market has scaled to ~USD45 billion[5], powered by PLI driven infrastructure expansion and global leadership in mobile phone assembly

India's electronics growth since 2019 represents one of the most rapid capacities build-outs in the sector's modern history. The PLI scheme for large-scale electronics and IT hardware has been the primary catalyst, attracting both domestic conglomerates and global EMS players to scale manufacturing operations.

India's EMS market has expanded from USD10-12 billion[5] in FY20 to USD40-45 billion[5] in FY25, driven by domestic demand, export growth and outsourcing trend. FY21–25 saw 5x growth in mobiles alone, with total electronics production crossing USD130 billion[6]. Despite strong growth, India's share of global EMS manufacturing remains relatively modest at 5 – 6 per cent[5]. However, this is set to expand over the coming decade as manufacturing investments accelerate, and export capacity expands.



5. KPMG in India's 2026 analysis based on secondary research
6. India's Electronics Leap - Production soars to ₹11.3 lakh crore in 2024–25, six-fold over the decade – PIB Headquarters press release dated 11 October 2025

Figure 7: Indian electronics sector over last 5 years (USD billion)[7]

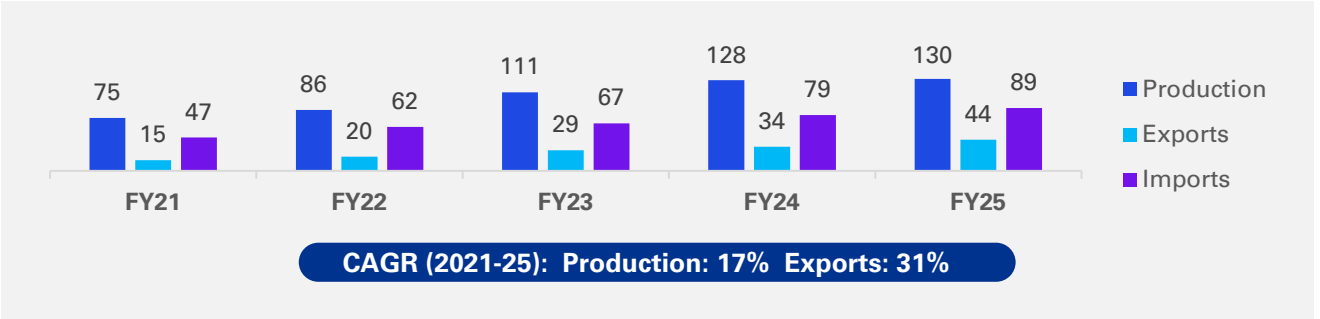


Figure 8: Indian electronics production (FY25): Key sub-segments[7]

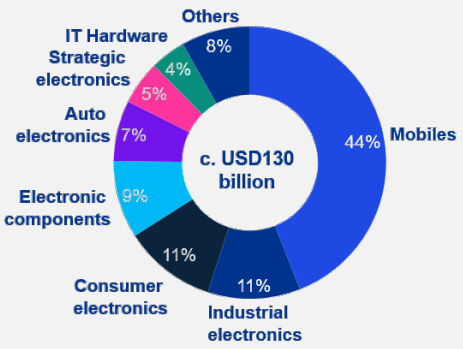


Figure 9: Comparison of export growth of key electronics categories[8]

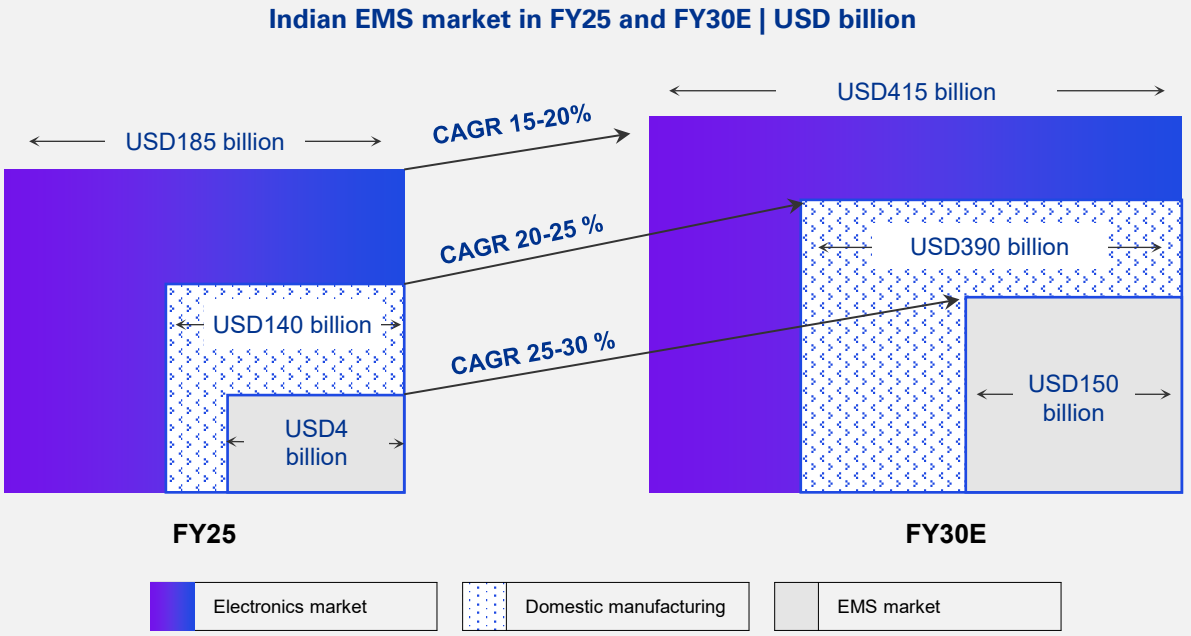
Product Category	Exports (2024)	CAGR (21-24)	% Global share 2021	% Global share 2024	Exports (2024)	CAGR (21-24)	% Global share 2021	% Global share 2024
Mobile phones	215	(6%)	40	37	22	51%	1	3.8
Power converters	46	5%	31	29	3	12%	1.7	1.9
Electric cables	31	2%	19	18	2	20%	0.8	1.3
Semiconductors	48	(0.4%)	33	33	1.8	101%	0.1	1.2
Electric motor parts	8	(1%)	32	30	1.3	17%	3.3	5.1
Circuit switches	22	(0.7%)	19	18	1.3	10%	0.8	1
Switchgear parts	6	3%	12	13	1.2	15%	1.9	2.9
Laptops/tablets etc.	205	(8%)	46	30	1.0	66%	0.1	0.2

High >5%	Moderate 0-5%	Low <0%

7. KPMG in India's 2026 analysis based on Ministry of Electronics and Information Technology Annual Report for FY2024-25, PIB and DGFT export-import data bank
8. KPMG in India's 2026 analysis based on Trademap data accessed on 17 March 2026

India's EMS market set to cross ~USD150 billion by FY30[9], growing at >25 per cent CAGR, fueled by surging demand, robust policy incentives, and global supply chain realignment

Figure 10: Indian EMS market growth and drivers[9]



Growth drivers in the Indian EMS market

Rising electronic content:
Increasing digitisation in consumer durables, automotive, telecom, and industrial applications

Government incentives and regulatory push[10]:
USD8 billion+ outlay under PLI, SPECS, Semicon India, EMC 2.0, and Design Linked Incentive schemes

Make in India:
Strong policy push for domestic value addition and import substitution and reopening of PLI for white goods and expansion of component manufacturing schemes

China + 1 strategy:
Global OEMs diversifying supply chains away from China; India emerging as a preferred EMS hub due to cost competitiveness and policy support

Exports the next frontier[11]:
Electronics exports grew at ~127 times between FY15-FY25; Domestic EMS players expanding global footprint

Expanding design and R&D capabilities[12]:
India is home to the R&D operations for c. 80% of the world's semiconductor design companies; EMS players scaling ODM capabilities in lighting, appliances, and telecom.

Note: SPECS: Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors; EMC: Electronics manufacturing clusters

9. KPMG in India's 2026 analysis based on secondary research
10. KPMG in India's 2026 analysis based on policy documents, PIB press releases and secondary research
11. India's Manufacturing Momentum: Performance and Policy - PIB Headquarters press release dated 19 September 2025
12. Inside India's Booming Semiconductor R&D Services Sector - BISinfotech news article dated 22 July 2025

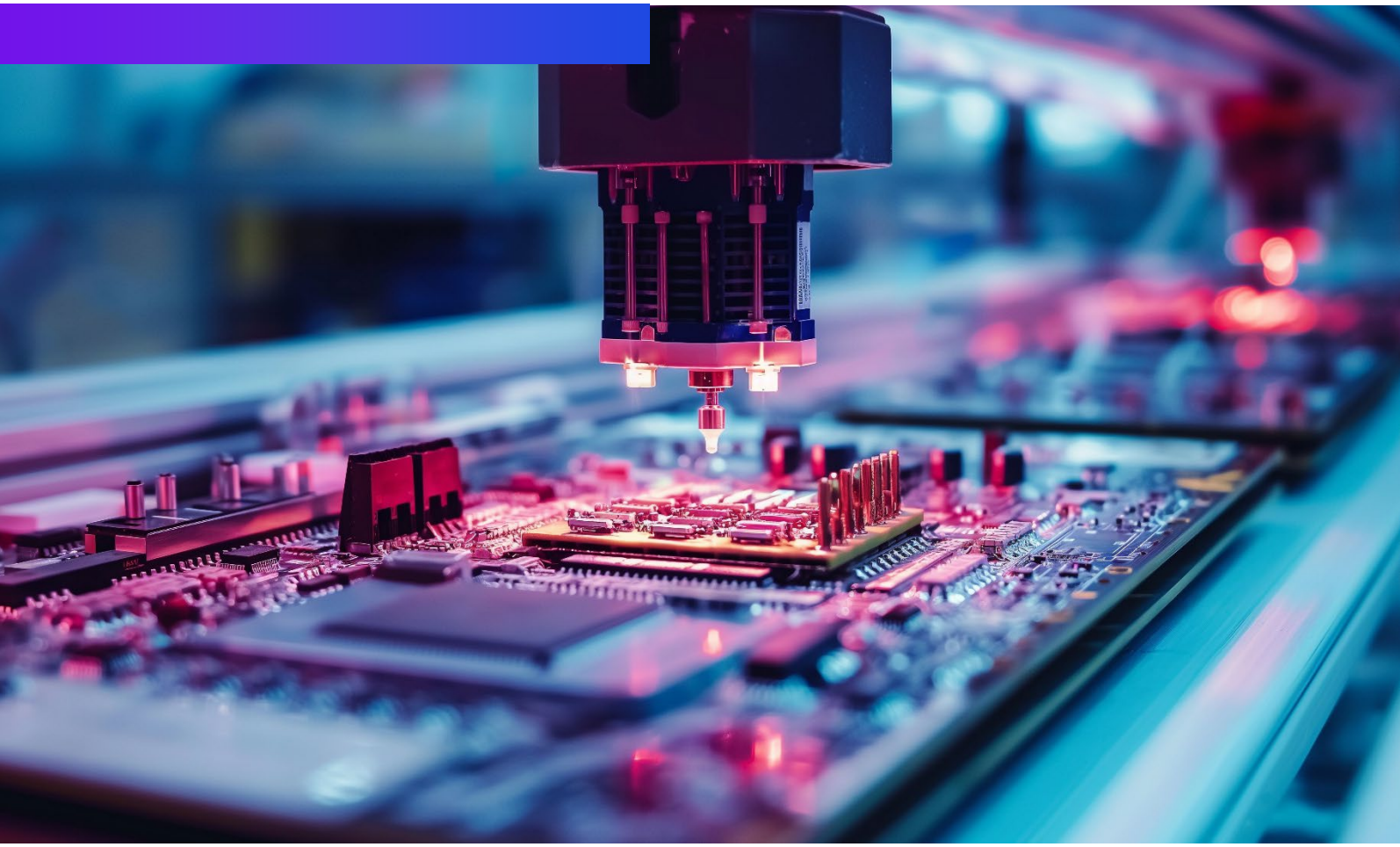
India’s EMS is mobile assembly led today; higher complexity segments are just taking shape

India's EMS base is heavily concentrated in mobile and consumer electronics, reflecting the PLI traction in smartphones. Diversification into higher-complexity segments — automotive electronics, industrial, telecom infrastructure — is underway but nascent.

Currently, India's EMS players are predominantly operating in the lower half of the value architecture — PCBA and basic box-build. This ‘scale without depth’ paradox stems from India's historical focus on services over hardware manufacturing, compounded by ecosystem immaturity. Unlike China or Taiwan, where vertical integration spans raw materials to modules, PLI schemes have catalysed entry, but sustaining 25 per cent + growth[9] demands localisation to mitigate forex risks, import duties on components, and supply volatility.

The evolution of global EMS leaders offers important lessons for India, where companies began as pure assembly operations and progressively built design, new product introduction (NPI), and systems integration capabilities. Meaningful pockets of higher-value capability are emerging in the Indian EMS sector with domestic EMS majors expanding ODM and JDM capabilities in select product segments.

The upgrade from assembly to integration is not primarily a capital investment decision — it is an organisational capability decision. It requires engineering depth, supply chain management sophistication, and the ability to manage OEM relationships at the design stage.



9. KPMG in India’s 2026 analysis based on secondary research

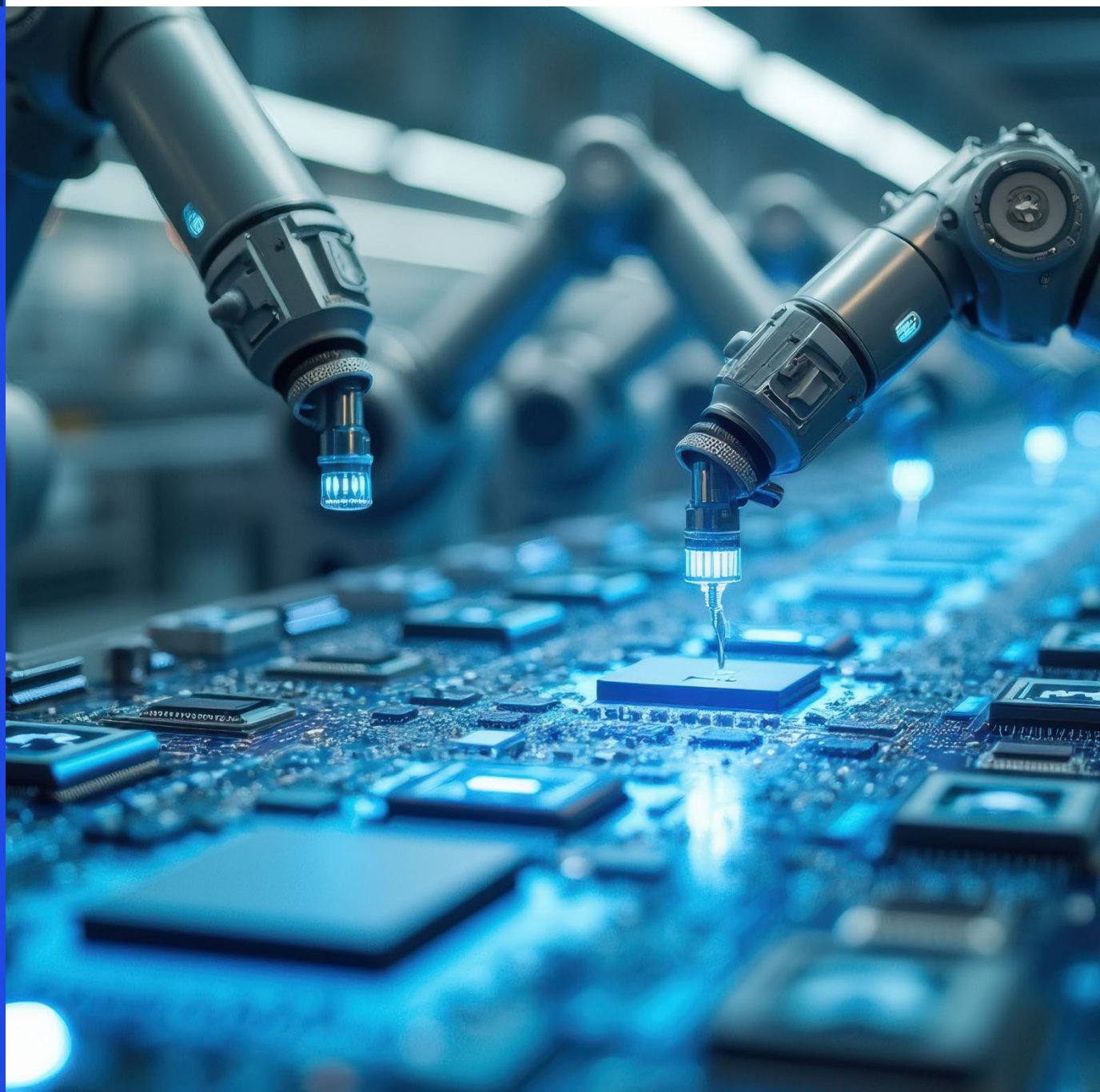
Figure 11: Depth of India's presence across value chain[13]

Segment	Products (examples)	Final assembly/sub-assembly	Component manufacturing	Design
Mobile	Smartphones	High • Large-scale assembly in place • Achieved ~99% local smartphone production[14] • Sharp surge in exports since FY23 • EMS footprint at scale	Medium • Select sub-assemblies localised (battery pack, chargers, some camera/display modules) • Multiple active components are imported	Low–Medium • Product design led by OEMs • Growing validation/certification capability among Indian EMS/ODMs
Consumer electronics	TVs	High • Multiple EMS players assemble TVs locally • Large panels and displays remain the key imported sub-assembly	Medium • Open-cell (~60–70% of LED TV cost)[15], panels, key ICs and optics are imported • Mechanicals and cabinets are localised	Low–Medium • Limited platform design capabilities • Growing compliance/certification capability and firmware customisation
	Air conditioners	Medium–High • Final assembly is present • Compressors and some heating, ventilation, and air conditioning (HVAC) components imported	Medium • Through-hole/electromechanical parts and harnesses localised • Key components (compressors, advanced controls) remain highly import-dependent	Low–Medium • A few home-grown brands have embedded design/engineering capability
	Refrigerators	Medium–High • Assembly and sub-assembly widespread • Displays/controls are one of the largest electronics content areas	Medium • Sheet metal, foam, mechanicals are localized • Advanced controllers/sensors more import dependent	Low–Medium • Select OEMs have in-house design for controllers/ firmware
IT hardware	Laptops, AIOs, servers	Medium • Assembly capability present and expanding under PLI 2.0, though still ramping from a low base (2024–25)[16]	Low–Medium • Boards, power supply units (PSUs), memory, storage and many ICs are largely imported • Localisation incentives in place	Low • Limited presence of original design • Few server/edge designs with Indian firms in partnership.
Telecom and networking	4G/5G: CU/DU, RAN, CPE, routers, switches	Medium • Manufacturing under DoT-PLI has scaled • FY25 exports rose sharply[17] • Indigenous 4G stack upgradable to 5G announced[17] • >40% of total imports are from China[18]	Low–Medium • Radio frequency (RF) components, advanced application-specific integrated circuits (ASICs) and optics substantially imported • Growing PCBAs, enclosures and customer premises equipment (CPE) localisation	Low–Medium • Ongoing design-led PLI with premiums • Consortia working on design and testing
Automotive electronics	Powertrain, body and convenience, connectivity/ telematics	Medium • Increasing in-country ECU/telemetry assembly as EV volumes rise • Many sub-assemblies imported	Low–Medium • Harnesses/connectors localized • Power electronics, batteries, advanced sensors more import dependent	Low–Medium • Growing ADAS/BMS design at Tier-1s and startups • Lengthy certification cycles
Hearables and wearables	Smart-watch, TWS, headsets, glasses	Medium • Large-volume box assembly present • High import content in chipsets, displays and batteries	Low–Medium • Plastics, packaging, charging accessories localised • Core components largely imported	Low • Limited original platform design • Incremental ID/firmware work common

High	Medium-High	Medium	Low-Medium	Low

13. KPMG in India's 2026 analysis based on secondary research
14. Report on "Electronics: Powering India's Participation in Global Value Chains" by NITI Aayog released today - NITI Aayog press release dated 18 July 2024
15. Budget 2025: India reshapes duty structure - Fortune India news article dated 1 February 2025
16. MeitY invites applications for incentives under PLI 2.0 for IT Hardware - Ministry of Electronics & IT press release dated 30 May 2023, Guidelines for Operationalisation of Production Linked Incentive Scheme 2.0 for IT Hardware approved - Ministry of Electronics & IT press release dated 14 July 2023, Cumulative investment of ₹ 8,282 crore by 32 companies under PLI Scheme for Large Scale Electronics Manufacturing - Ministry of Electronics & IT press release dated 12 July 2024, and other related press releases in this regard.
17. Economic Survey 2025–26 issued by Department of Economic Affairs, Ministry of Finance, Government of India dated January 2026, and BSNL's Indigenous 4G stack embodies Swadeshi spirit - GoI PIB press release dated 28 September 2025
18. TCS, Tejas, local firms seek check on Chinese telecom equipment imports - The Financial Express news article dated 27 April 2024

Segment-level strategic prioritisation



Sustainable scale in EMS comes from choosing the right segments—not just building capacity

EMS sector is composed of multiple end-market segments, each with distinct growth trajectories, supply chain characteristics, and competitive dynamics. For emerging manufacturing hubs such as India, understanding the relative attractiveness of different EMS segments is critical. Some segments are characterised by rapid growth but intense competition and low switching costs, while others offer stronger margins, longer product lifecycles, and higher barriers to entry.

The strategic question facing India's EMS ecosystem is therefore not simply how much manufacturing capacity can be built, but which segments offer the most sustainable long-term opportunities.

Segment prioritisation in EMS requires answering two distinct questions simultaneously:

How attractive is the opportunity?

- Market growth
- Margin potential
- Demand stickiness (switching costs, qualification cycles, customer concentration)

Does India have — or can it credibly build — the right to compete for it?

- Ecosystem readiness
- Policy and demand alignment
- Existing capability base

Scale in EMS is anchored in consumer electronics, but sustained margin upside lies in exposure to low-volume, high-complexity applications

Analysis of large EMS players operating in Indian market indicates that each EMS player has 1-2 applications that they excel in while maintaining presence across multiple sectors. Mobile-focused players typically operate on a larger scale, while industrial, medical and defence segments tend to deliver higher margins driven by specialization and higher value add.

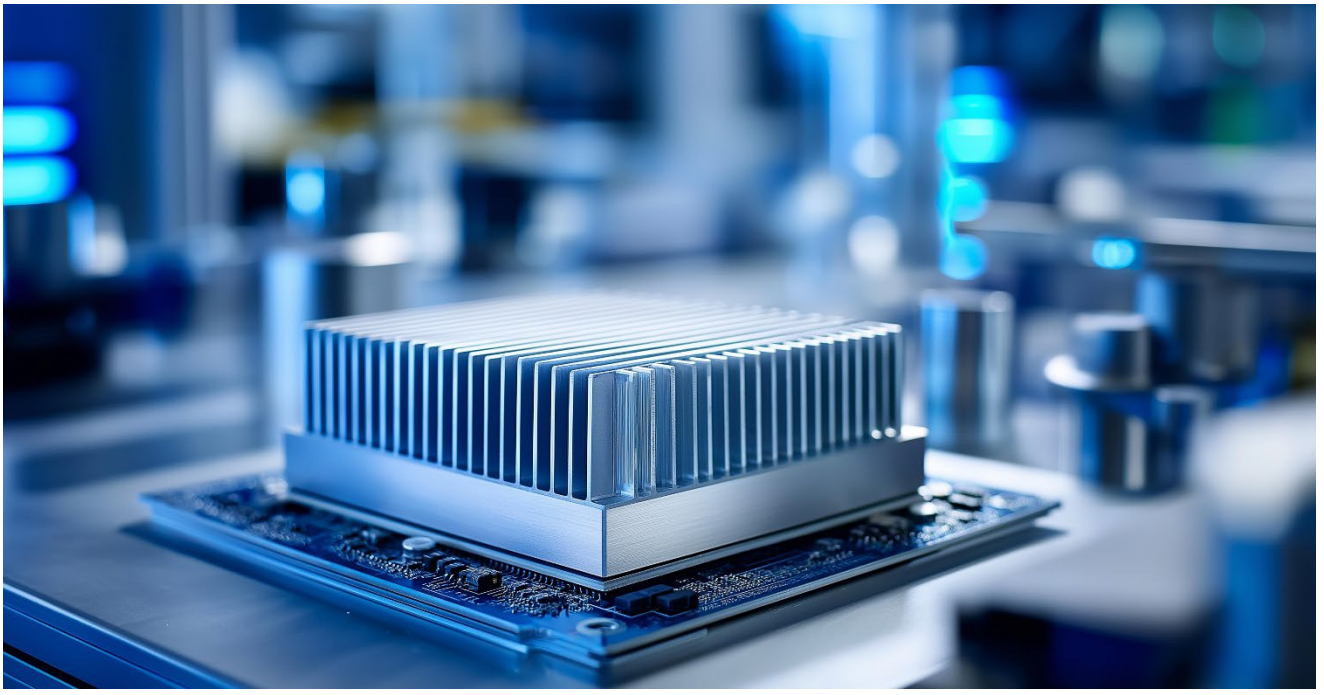
Figure 12: Indian electronics sector over last 5 years (USD billion)[19]

	Services Offered		Application presence								Financial performance		
			High volume low margin (HVLM)				Low volume high margin (LVHM)						
EMS player	PCBA	Box build	Mobile	Consumer	Lighting	IT	Auto	Industrial	Health-care	Others	Revenue USD Mn (FY25)	CAGR (FY22–25)	Avg. EBITDA margin (%) FY22–25
1*	◔	◕	✓	✓			✓			✓	828	(38%)	2%
2	○	●	✓	✓	✓	✓				✓	635	(10%)	5%
3	○	●		✓	✓	✓	✓	✓		✓	762	27%	6%
4	○	●		✓	✓				✓	✓	111	2%	6%
5	◕	◔		✓		✓	✓	✓	✓	✓	268	52%	8%
6	◕	◔					✓	✓	✓	✓	158	23%	12%
7	◑	◑				✓	✓	✓	✓	✓	74	13%	12%
8	◕	◔					✓	✓	✓	✓	89	29%	13%
9	◑	◑		✓		✓	✓	✓	✓	✓	225	42%	17%

Services Offered Low ○ to High ● revenue share

✓ Present in the service/application

Margins increase as players shift towards LVHM segment



19. KPMG in India's 2026 analysis based on company websites, annual reports, VCC Edge data and secondary research. Company names masked for confidentiality. Note: In case of Player 1, financial data is available till FY24. Accordingly, computations have been made till FY24.

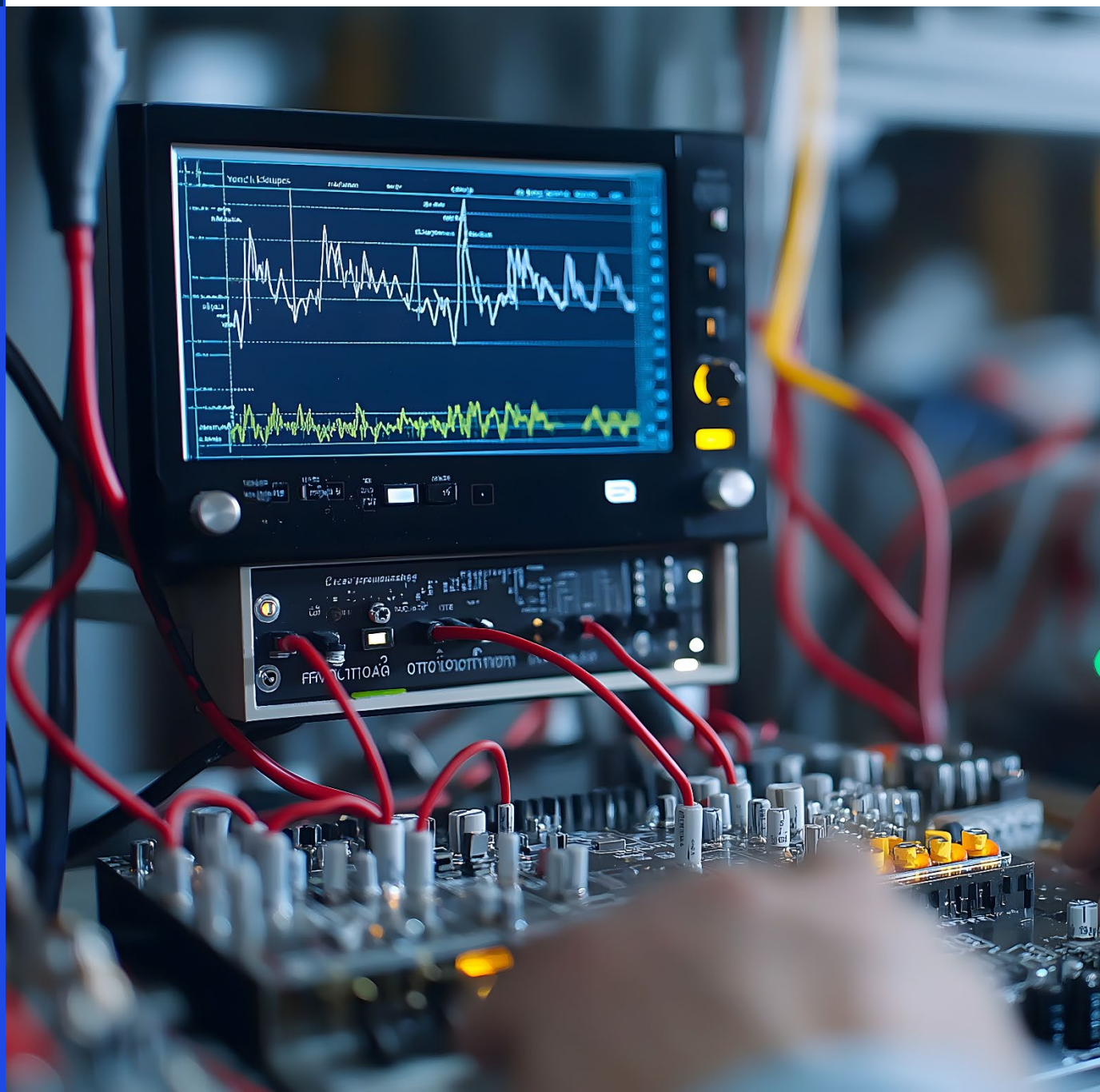
Evaluating major EMS segments yields four strategic quadrants, each with a distinct implication for how domestic EMS players should approach the segment

Figure 13: India EMS prioritisation: Segment attractiveness × Right to win[20]

	Lower segment attractiveness	Higher segment attractiveness
Higher Right to Win	**Defend and optimise** Protect the base and improve margins through integration **Mobile and consumer electronics** • High capability, maturing growth • Shift focus from volume to design-led integration to improve 3–5% EBITDA ceiling.	**Build and lead** Invest aggressively and establish durable competitive positions **Defence and aerospace** • Policy-protected, high-margins, long-cycle programmes create defensible moats • Build certification pipeline and deepen MoD partnerships. **Industrial electronics** • High mix, high engineering content (test and measurement, factory automation, power conversion) with sticky OEM relationships and aftermarket services • Expand IATF/IPC Class III certified capacity.
Lower Right to Win	**Watch and wait** Monitor, avoid over-investing until capability, and economics matures **Commodity IT hardware** • Moderate growth, thin margins, limited ecosystem depth • PLI-enabled but not yet structurally competitive beyond assembly. **Hearables and wearables** • High volume growth but low margins and stickiness • Scale selectively.	**Scale fast** Accelerate qualification pipelines, anchor customers, and deepen component clusters **Automotive electronics** • High growth (EV, premiumisation led), sticky domestic demand • Accelerate International Automotive Task Force (IATF) certifications and investments in Advanced Driver Assistance Systems (ADAS)-capable EMS clusters. **Telecom and networking** • Domestic 4G/5G buildout and PLI support • Operator qualifications create high switching costs • Export upside if products meet global certifications • Develop ODM/JDM capabilities and approvals for export markets.

20. KPMG in India's 2026 analysis based on secondary research

Structural constraints



The global EMS industry depends on tightly integrated ecosystems that combine component suppliers, specialised manufacturing processes, logistics infrastructure, and skilled labour. Countries that dominate electronics manufacturing — such as China and Vietnam — have developed these ecosystems over decades.

India's EMS industry, while growing rapidly, still faces several structural constraints that limit its ability to capture higher-value segments of the electronics value chain. These constraints fall into four broad categories:

4.1 Component ecosystem gap

India's most structurally significant vulnerability is the absence of a deep, domestic component supply chain. Unlike China's Pearl River Delta, where the dense Shenzhen–Dongguan–Guangzhou electronics cluster enables smartphone manufacturers to source the majority of components locally, often within a one-to-two-hour logistics radius, India's EMS players are reliant on long-haul import supply chains for nearly all critical components.

While final assembly has scaled rapidly—particularly in smartphones—India remains highly dependent on imported components across semiconductors, displays, PCBs, passives, camera modules, and battery cells. As a result, even domestically assembled products carry a high embedded import content, constraining value capture within India.

Figure 14: India EMS prioritisation: Segment attractiveness × Right to win[21]

Component category	Import dependency	Primary source	Localisation outlook
Semiconductors and integrated circuits (ICs)	~95%	China, South Korea, Taiwan	Initial gains likely in assembly, test, marking, and packaging (ATMP)/outsourced semiconductor assembly and test (OSAT) before front-end fabrication plants scale in long term (5+ years)
Displays organic light-emitting diode (OLED)/liquid crystal display (LCD)	~85-90%	China, South Korea	Limited near-term change; module assembly possible, but panel/glass likely to be imported
Printed circuit boards (PCBs)	~85-90%	China, Taiwan	Moderate improvement; domestic multi-layer board (MLB)/high-density interconnect (HDI) capacity expanding
Passive components (Multi-layer ceramic capacitor etc.)	~80–85%	China, Japan, Taiwan	Partial localisation underway for select passives under components scheme; scale, materials, yields are constraints
Camera modules and sensors	~85–90%	China	Limited near-term change; module assembly can be local, but sensors/lenses/actuators largely imported
Lithium-ion cells	>95%	China, South Korea, Japan	Improving; Advanced chemistry cell PLI (ACC PLI) to add cell capacity, but materials/precursors still imported

21. KPMG in India's 2026 analysis based on secondary research

The implications are significant:

Working capital intensity: Long import lead times (4–8 weeks from China/Taiwan) require high inventory buffers, increasing working capital requirements versus China-based peers

NPI agility: In India, new product introduction cycles tend to be longer due to component qualification lead times, which shifts competitiveness toward segments with longer validation cycles rather than fast refresh consumer categories.

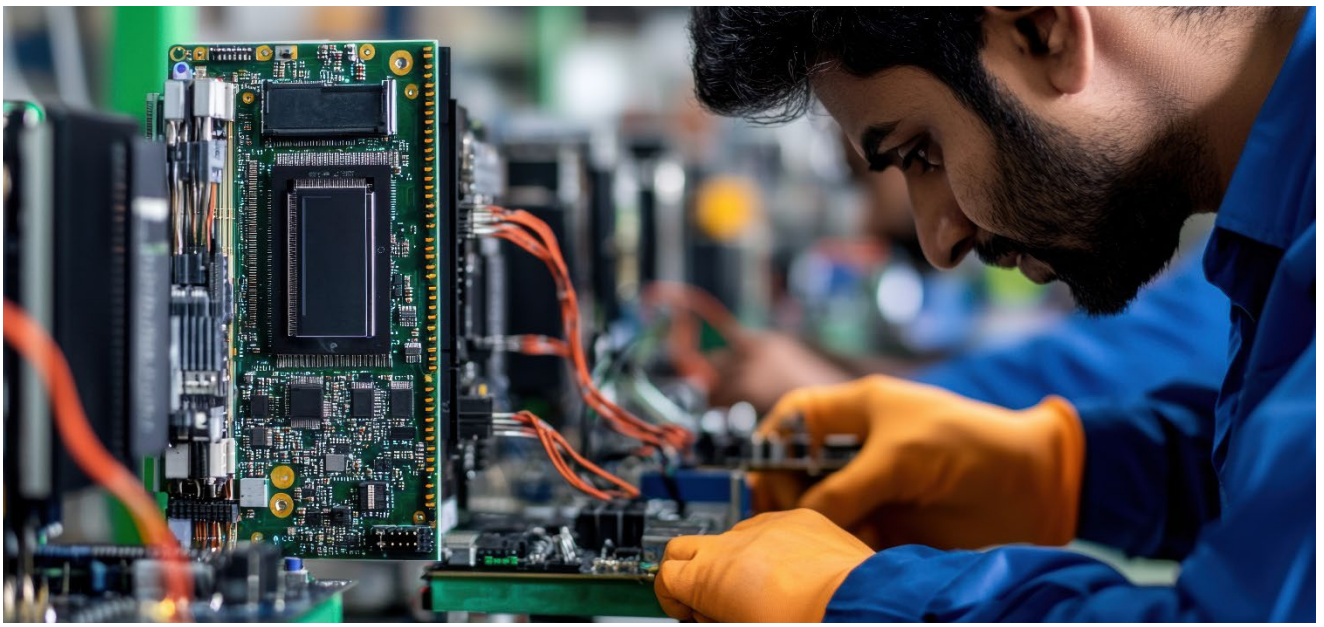
Cost competitiveness: Import duties, freight costs, and currency risk add to landed component costs, partially offsetting labour cost advantages.

With imported component content at 60–90 per cent of bill of materials in many segments, the domestic value-add — and therefore margin retention — remains structurally limited. Until India develops a credible component ecosystem, it is expected to remain a high-volume but relatively low-value node in global electronics supply chains.

4.2 Labour: Cost competitive but productivity gap remains

Although India benefits from a large labour pool, labour cost competitiveness does not automatically translate into manufacturing productivity. Precision EMS operations—particularly in high-mix, regulated segments—require tightly controlled processes, experienced technicians, and consistent yield performance.

Compared with established EMS hubs such as China and Vietnam, India continues to face productivity gaps driven by lower automation density, limited exposure to complex manufacturing programmes, and uneven availability of skilled technicians. These gaps partially offset India's labour cost advantage, particularly in high-precision and high-reliability applications.



Closing the productivity gap is as critical as scaling capacity, especially if India aims to compete in segments where quality, yields, and reliability matter more than unit labour cost

Figure 15: Comparison of labour metrics across key EMS markets[21]

Metric	China	India	Mexico	Vietnam
Average manufacturing wage (USD/month)[22]	1,000-1,200	200-250	600-650	250-300
Labour productivity	Very high	Moderate	High	Moderate
Skilled technician availability	Very high (decades of EMS exposure across tiers)	High engineering depth; EMS technician maturity is low-moderate (skill-gap in hands-on EMS/automation)	**Moderate–high** (strong in auto/electronics corridors)	**Moderate** (dense EMS clusters; fast learning curve)
Automation maturity	High	Low-Moderate	Moderate	Moderate

4.3 Logistics and supply chain friction

India's logistics infrastructure has improved meaningfully over the past decade, supported by national highway expansion, port modernisation, and freight corridor development. These improvements have reduced transit times and improved reliability for bulk manufacturing flows. However, EMS operations—particularly high frequency, precision manufacturing—remain sensitive to last mile logistics performance, customs clearance efficiency, and cross border coordination. Relative to established Asian EMS hubs, India continues to experience higher variability in turnaround times and cost predictability, increasing friction for time critical programmes.

21. KPMG in India's 2026 analysis based on secondary research
22. Global Wage Report 2024-25 released by the International Labour Organization.

Logistics reliability—not just infrastructure availability—plays a key role in India's ability to support complex, just in time EMS programmes at scale.

Figure 16: Comparison of logistics performance across key EMS markets[23]

Country	Logistics Performance Index (LPI) Rank - 2018	Logistics Performance Index Rank - 2023
China	26	19
Malaysia	41	26
Thailand	32	34
India	44	38
Vietnam	39	43
Mexico	51	66

Note: LPI evaluates logistics performance based on six core components: customs performance, infrastructure quality, timeliness of shipments, services quality, tracking and tracing, and the ease of arranging competitively priced shipments.

4.4 Quality and certification readiness

EMS quality certification is not a compliance formality - it is a market access gate, and the timeline to achieve it is measured in years, not months. Each high-value segment has its own governing standard: IATF 16949 for automotive electronics, AS9100D and National Aerospace and Defense Contractors Accreditation Program (NADCAP) for aerospace and defence, ISO 13485 for medical devices, and IPC Class III for high-reliability industrial and defence electronics. Achieving and maintaining these standards typically requires three to seven years of sustained investment per facility in equipment, processes, and trained personnel - well before the first qualifying customer order can be accepted.

India's current depth across these certifications is thin relative to the opportunity. For instance, in automotive, the IATF Global Oversight interactive database lists 7,777 IATF 1949 certified sites in India across the automotive supply chain – a meaningful number in absolute terms but representing less than 8 per cent of global total, against China's estimated 62,000+ sites (over 55 per cent of global base)[24]. Critically, these 7,777 totals cover all automotive suppliers, the sub-set of pure-play EMS facilities represents a small fraction of this total, and the depth of automotive electronics capability within those certified sites is nascent.

The strategic implication is clear: the qualification timeline is itself a competitive moat. EMS players who begin building certification depth today - ahead of customer mandates - are expected to have a durable advantage over those who wait.

23. LPI ranking as released by the World Bank Group
24. 24 Distribution of the 105.397 IATF 16949 certified sites as of 2026-02-20 - released by IATF Global Oversight organisation

4.5 Role of policy support

Government policy has been the single most consequential enabler of India's EMS growth over the past decade. The PLI scheme for large-scale electronics manufacturing - disbursing 4 - 6 per cent of incremental production value over five years[25] - provided the fiscal bridge that made India cost-competitive with China and Vietnam despite structural ecosystem gaps.

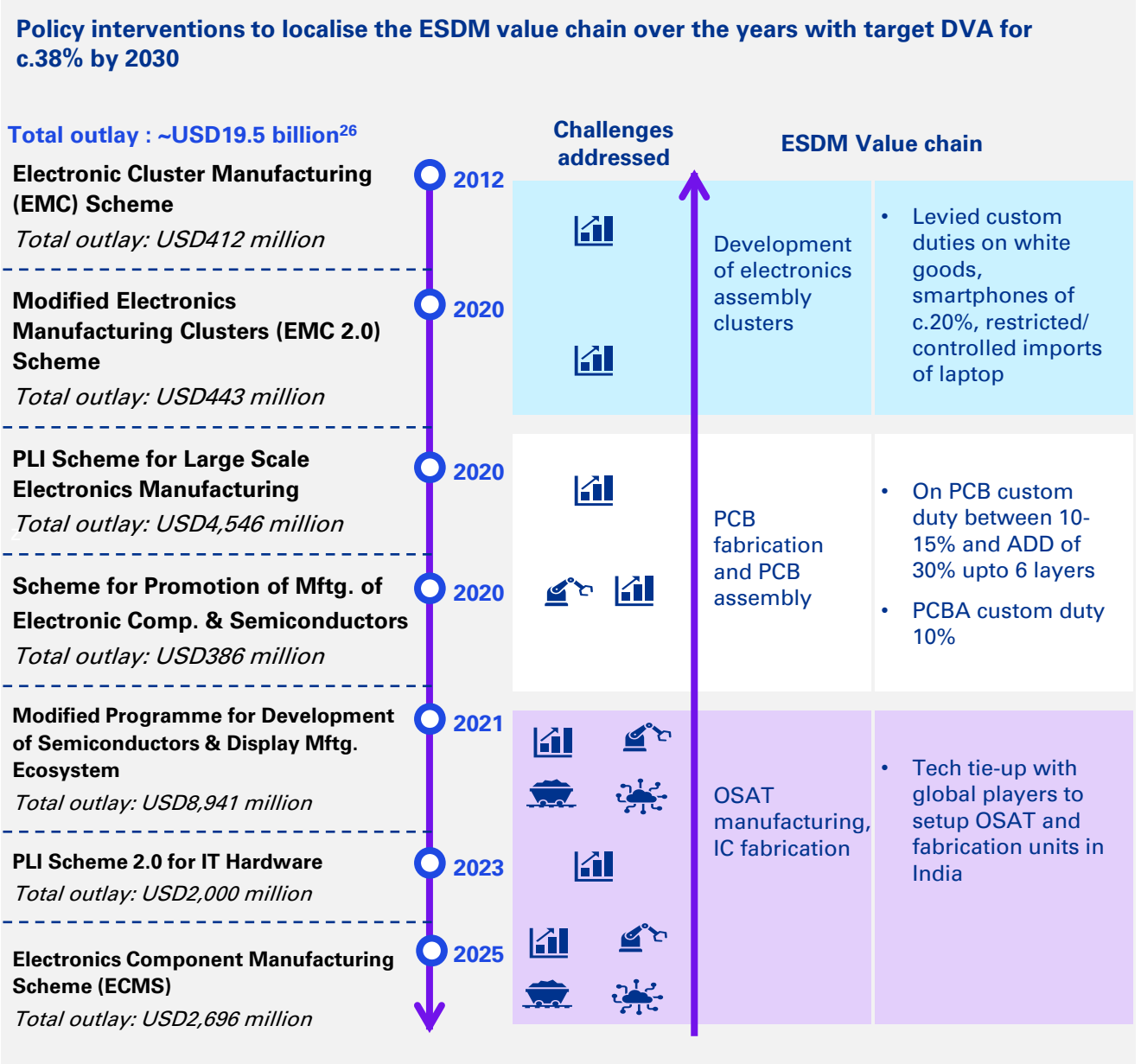
The Semiconductor Mission is a cornerstone policy initiative—one of the largest strategic bets in India's industrial agenda. The approved investments in fabrication plants and outsourced semiconductor assembly and test (OSAT) signal a long-term commitment to component-level indigenisation that no incentive scheme alone could have catalysed. If these investments deliver on schedule, they are expected to meaningfully reduce India's near-total import dependence on semiconductors and create the foundation for a more vertically integrated electronics ecosystem.

Figure 17: Key challenges in localising ESDM value chain[26]

- **Economies of scale –** India's DVA% in the electronics manufacturing sector expected to be ~35 - 40% in next 5 years, compared to >=50% for USA, China, EU (Germany, France, etc.)[26]
- **Lack of skilled manpower –** Total demand for skilled workers in India is 103 million, while the current supply is 74 million[27]
- **Import dependance for capital goods –** Heavy reliance on imports from countries (mainly China) for key and expensive manufacturing equipment
- **Raw material import dependency –** Absence of key sub-components/ raw material such as camera lens, semiconductor, silicon, etc.
- **Technology dependency –** IC fabrication currently controlled by 7-8 global players across the world

25. Export of Electronic Goods - Ministry of Electronics & IT press release dated 6 April 2022
26. KPMG in India's 2026 analysis based on policy documents, PIB media releases and secondary research
27. India faces skilled worker shortage, needs to bridge demand-supply gap: Study - India Today news article dated 28 September 2024

Figure 18: Policy interventions aimed at localisation of ESDM value[26]



However, policy support has its limits - and India is approaching them. Incentive schemes can build capacity; they cannot, by themselves, build competitiveness. Performance data from India's large scale electronics PLI shows that while a few anchor firms scaled rapidly, several beneficiaries fell short of production targets—underscoring that financial incentives alone cannot compensate for gaps in ecosystem depth, logistics efficiency, and certification readiness.

The risk of an incentive-led plateau is real: if India's EMS cost competitiveness remains structurally dependent on PLI disbursements rather than inherent productivity and ecosystem advantages, the sector faces a viability cliff as incentive cycles taper.

The next phase of policy design must shift from capacity incentives to capability incentives - rewarding domestic value-add intensity, certification attainment, and design integration, rather than incremental revenue alone

26. KPMG in India's 2026 analysis based on policy documents, PIB media releases and secondary research

The strategic future of India's EMS industry

India's EMS at strategic crossroads: Assembly, integration, or global leadership

The global electronics manufacturing landscape is undergoing one of its most significant transformations in decades. Supply chain diversification, technological complexity, and the growing role of electronics across industries are reshaping where and how products are manufactured.

Against this backdrop, India has emerged as one of the fastest-growing electronics manufacturing destinations. Over the past decade, the country has built significant manufacturing capacity, attracted major global manufacturers, and expanded its electronics exports.

The next 5–10 years are expected to define whether India's EMS growth is durable or peaks as an incentive-driven assembly cycle. Three distinct futures are plausible — and the path taken is shaped by decisions made today.

Figure 19: Three plausible futures for India's EMS sector[28]

Domestic value addition: 20-25% → 45-50%

Scenario	A: Assembly hub 2.0	B. Integrated manufacturing node	C. Global electronics hub
Description	India continues its trajectory as a high-volume, primarily labour-intensive assembly location. PLI incentives sustain capacity build-out through 2028–30, but the ecosystem gap persists.	India expands beyond final assembly and develops a deeper electronics manufacturing ecosystem.	India develops capabilities across the entire electronics value chain, including semiconductor manufacturing, component production, advanced manufacturing processes, and product engineering
India EMS market (2035)	USD100-120 billion	USD140-200 billion	USD200-250 billion
Key characteristics	• Strong growth in electronics exports • Continued expansion of smartphone and consumer electronics manufacturing • High dependence on imported components • Limited domestic semiconductor manufacturing	• Expansion of domestic component manufacturing (PCBAs, passives, camera modules, chargers, etc.) • Growth of semiconductor packaging and testing facilities • Stronger supplier ecosystems around manufacturing clusters • Deeper collaboration between EMS providers and OEM product development teams	• Domestic semiconductor fabrication facilities • Strong electronics component supply chains • Globally competitive EMS companies • High-value engineering and product development capabilities
Skill level	High volume, low skill intensity	Moderate volume, moderate skill intensity	Highly skilled workforce
Export competitiveness	Moderate - focus on assembly operations	Moderate — Cost + capability competitive	High – Cost + capability competitive in high-value categories

28. KPMG in India's 2026 analysis based on secondary research

From assembly gains to ecosystem moat: What government, EMS players, and global OEMs must do now

The transition from Scenario A towards a deeper electronics manufacturing ecosystem (Scenario B and C) requires close collaboration between government, industry, and academic institutions.

Government policy has already played an important role in attracting investment into electronics manufacturing. However, the next phase of development is likely to require policy initiatives focused on semiconductor ecosystem development, electronics component manufacturing along with measures favouring sustained investment in technology development, research institutions, industrial clusters and workforce training. Industry collaboration is also crucial to build supplier networks and strengthen the competitiveness of domestic EMS companies.

Figure 20: Strategic imperatives for key stakeholders[28]

Government	Domestic EMS players	Global OEMs
• **Establish a dedicated Component Ecosystem Development Mission** for PCBs, displays, passives etc. with incentives tied to yields, exports per cent • **Create world-class Electronics manufacturing clusters (EMCs)** with plug-and-play utilities, bonded warehouses, and testing infrastructure, modelled on China's industrial clusters • **Prioritise higher investments in R&D and creation of shared, industry-accessible design infrastructure** (EDA tools, labs, prototyping, testing and validation facilities), **lowering entry barriers** and enabling startup and MSME participation • **Invest in STEM-to-shop-floor pipeline:** NIELIT, ITIs, and polytechnics need updated electronics manufacturing curricula aligned to Industry 4.0 requirements.	• **Invest in engineering and design capabilities now** — before customer demand mandates it. Earn OEM design relationship through NPI partnership • **Prioritise segments with qualification barriers** (auto, industrial, defence) over commodity consumer segments • **Build supply chain intelligence as a core capability** — dynamic supplier qualification, dual-source strategies, and real-time inventory visibility are competitive assets • **Pursue strategic M&A to acquire missing capabilities**: Design houses, test engineering firms, and specialised component distributors can accelerate the value chain upgrade • **Develop talent management as a strategic priority.**	• **Develop a dual-track supply chain strategy:** maintain China-based supply chains for cost efficiency while building India-based capacity for resilience and regulatory compliance • **Engage early in design localisation** — Leverage India's engineering talent for cost-optimised product variants for India and emerging markets • **Partner with Indian government on cluster development and skill programmes** — the OEMs that shape the ecosystem are expected to have structural advantages over those that merely extract from it.

28. KPMG in India's 2026 analysis based on secondary research

The Defining Opportunity

India's EMS opportunity is real, large, and time bound. The global supply chain rewiring is a once-in-a-generation event. But opportunities of this nature are not self-executing — they require coordinated, sustained, and strategically coherent action from government, industry, and investors.

The distance between Scenario A and Scenario C is not capital. It is strategy, coordination, and the patience to invest in capabilities whose payoffs accrue over a decade — not a PLI cycle.

India has the talent base, domestic demand, and favourable geopolitical tailwinds to emerge as a leading global electronics manufacturing node. The extent to which this potential is realised is expected to become clearer over the next five years.

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