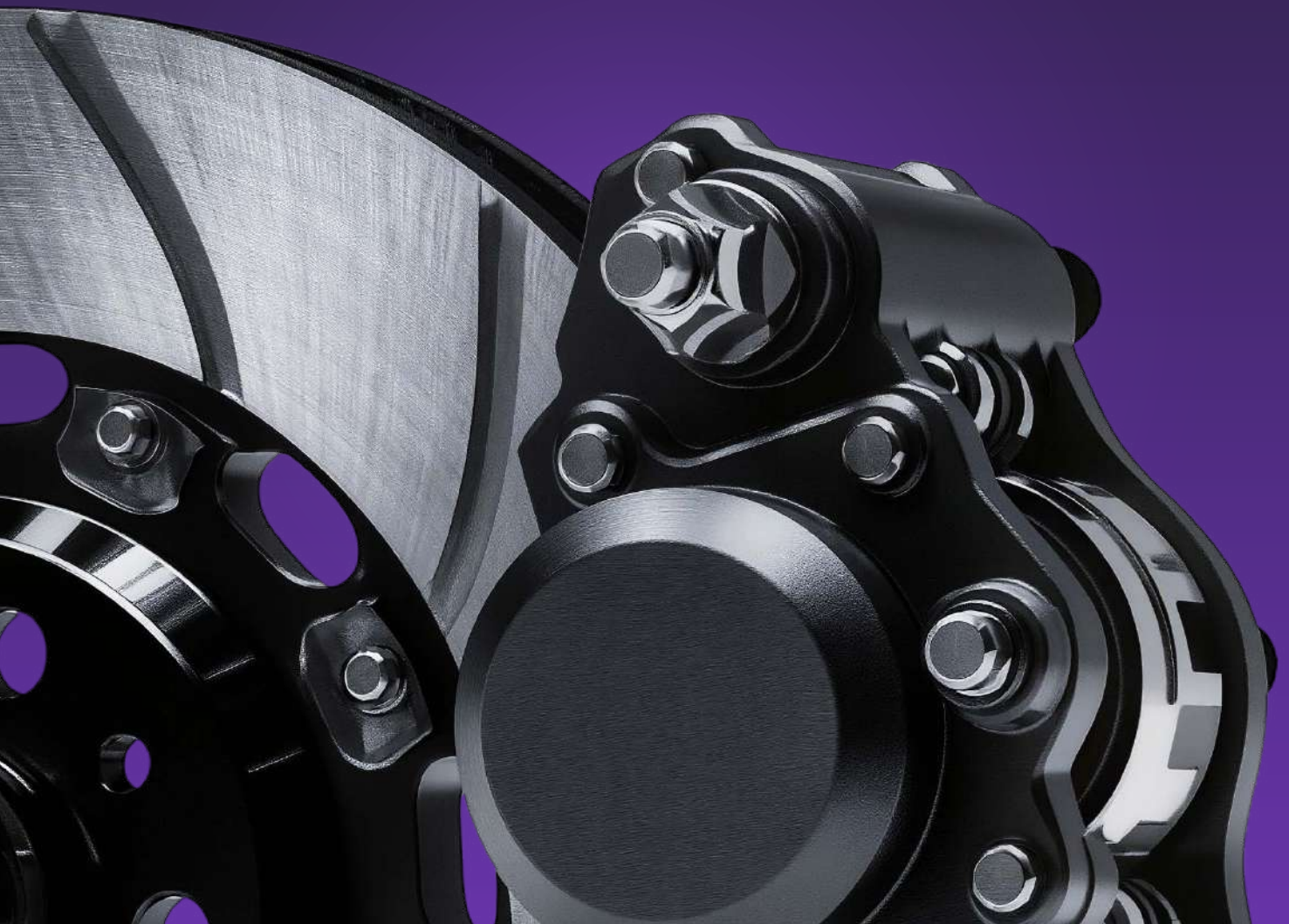


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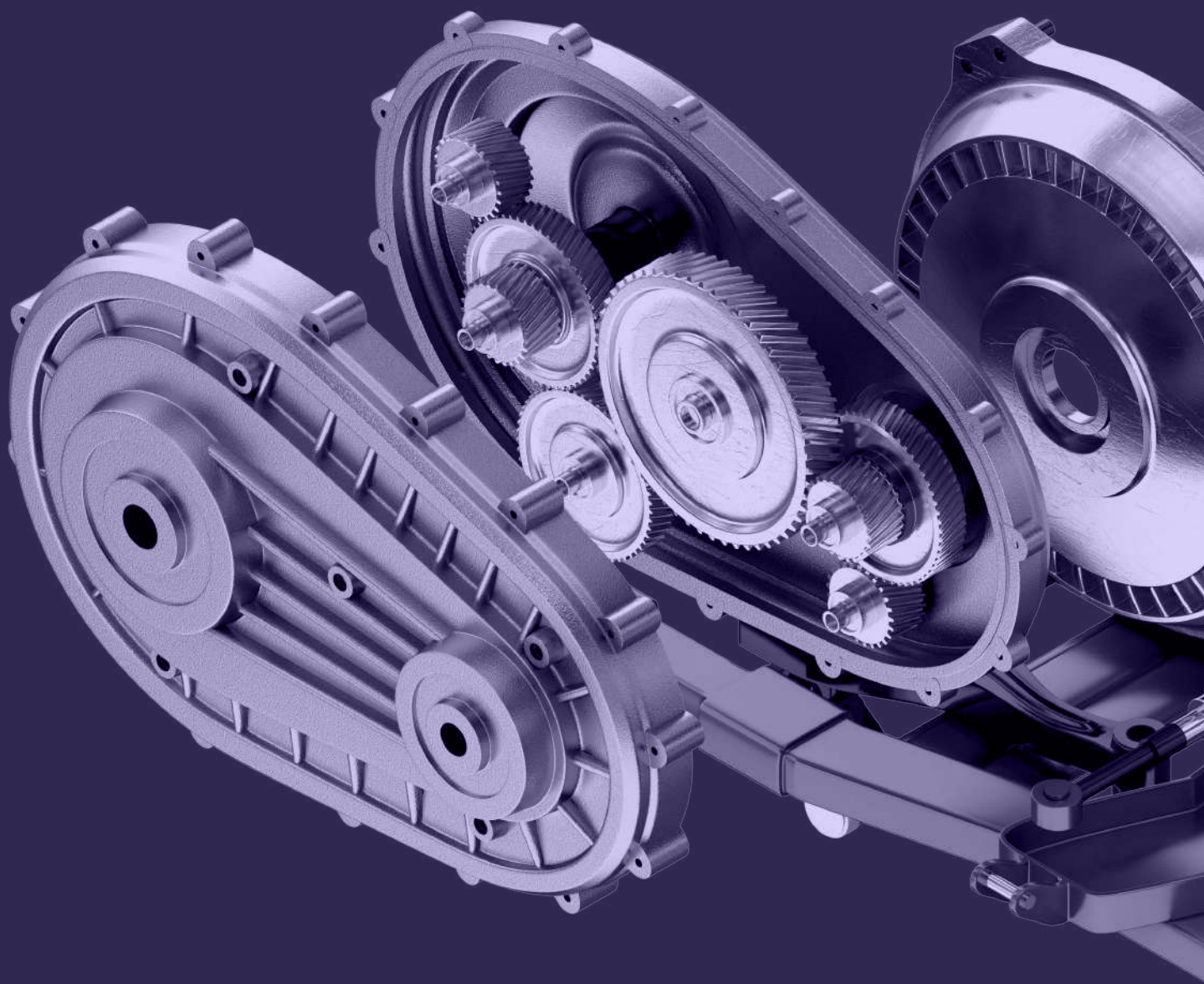
Beyond Resilience

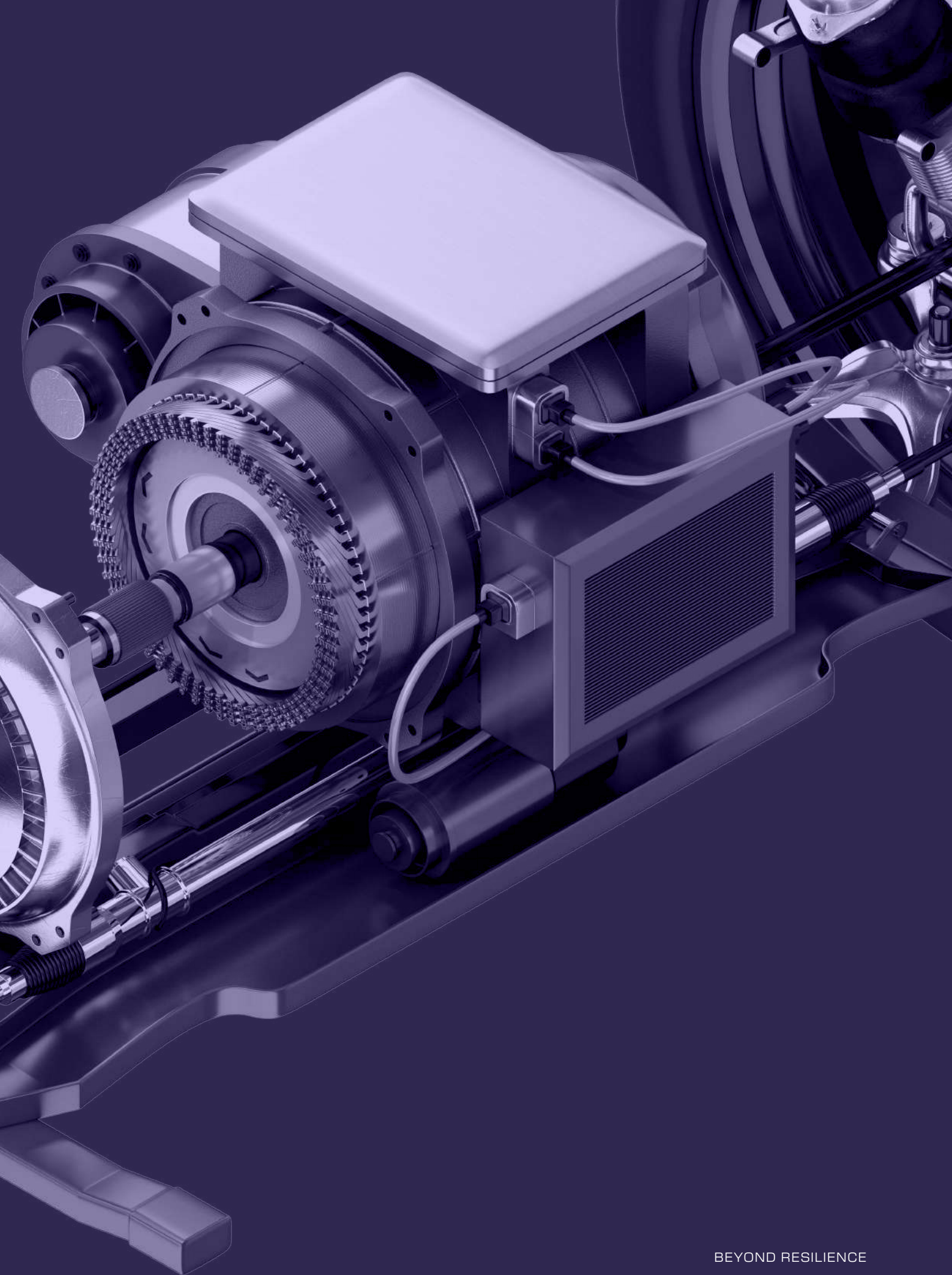
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SEPTEMBER 2026



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BEYOND RESILIENCE



A sailor's proverb captures
what this report is about:

*'You cannot control the wind,
but you can adjust your sails.'*

The decade ahead will bring winds no one can predict. No sector can choose its shocks, but it can choose how ready it is to meet them. The Indian auto component industry needs to place itself in the correct direction to use those winds to sail further and grow.





Where Strategic Clarity Meets Applied AI

We are navigating an era of unprecedented change and disruption—powered by technology, marked by complexity, where change amplifies at scale. To lead, companies need a partner that can bridge the gap between ambition and outcomes. BCG is built for this moment. We bring strategic clarity, rooted in over 60 years of deep domain knowledge, to ensure leaders make the right choices. We combine it with applied AI, shaped and wielded by our practitioners, teaming shoulder-to-shoulder with your teams to deliver transformative impact at scale. The result? Stronger returns, transferred capabilities, and change that sticks. We are BCG.



Set up in 1959, the Automotive Component Manufacturers Association of India (ACMA) is the apex industry body representing India's auto component sector. With a distinguished membership of over 1,100 manufacturers, ACMA's members collectively contribute to over 85% of the industry's total turnover, playing a pivotal role in India's emergence as a global automotive manufacturing hub.

ACMA's mission is anchored in driving sustainable growth, technological advancement, and employment generation. Through its unwavering focus on R&D, quality excellence, innovation, and skilling, ACMA ensures that India remains at the forefront of the global auto component value chain.

The Association empowers its members through policy advocacy, market intelligence, capacity building, and international partnerships, while fostering gender diversity, sustainability, and equitable growth across the ecosystem.

ACMA plays a catalytic role in trade promotion, technology enhancement, and quality improvement, actively:

- Showcasing Indian capabilities at global trade fairs and business delegations abroad;
- Publishing insightful policy reports and industry studies;
- Driving manufacturing excellence through cluster programs such as Asset Turnover Improvement, Uptime Improvement, Zero Defect Quality, and Sustainable Manufacturing.

ACMA is well-represented across key Government committees, councils, and advisory panels, and has forged MoUs with counterpart associations in markets and jurisdictions including France, Germany, Japan, South Korea, Taiwan, Turkey, the UK, and the USA, fostering trade cooperation and technology exchange.

Executive Summary

India's auto industry is entering a rare moment of convergence: strong domestic demand, rising global relevance, and a once-in-a-generation reshaping of automotive technology are all unfolding at the same time.

The industry has already covered remarkable ground. India rose from the world's sixth-largest vehicle market in 2014–15 to the third-largest in 2022–23, a position it has held since. The auto component industry has anchored this growth, expanding at roughly 17% annually over the past five years to reach ~\$86 Bn (~₹7.6 lakh cr) in turnover. More important than the pace of growth is what has been built underneath it. Localization has crossed 70% of industry requirements. Exports scaled to ~\$24 Bn (~₹2.1 lakh cr) and FY24 marked the sector's first-ever net trade surplus year. Through a decade punctuated by demonetization, an industry slowdown, a pandemic, and repeated commodity and energy shocks, Indian suppliers kept investing, adapting, and moving up the value chain.

The next stretch of road looks even more promising. India is the rare market with real scale in both ICE and EV opportunities at once, underpinned by strong and growing domestic demand. Indian suppliers are well placed to become a globally significant manufacturing base for ICE components as other markets pull back. The industry has set its sights, accordingly, aspiring to reach roughly \$200 Bn (~₹17.6 lakh cr) in turnover by FY30.

A bigger prize, though, comes with a more demanding game. The market is fragmenting across ICE and EV, mechanical and electronic, domestic and export, and each segment now rewards a distinct capability. Layered on top of this is volatility that has stopped being an occasional disruption and become a permanent feature of how the business runs. Leaders feel this acutely: in a BCG-ACMA survey of auto component players, ~90% said they are in the right place at the right time. ~78% also said the business is riskier today than it was five years ago. Both things are true, and the best companies are learning to hold them at once.

Deeper research explains why the tension is so sharp. Leaders are being pulled across several strategic axes simultaneously: invest ahead of demand or wait, diversify or deepen with existing customers, build in-house or acquire, automate or invest in people. Despite so many live, strategic questions, most leadership time today still goes into keeping the business running rather than shaping where it goes next. Three disruptions surfaced as the deepest and most recurring over the decade: raw material and energy cost spikes, manpower shortages, and demand volatility. Most companies now claim to track these closely. The harder part has been converting that visibility into action.

That said, the industry has a proven habit of clearing hurdles, and this report is really about how. The most striking finding is what resilience actually looked like in practice. The companies that came out of the last decade strongest did not start with a margin advantage. In FY16, they were behind their peers. The gap closed, then reversed, and has kept widening every year since, reaching about 1.4 percentage points by FY25. Their edge was not a head start. It was the ability to bounce back faster than everyone else, year after year.

That is the compounding effect of resilience. What begins as an ability to withstand disruption can become an operating advantage, then a margin advantage, and eventually a strategic one. The task now is to make that advantage intentional. What comes next will look different for every company, depending on where it sits today, how fast it is growing, and how much complexity and volatility it already carries. The report outlines a 'resilience roadmap'. It is built to help leaders place their own company on that map and identify what to prioritize next across five levers: people and talent, supply chain, demand mix, value-add capability, and technology enablement.

Tomorrow's disruptions will not look like the past, and the winners will need new muscle to tackle them. The closing section lays out the operating principles for leadership for that next phase. None of these principles can predict the next shock. All of them make the industry faster and clearer-headed when one arrives.

India's auto component sector enters the coming decade with a powerful combination of scale, momentum, and optionality. The opportunity now is to turn the resilience earned over the past ten years into a repeatable source of growth and competitive advantage.

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01

What we have
Achieved Together, and
Where we are Headed





1.1 Celebrating a decade of growth

Robust domestic demand leads the way

India's domestic vehicle market has grown significantly in the last decade. From roughly **20 Mn units in FY16 to around 28 Mn in FY26**, passenger vehicles, commercial vehicles, two-wheelers, and three-wheelers have all contributed to this expansion, though at different rates. **The pace has also quickened: the market grew faster over the last five years (~9% per year) than over the prior ten.** The last three have seen ~10% growth per year, recovering from the COVID trough. While passenger vehicles led the acceleration over the last five years, two-wheelers continue to provide the scale.

PASSENGER VEHICLES

Domestic sales grew from **~2.8 Mn units in FY16 to ~4.6 Mn units in FY26**. Over the last five years, the pace reached ~11% per year, more than double the ten-year rate. India is now the third-largest passenger vehicle market in the world, behind only China and the United States, having risen from fifth position a decade ago.

Mn Units

2.8 FY16

~5% p.a. | 10 years

Mn Units

4.6 FY26

~11% p.a. | 5 years

Now the world's **3rd-largest PV market**, by volume, up from **5th** a decade ago.

TWO-WHEELERS

This segment continues to drive volumes in the Indian market. Sales increased from **~16.5 Mn units in FY16 to ~21.7 Mn units in FY26**, growing at ~3% per year over the last ten years and ~8% per year over the last five, rebounding strongly from the COVID dip. Household penetration has also risen sharply, from around 40% a decade ago to ~60% today.

Mn Units

16.5 FY16

~3% p.a. | 10 years

Mn Units

21.7 FY26

~8% p.a. | 5 years

Household penetration up from **~40% → 60%+**.

Source: SIAM Report; NFHS-4, 2015-16 (IIPS/MoHFW); Household Consumption Expenditure Survey, 2023-24 (NSO/MoSPI); BCG Analysis



Exhibit 1.1
India domestic vehicle sales by segment (Mn units), FY21–26



	5-Y	3-Y
2W	8%	11%

	5-Y	3-Y
PV	11%	6%

	5-Y	3-Y
CV	14%	4%

	5-Y	3-Y
3W	31%	22%

Source: SIAM Report; BCG Analysis

India: Positioning as a global bright spot amid subdued global markets

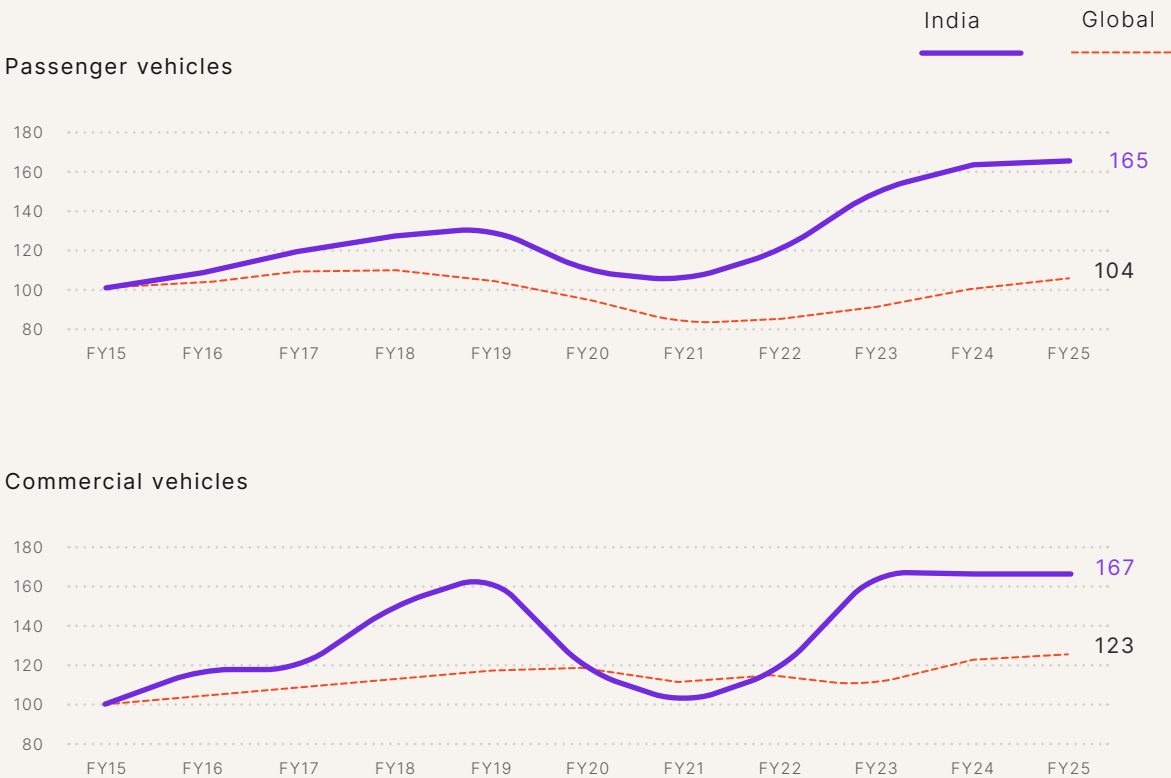
Global vehicle sales have moved at roughly 1–2% per year over the past decade, across both passenger and commercial vehicles as well as across five- and ten-year horizons. This is a reflection of mature markets reaching saturation, where sales replace rather than expand the existing fleet. India is at the opposite end of the curve. The country is still in the early phase of motorization. A young population, rising incomes, wider access to credit, and a sustained policy push, including successive GST rationalizations, are steadily converting that low base into durable demand. This is a structural runway: the conditions that powered the last decade are largely still ahead of us.



The sustained momentum has driven India's journey to becoming the world's third-largest automotive market. In 2014–15, India ranked sixth in the world by vehicle sales, behind China, the United States, Japan, Germany, and Brazil. By 2019–20, it rose to fourth, and by 2022 India had reached third place, a position it has held since.



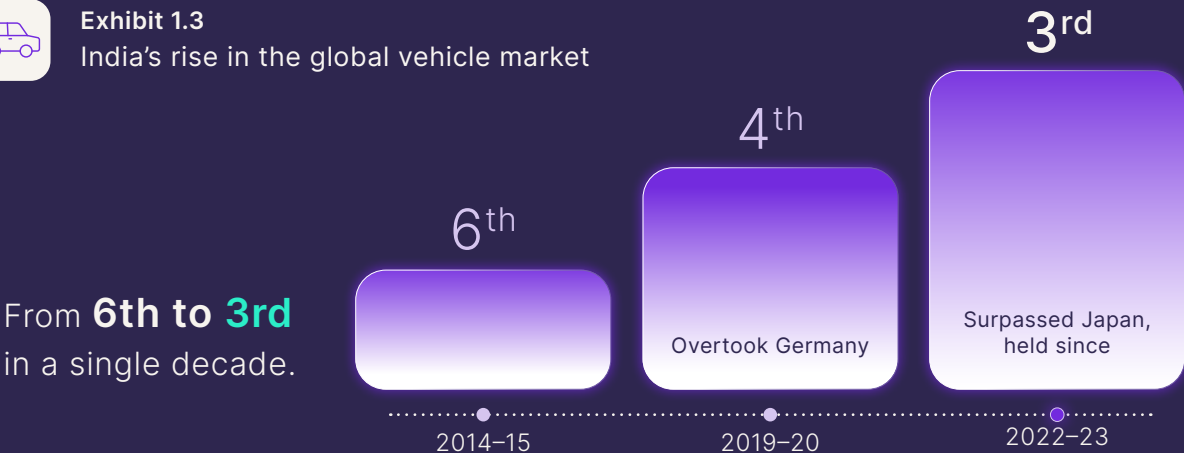
Exhibit 1.2
India vs global sales (PV and CV) indexed to FY15 values



Source: OICA Sales Statistics, SIAM Report



Exhibit 1.3
India's rise in the global vehicle market



Ranking on passenger and commercial vehicle sales (OICA basis; excludes two- and three-wheelers).
Sources: OICA Sales Statistics; ACMA Annual Report 2014–15; SIAM; S&P Global Mobility (Nov 2022)



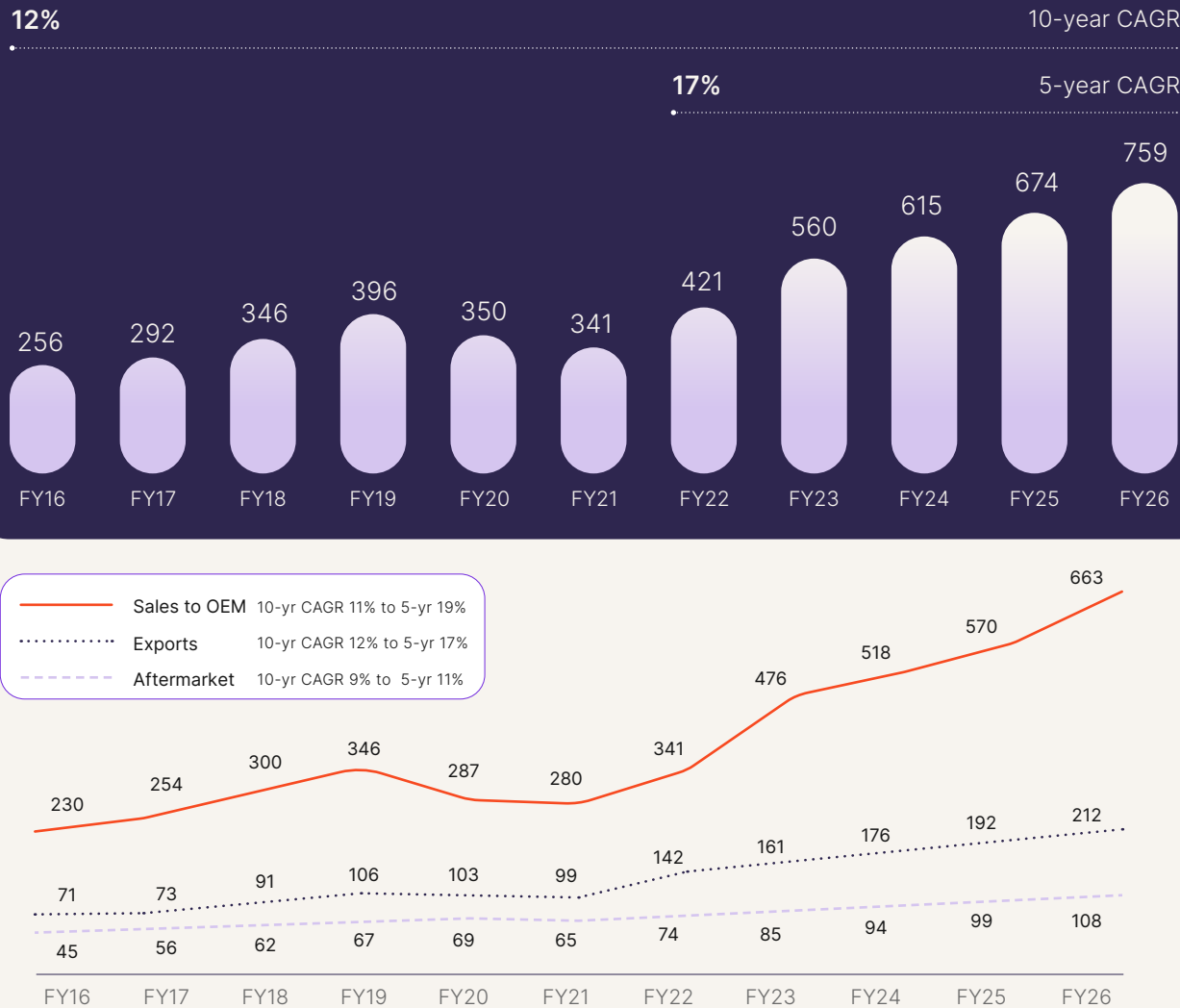
1.2 India's auto component industry steers the growth wave

The auto components sector takes the driver's seat

India's auto components industry has grown faster than the vehicle market at roughly **17% a year over the last five years, reaching ~\$86 Bn (~₹7.6 lakh cr) in turnover by FY26.*** Here too the pace quickened in the second half of the decade; turnover compounded at ~17% over five years against ~12% over ten years. By FY26 the industry stood well above its pre-COVID level. Instead of merely recovering, the auto component sector broke through. It has been the backbone of India's auto story and one of the country's strongest industrial success stories.



Exhibit 1.4
India auto-component turnover (₹'000cr) FY16-FY26^



Source: ACMA Report
^Total Turnover = Sales to OEM + Exports + Aftermarket - Imports
Sales to OEM: Auto component supply to domestic OEMs



Localization: This has been a major driver of this progress. India has steadily deepened localization to >70% of its auto industry requirements today, up from the >60% levels a decade ago.¹ Holding and growing that share while demand more than doubled is a significant achievement. It shows that domestic capacity expanded fast enough to keep pace with surging demand. Some product categories have seen a measurable substitution of imports, such as wheels/rims, engines, and steering parts. This progress was driven by a **rapid build-out of domestic manufacturing capacity and government policies** aimed at reducing reliance on imports.



Exhibit 1.5
India's import reduction in key components

Estimated

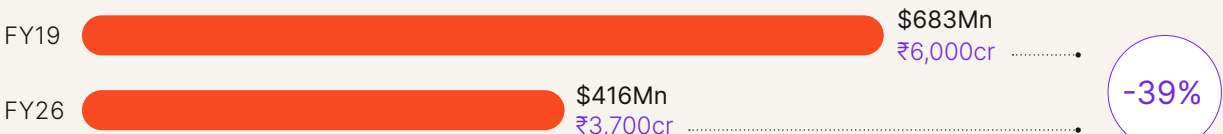
Wheels/Rims

Auto end-use imports | Values in \$Mn and ₹cr



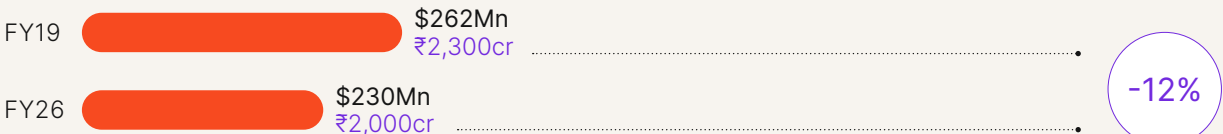
Engines

Auto end-use imports | Values in \$Mn and ₹cr



Steering Parts

Auto end-use imports | Values in \$Mn and ₹cr



Note: ₹Cr value derived by using ₹88/USD conversion rate (Average for FY26). Value rounded to nearest '00cr; Ministry of Commerce and Industry (Tradestat, MoCI)

Export: Building on this scale and capability base, the industry has also crossed a key competitiveness milestone, moving from a trade deficit of ~\$2.9Bn (~₹19,000cr)* in FY16 to its first-ever net trade surplus of ~\$300Mn (~₹2,500cr)* in FY24. Total exports have more than doubled over this period, from ~\$11Bn (~₹72,000cr)* in FY16 to ~\$24Bn (~₹2.11 lakh cr)* in FY26.² This shift reflects deeper integration into global supply chains, participation in higher-value OEM programs, and growing capabilities aligned with an electric future.

1. ACMA Annual Report 2014–15; 2. ACMA Annual Report 2019–20 and ACMA Annual Report 2024–25 (auto component exports and imports); ACMA industry performance release for FY26;* Basis Average conversion rate in that FY: FY26 – ₹88/USD; FY24 – ₹83; FY16 – ₹65.5



1.3 Cruising through

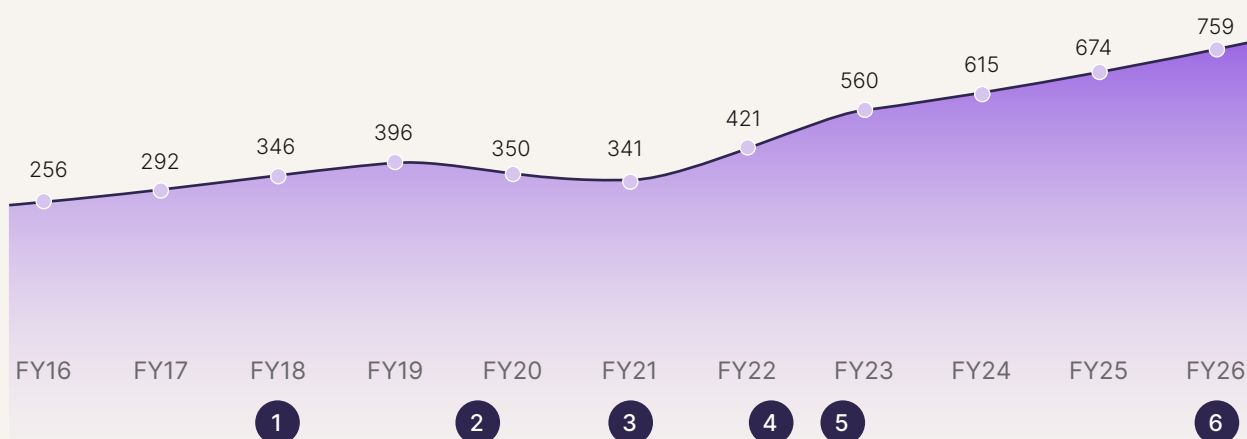
Strong sector growth through a decade of repeated disruptions

The auto component sector grew strongly over the past decade, against a backdrop of near-continuous disruption. Once again, it proved more resilient than it gives itself credit for. While the scale of this growth has been astounding, what stands out is its ability to withstand the disruptions that took place almost every year in the past decade. Whether it was demonetization, the 2019 auto slowdown, COVID, or commodity and energy spikes, the industry kept compounding through it all.



Exhibit 1.6

India's auto component turnover (INR ₹ '000Cr) against a decade of disruption, FY16–26



1

GST rollout

Most ICE vehicles pushed into the 28% slab plus cess; suppliers absorbed months of input-credit and working-capital disruption.

2

The auto slowdown

Costlier ownership eroded demand; component revenue fell ~10%, with ~1,00,000 jobs and ~\$2Bn of investment lost, before COVID even arrived.

3

COVID-19 & BS-VI

Production stopped and turnover fell ~34% in H1; the BS-VI leap forced costly re-engineering amid a labor exodus, the decade's deepest shock.

4

Semiconductor shortage

~7 lakh vehicles' worth of orders unfilled by end-2021; 'mostly over' only by mid-2023, a two-year drag.

5

Commodity & energy spikes

Steel up ~40%, with metals at 50–60% of input cost, margins squeezed, compounded by the Russia-Ukraine war.

6

Rare-earth magnet curbs

China's licensing on rare earths and magnets created supply constraints for EV-motor lines; supply to India eased only by September 2025.

Source: SIAM report, ACMA



Resilient companies perform better in tough times, widening the gap with the rest

Amidst a decade of persistent turbulence, the question then is: does resilience actually pay, or do the companies that invest in building 'resilience' just carry higher costs for little reward? We tested this by comparing the margin performance of resilient suppliers against the rest, right through the shocks. We looked at the performance of a sample set of around 450 Indian auto component suppliers from FY15 to FY25, a window that spans upheavals such as the 2019 auto slowdown, COVID, and the commodity and energy spikes.

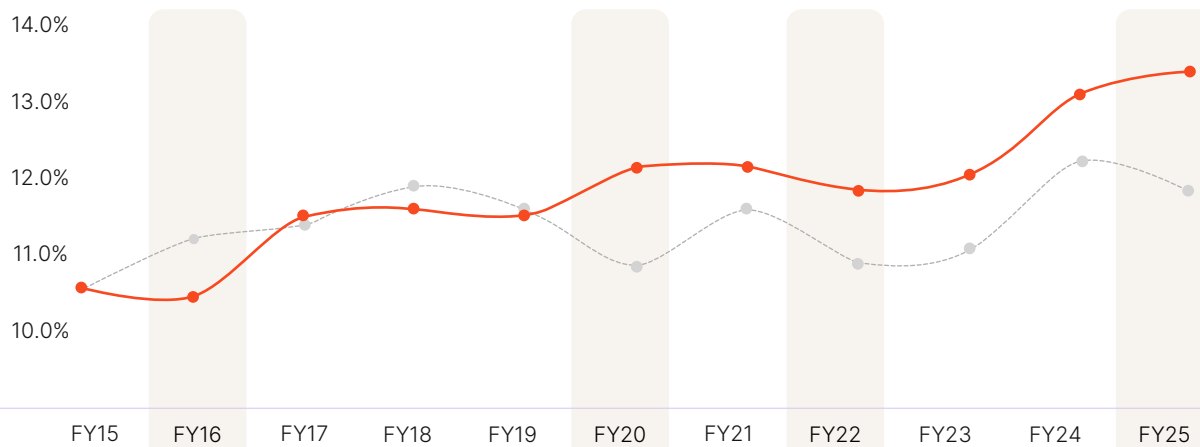
We split the sample into two groups. The 'Resilient Cohort' is the set of companies that built for resilience that allowed them to grow faster than the industry average across the cycle and despite the shocks (that is, YOY revenue outperformance versus the industry in at least six of the last eight years). For example, in FY24, when the auto component industry turnover grew about 10% YOY, a company whose revenue grew by more than 10% counts as one year of outperformance. We applied the same test for the last eight years for cohort formation. Of the sample set, around 75 companies make up the 'Resilient Cohort'. The remaining ~375 form the 'Rest Cohort'. We then tracked the average EBITDA margin of each cohort year by year.



Exhibit 1.7

EBITDA margin (%) gap between resilient companies vs rest

—●— Resilient Cohort - - - ● - - - Rest Cohort



Resilient cohort	10.5					12.1		11.8			13.3
Rest Cohort	11.2					10.9		10.9			11.8
Gap (pp)	-0.7					+1.1		+0.9			+1.4



Two things stand out. First, the Resilient Cohort did not start ahead. In FY15, both cohorts had a similar average EBITDA margin of ~10.6%. These companies are investing in technology, building capacity, and holding buffers, all of which cost margin in the near term.

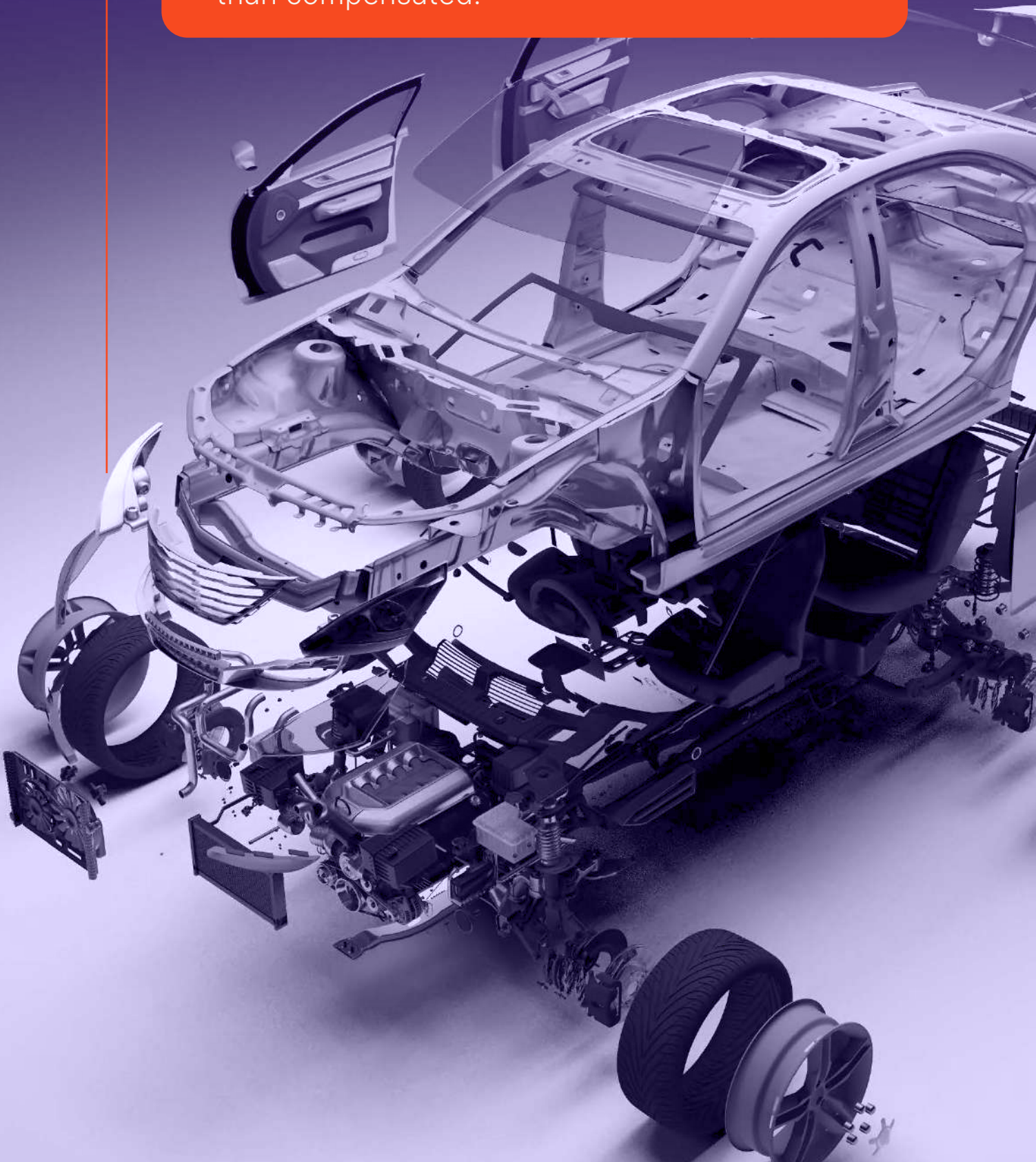
Second, that early margin gap reversed and then kept widening. Over the period, the Resilient Cohort lifted its average EBITDA margin by about 2.8 percentage points, from ~10.5% in FY16 to ~13.3% by FY25. Meanwhile, the Rest Cohort stayed broadly flat. The margin gap between the Resilient Cohort and the Rest, hence, kept widening. And it **widened most in the shock years: about +1.1 percentage points in FY20, +0.9 in FY22, and +1.4 by FY25.**

Resilience does pay through the cycle. It protects margins and then lifts them. The gap between the resilient and the rest opens up in the hard years, because the former absorb shocks better. **Resilient companies outperform in the long run and their short-term margin trade-offs are more than compensated.**





Resilient companies outperform in the long run, and their short-term margin trade-offs are more than compensated.





1.4 The journey ahead: Bigger ambitions, a longer highway

India's auto component industry has grown steadily, and there are still miles to go.

Over the last decade, India's auto component industry has grown faster in value (~12% a year) than the vehicle market has grown in volume (~3% a year), and its momentum is far from spent. **The growth ambition across the entire ecosystem is substantial. India's domestic vehicle market is set for five years of sustained expansion.** Passenger vehicles are projected to grow from ~4.6 Mn units in FY26 to ~5.4–5.8 Mn units by FY30, growing at 4–6% a year.

Two-wheelers are expected to grow from ~21.7 Mn units in FY26 to ~26–28 Mn units over the same period. Annual vehicle production is expected to rise from ~30–35 Mn units in FY25 to ~50–55 Mn by 2030, growing at 8–10% a year.³

The growth, in the auto component industry, will come not only from building more vehicles but also from capturing more value from each one as premium features and new technologies push up the value of every vehicle, and as India wins a larger share of global demand. On the strength of these forces, the industry aspires to cross **~\$200 Bn (~₹17.6 lakh cr) in turnover by 2030**,⁴ up from **~\$86 Bn (~₹7.6 lakh cr) today**. As this unfolds, six structural trends are opening up new pockets of opportunities across the sector.



Exhibit 1.8

Projections for India's vehicle market and aspirations for the auto component industry

PROJECTED

India's Vehicle Market (independent market projections)



Passenger Vehicles

~4.6 → ~5.4-5.8

Million Units from FY26 to FY30

~4-6% Per Annum



Two-wheelers

~21.7 → ~26-28

Million Units from FY26 to FY30

~5-7% Per Annum

ASPIRATION

India's Auto Component Industry (the industry's own aspirations for FY30)



Auto component industry size

~\$86 Bn → ~\$200 Bn

Overall turnover from FY26 to FY30

~2.3x by FY30



Component Exports

~\$24 Bn → ~\$45 Bn

Exports from FY26 to FY30

~1.9x by FY30

3. SIAM, Vahaan, Vision India 2047 – ACMA and SIAM; BCG Analysis; 4. Aspirations as per industry reports



Six structural trends powering the sector and creating new avenues of growth

The sector's next phase of growth will look different from the last. Some structural changes are **raising the component value embedded in every vehicle, or opening up entirely new component pools**, such as premiumization, electrification, rising electronics content, and increasing safety requirements. Others, meanwhile, are **widening the addressable market available to Indian suppliers**, such as growing exports and localization. Together, these shifts are creating new opportunities across both traditional and emerging components.

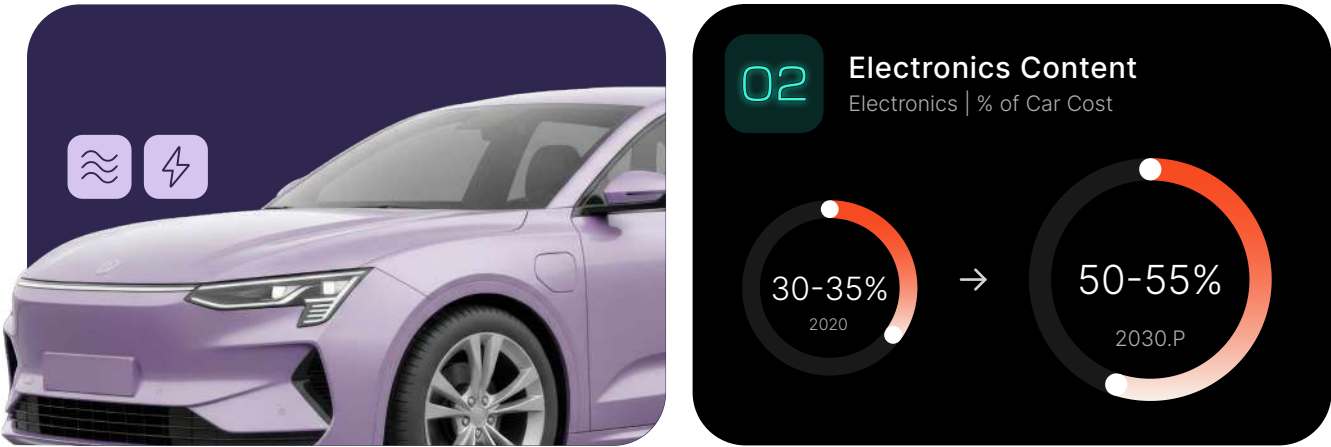
01 Premiumization

There is a rising Indian consumer preference for SUVs/premium vehicles. SUVs have gone from under 25% to over 50% of India's PV sales in just six years,³ with comfort and functional premium features now trickling down to mainstream models. An SUV carries far more component value than an entry-level hatchback, so this lifts component revenue faster than volumes.



02 Electronics Content

The pull towards more content is also visible in electronics. Every vehicle, whether ICE or electric, is becoming more electronic as ADAS, infotainment, sensors, and connectivity become standard. Globally, electronics are expected to rise from ~30–35% of car cost in 2020 to nearly 50% by 2030.⁵ Yet in India, electricals and electronics still made up only ~12% of component supply in FY25.⁶ This presents a key localization opportunity for India across sensors, ECUs, power electronics, ADAS, connectivity, BMS and related technologies.

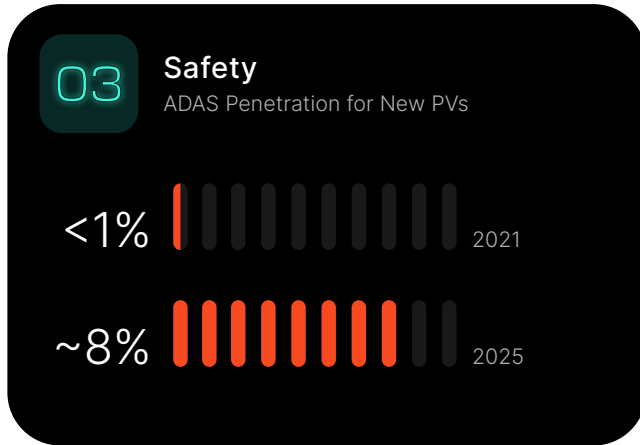


5. ACMA X BCG – Revving up Exports (Feb 2025); 6. ACMA Annual Report FY25



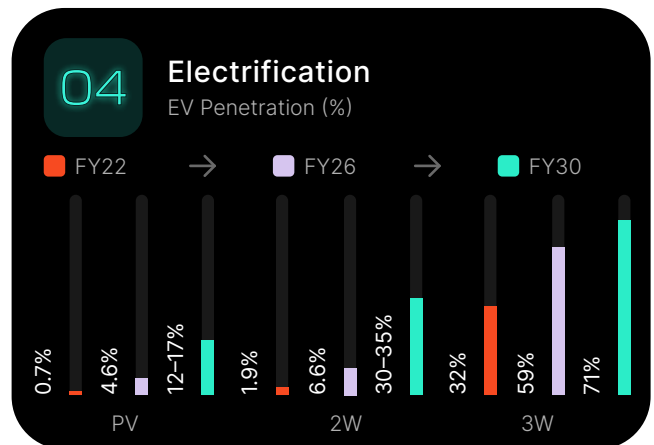
03 Safety

Buyers are now starting to ask about crash ratings the way they once did about mileage. That shift, along with the Bharat NCAP push and OEM brand equity, is driving stronger structures and restraint systems, opening a fast-growing component pool that barely existed a few years ago. This reshapes existing products and creates new categories, such as multi-airbag systems and seatbelt pretensioners.



04 Electrification

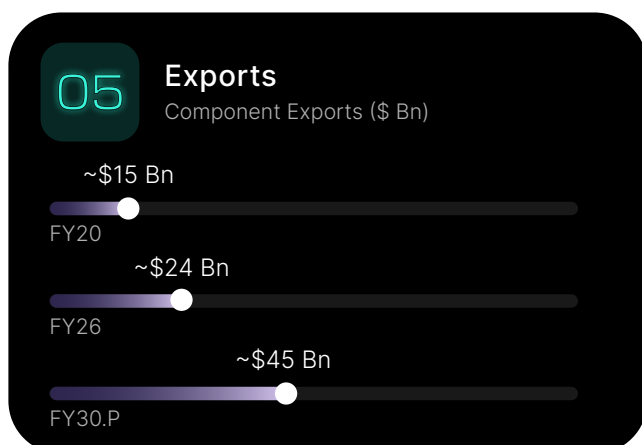
Electrification is going mainstream across every segment, driven by TCO acceptability, a wave of new EV launches, policy support, and infrastructure buildout. Three-wheeler EV penetration has already crossed 55% and is expected to reach 71% by 2030³. Adoption is accelerating across every segment as total EV registrations across vehicle categories rose from ~0.14 Mn (FY21) to ~2.5 Mn (FY26).³ This opens an entirely new component pool, such as batteries, e-motors, power electronics, and thermal management systems, that barely existed five years ago.



05 Exports

India holds under 5% of global component trade today, compared with China's ~12%, suggesting room for India to expand its share over time.⁴ Exports have already more than doubled over the decade, from \$11 Bn (~₹72,000 cr) in FY16 to \$24 Bn (~₹2.11 lakh cr) in FY26⁷. As global ICE supply chains consolidate, continued demand for traditional components gives India an opportunity to become a trusted global hub for high-quality ICE components.

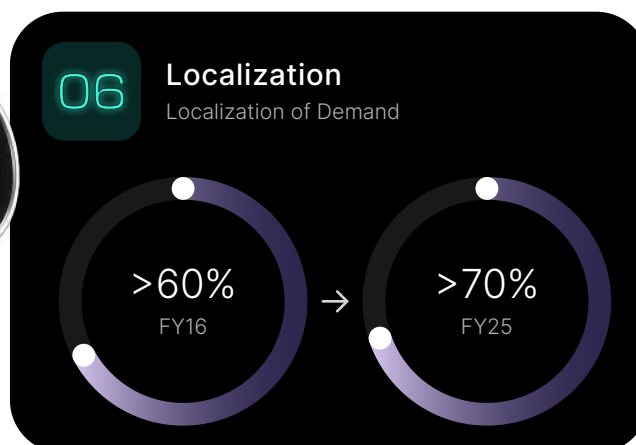
3. SIAM, Vahaan, BCG Analysis, Vision India 2047 – ACMA and SIAM; 4. Aspirations as per industry reports; 5. ACMA X BCG – Revving up Exports (Feb 2025); 6. ACMA Annual Report FY25; 7. ACMA Annual Reports FY16–25



06 Localization

India deepened localization even as demand surged, lifting the domestic share from around >60% in FY16 to over 70% today.⁷ This change is driven by a combination of policy support and targeted efforts by the sector. Even so, a large part of India's component demand is still met by imports, and localizing emerging EV and electronic components is a big ask as well as opportunity going ahead.

Taken together, these moves pull the industry in one direction: more content and capability inside every vehicle, and more of that value captured by Indian suppliers, at home and in export markets.



The pie is growing, but it is also changing shape

For decades, an Indian component maker could grow only by doing more of the same: manufacturing familiar parts and selling mostly to domestic OEMs. That is now being done by many. Electrification, rising electronics content, and exports, among others, are the forces driving the industry's future. They are each **carving the industry's value into distinct pools, and each new pool rewards a capability the old one never needed.**

The demand now is more fragmented across value pools than before. Gone are the days when a player could grow profitably simply by specializing. Now, it increasingly means building capabilities in new value pools while still running the core business that funds them.



1.5

Volatility is here to stay

Many of the past decade's shocks were episodic: they hit, disrupted operations for a while, and then passed. The journey ahead will look a little different: from how **critical materials are sourced and who competes for them to the skills, capital, and technology it takes to stay competitive**. These are **structural shifts that don't reverse and will become part of the baseline the industry works with**.



Exhibit 1.9 Structural shifts expected to stay

01 Raw material shocks might continue

- Several raw materials are still sourced from a single country
- For example, rare-earth magnets and graphite are almost entirely single-sourced

Why it stays?

- A risk of access, not price
- Building India's own capacity will take time

02 Demand super-cycles in adjacent industries

- Demand super-cycles in sectors that draw similar capabilities to auto, create new opportunities
- For several raw materials, auto competes with these new fast-growing demand pools, and hence RM pressures intensify

Why it stays?

- These demand increases are structural, so both opportunities and competition for inputs persist

03 Shifts in the labor mix

- Skilled labor for electronics, software, and mechatronics in short supply
- Workforce has more options with growth seen in several industry segments, and multiple options in services and gig work becoming viable

Why it stays?

- Skilled workforce pipeline is slow; the gap can't close in a year

04 A rising bar for suppliers

- OEMs now want design and development, not just build-to-print
- Quality, safety, and cybersecurity bars keep rising, as vehicles become software-driven

Why it stays?

- Vehicles only get more complex, so the bar won't drop

05 Shape of investment now more continuous, and not just one-time capex

- EVs, electronics, and software need continuous tech and R&D spend, not one-time tooling

Why it stays?

- A permanently higher capital bar, not a one-time hump

06 Digital and AI will open a performance gap

- AI moving into core ops: forecasting, supplier risk, quality inspection
- Adopters see 20–30% faster cycle time, ~25% fewer errors, ~15% lower cost

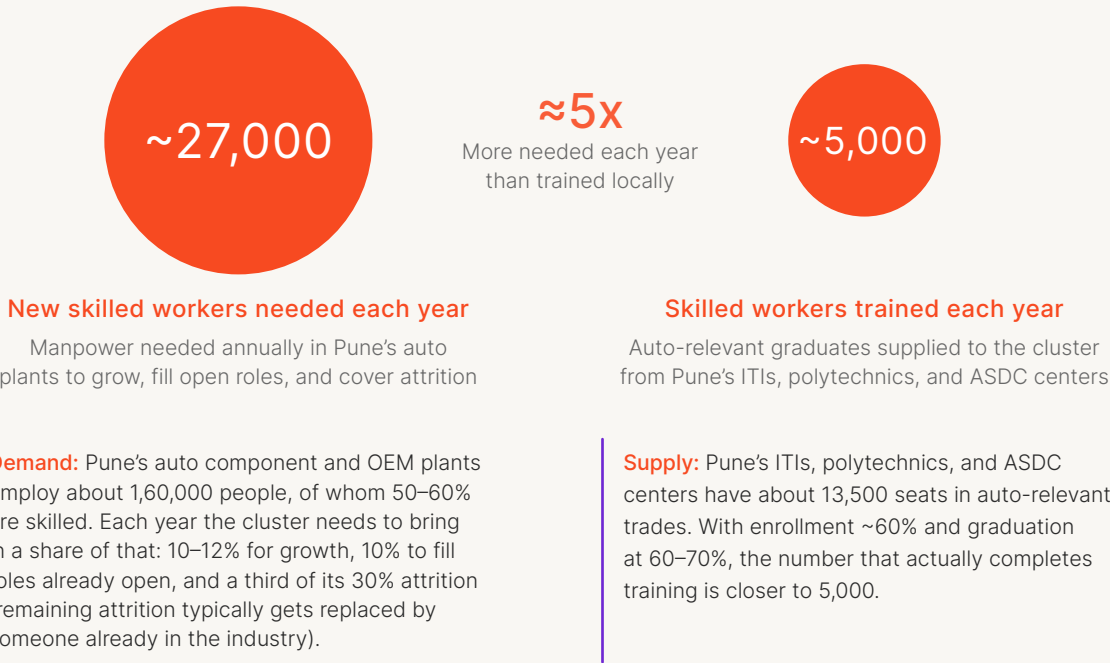
Why it stays?

- The advantage compounds, so early adopters pull ahead



Exhibit 1.10
Skilled manpower supply vs demand for auto industry in Pune

Each year, Pune’s auto cluster needs about **five times the skilled workers** that its local training system produces.



Source: Supply: Directorate of Vocational Education and Training, Maharashtra - ITI Directory for Centralised Admission 2026–27 (Pune region, government and private ITI trade-wise intake). Demand: MoSPI, Annual Survey of Industries 2023–24, Maharashtra, NIC-29 motor vehicles/trailers; NCAER manpower study.

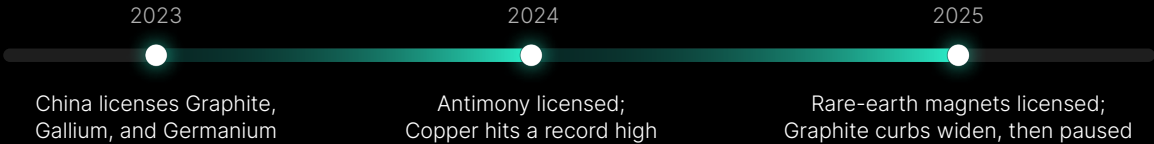




Exhibit 1.11

Raw material shocks becoming structural as critical inputs get concentrated, policy controlled, or drawn in demand super-cycles

Select Raw Material Shocks (2023–2025)



Raw Material

Impact

Rare-earth Magnets

China places rare-earth magnets under export licenses in 2025; its exports fell ~74% (May 25 YOY). China controls ~90% of global processing.

- India sources ~85% of these magnets from China, and makers were left with few weeks of stock (2025).
- PV and two-wheeler makers cut and deferred EV output; a leading OEM scaled back its new EV model output plans by about two-thirds (2025).

Graphite

China put graphite under export permits in 2023.

- Battery-grade graphite processing is almost entirely concentrated in China.
- India imports nearly all its lithium-ion cells; the domestic cell push is underway, but the EV-battery chain has high exposure to China-linked supply chains.

Copper

LME copper hit an all-time high in May 2024 and rose to fresh records in 2025, underpinned by a structural rise in demand.

- EVs, power grids, and AI data centers all compete for the same copper; the IEA projects a copper supply deficit of ~30% by 2035.
- India has been a net copper importer since 2018; price volatility results in margin pressure, supplier's costs pass-through, and redesign to cut copper use.

Gallium, Germanium, Antimony

China places graphite, gallium, and germanium under export licensing in 2023, and antimony in 2024.

- International prices rose sharply after the controls (gallium was ~2.5x pre-control prices in 2025).
- India imports these, and all three are on its list of 30 critical minerals (2023); a large Indian battery maker reported a fall in expected income due to higher antimony prices.

Source: China MOFCOM/GAC export-control announcements (2023–25); IEA Global Critical Minerals Outlook 2025; LME; India Ministry of Mines critical-minerals list (2023); USGS; Fastmarkets; Reuters; Data as at Aug 2026; China's October 2025 curbs are suspended, not withdrawn, until 10 Nov 2026.



1.6

Summary

Taken together, some takeaways emerge about what the industry has achieved over the last decade and what it carries forward:



India's auto market has grown strongly over the past decade to become the world's third largest, with domestic vehicle sales rising from ~20 Mn (FY16) to ~28 Mn (FY26), powered by the strength of its domestic demand.



India's auto components industry has anchored this growth, growing at ~12% a year over the last ten years, reaching ~\$86 Bn (~₹7.6 lakh cr)* in turnover by FY26 and becoming one of the country's strongest industrial success stories.



The growth was delivered through a period of constant disruption, with a shock landing almost every year; volatility is becoming the new normal rather than the exception.



Resilient companies outperform in the long run, and their short-term margin trade-offs are more than compensated. We saw resilient companies gain ~1.4 percentage points margin advantage over others by FY25.



The opportunities are huge, with the industry aspiring a ~\$200 Bn (~₹17.6 lakh cr)* turnover by FY30, and growth coming from vehicle sales, more value per vehicle, and a larger share of global demand.



Two themes will be constant: some disruptions are now structural, they will become part of the baseline the industry works with; and the value is getting divided into multiple pools, each rewarding a distinct capability.

The sector has earned the right to be ambitious. The question now is whether its operating models, capabilities, and leadership are ready for an environment in which volatility is embedded. To understand that, we turned to the leaders running the industry today.

* Basis Average conversion rate in that FY: FY26 – ₹88/USD; FY24 – ₹83; FY16 – ₹65.5

02

At the Crossroads

The choices, the risks, and what
the resilient did differently





2.1 Disruptions the industry faces

India's auto component industry is riding its strongest growth wave in years. At the same time, it's navigating a pace of disruption it has never faced before. As the value pool splits (ICE and EV, mechanical and electronic, domestic and export) and last decade's shocks harden into permanent features, every company is being asked to make active choices across the whole business at once. **A company can no longer keep doing what worked and expect that to be enough.**

Voice of industry leaders

To understand how the industry is navigating this, BCG and ACMA reached out to over **60 companies** through a **survey of CXOs** as well as **detailed conversations** with the leadership teams. These companies vary widely in size, from ₹100-cr specialists to multi-thousand-crore Tier-1s, serving across customer segments.



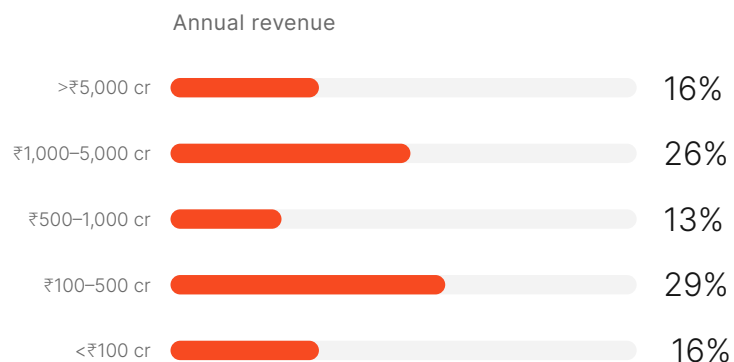
Exhibit 2.1

Split of company size and customer segments



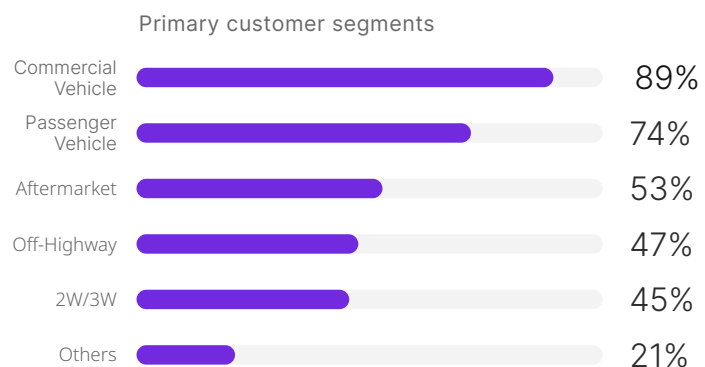
Across Revenue Segments

Coverage spans large, mid-size, and small companies



Across Customer Segments

Responses cover every major end-market



Throughout this section, respondents are grouped into three size bands:¹ **Large, Medium, and Small**

1. Large: High revenue, high complexity, and multi product; Medium: Mid-sized, Medium complexity, and three to five products; Small: <500 cr revenue, low complexity, one to two products



Disruptions the industry has experienced

The industry faces disruptions across the value chain, from raw material and the shop floor to the customer's order book. Across the interviews and the survey, three stand out for the **impact they have had: raw material and energy cost spikes, manpower shortage, and demand volatility**. What makes these issues significant is that no company is too big, or too small, to feel them.



Exhibit 2.2

Overall and cohort-wise ranking of the disruptions that hit the hardest
(Respondents had to choose 3 from 20 options)



Top 3 disruptions that hit the hardest

			Large Companies	Medium Companies	Small Companies
Raw Material & Energy Cost Spikes		76%	87%	88%	59%
Manpower & Labor Shortage		61%	67%	50%	59%
Demand Swings/ Volume Volatility		35%	40%	25%	35%



Other disruptions cited

			Large Companies	Medium Companies	Small Companies
Tariff & Trade Policy		32%	47%	25%	18%
Logistics & Freight Disruption		29%	27%	50%	18%
Forex Volatility/ Rupee Depreciation		16%	13%	50%	–
Over-dependence on 1–2 customers		16%	20%	–	35%
COVID Impact		13%	–	–	24%

 Called out by all companies, regardless of size

These are, however, not the episodic shocks of the past decade, where a bad quarter is soon forgotten. Volatility has **become more structural**: input costs have hardened permanent cost pressures, the manpower shortage deepens year on year, and demand has become harder to predict, which is precisely why resilience must become an integral part of how a company operates.



Under the hood: A closer look at the key disruptions

We have tried to understand how the jolts have impacted operations, why they're here to stay, what resilient companies did differently, and what continues to hold others back. **Different patterns emerge across each theme.**



Supply Chain Shocks

Around 80% of companies named supply chain shocks as the issue that hits them the hardest. This includes raw material shortages, spikes in commodity prices, and increasing power and energy costs. Not all shocks stem from one-off black swan events like semiconductor chips and rare-earth material shortages. Several are company-specific and much more frequent.

Approximately 95% track 'commodity and input cost risk' with data, although many companies are still converting that visibility into systematic action. Smaller suppliers often face greater resource and qualification constraints. Two-thirds of the small companies surveyed, compared with about one-third of the large companies, reported that they had not qualified a second source for most critical inputs.

The gap exists because of four key reasons:



A. Tracking limited to commodities and index prices

Several companies track raw materials and commodities at the index pricing level. But structured data that would allow them to track concentration, business continuity risks, and variability in performance across the supply chain does not exist. This makes a data-backed view of where the risks actually lie hard to get.



B. Systematic tracking of risks at sub-tiers level missing

A supply chain is only as resilient as its weakest link. Most shocks originate at the sub-tier level, yet nearly two in three companies lack a systematic sub-tier risk assessment in place, one with a consolidated view and a regular review cadence.



C. Companies don't always have flexibility

Having a second qualified source, an alternate sourcing country, or a buffer stock costs time, money, and leadership bandwidth even in normal times. Adding a second source often needs OEM approval, and the effort of getting that source validated, both internally and with the OEM, stops many suppliers from even trying. An alternate source is usually more expensive too. Hence, a company often has to keep allocating some volume just to sustain the relationship, so it's available to lean on when supply tightens.



D. Option to switch to alternate material isn't always available

Substituting or testing an alternate raw material, or having the ability to redesign a process around one, lies with engineering and R&D. This may not be realistic initially for smaller companies, but many mid- and larger-sized companies have not invested in building such a flexibility. For instance, build-to-print suppliers, who don't own the design, are completely dependent on the OEM team to shift to alternate materials.



What sets **resilient** companies apart

Bringing flexibility into the system

As one large, diversified Tier-1 company leader said, ‘Some deliberate under-optimization is simply the cost of being able to meet demand when a shock hits. Over-optimizing takes away the flexibility you need when that shock actually arrives.’



A mid-sized seating system manufacturer sets inventory cover levels for its most critical imported inputs, both for normal times as well as in anticipation of shock periods. The moment early signals appear, it increases cover from one month to two. Keeping structured data on demand variability and supplier lead times allows for such optimum inventory decisions. When the Middle East conflict started earlier this year, such early moves paid off: it kept supplying when peers ran short, and, as a result, customers committed to more business.

Another small-sized foam pad manufacturer, significantly dependent on imports, has an internal policy in place to have at least two pre-qualified suppliers for each critical RM. These are diversified across countries, even at slightly higher commercials, so that supply continuity in situations of country-specific disruptions can be managed.

Investing to face adversity

Companies tell us that they have started investing far more in their value-add compared to a few years ago. Engineering, R&D, assembly, and machining capabilities have all seen more investments. This deepens their value-add for customers, makes demand stickier, and expands margin pools to give flexibility in tough times.



A large driveline manufacturer has heavily invested in engineering, so that when supply breaks, it can re-engineer faster. During the rare-earth material crisis, the team could move from use of heavy rare-earth magnets to light rare-earth and rare-earth-free motors within two months, significantly reducing revenue losses at a time when others were struggling.

A large casting and forging manufacturer has been designing processes that let any qualified supplier replicate them. The aim is to control the process design, so that it is not cornered by a single supplier in times of disruption. For key structural components, the company constantly experiments with different material grades to match the required yields and yield strengths.

Developing robust monitoring mechanisms

Some companies have already started, and others are planning, to run regular risk assessments on their sub-tiers across fixed themes (for example, financial health, single-source and switching risk, geographic exposure, management depth). This needs to be paired with clear ownership, regular governance cadence, and a clearly defined escalation matrix, so that companies can step in early on the critical-but-fragile links.



A mid-sized auto component manufacturer built a multi-themed supplier radar—involving financial outlook, geographic concentration, and supply dependency—to score suppliers at the subcategory level and flag risks early, moving from a reactive to preventive approach.



Collaborating when adversity strikes

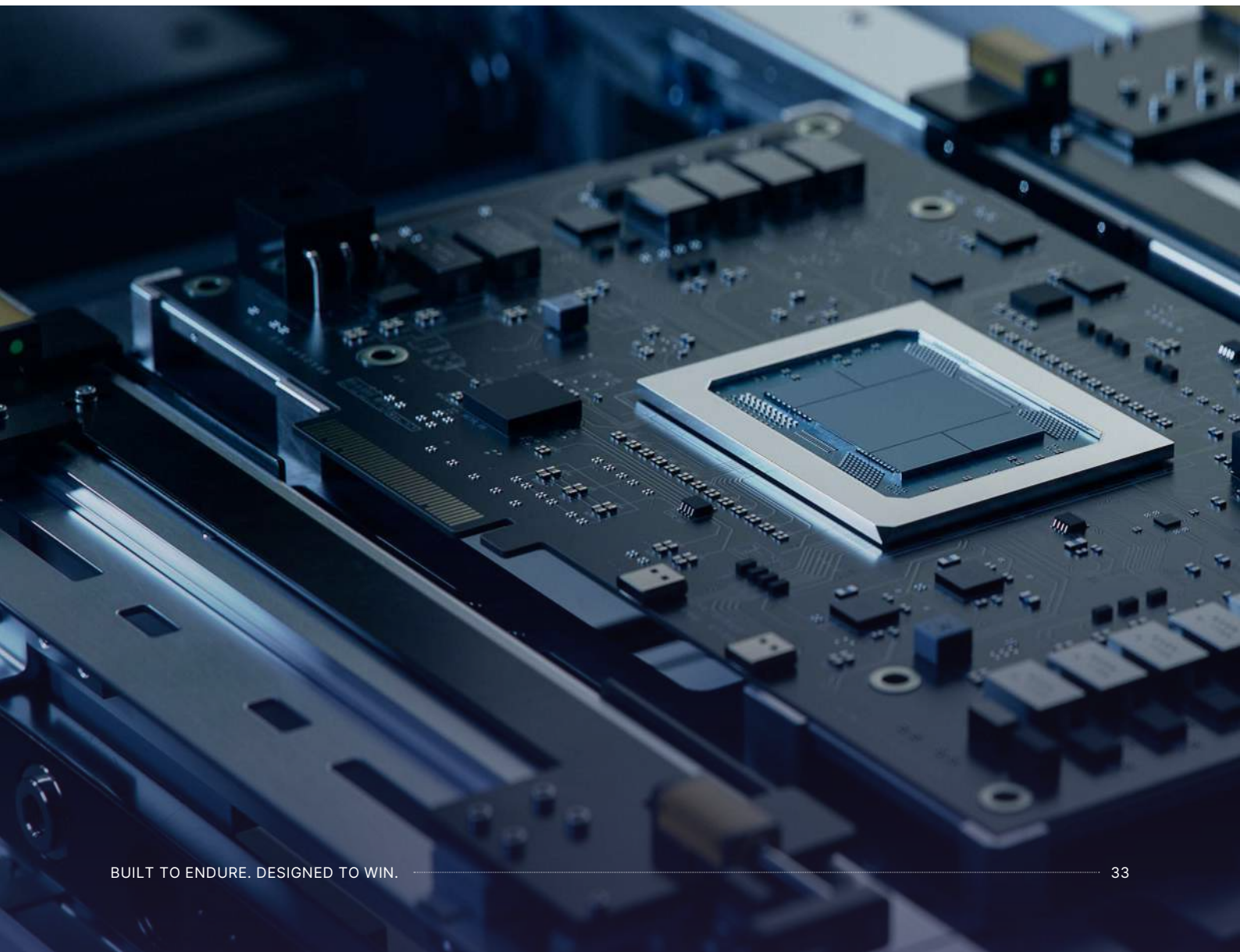
Sometimes the problem is too large for one company to solve, especially where a single supplier may not have the scale, visibility, or leverage to solve the problem alone (for example, energy or chip shortages). This, then, requires a coordinated effort across OEMs, Tier-1s, and Tier-2s. Larger players can map where the dependency sits across Tier-2 and -3 companies, and use their scale and relationships to secure supply, with support from the OEMs and Tier-1s.



A large brake system manufacturer's exposure to LPG was small, but its suppliers' was large. When the war triggered an LPG shortage, it started impacting suppliers' heat-treatment capabilities; no single supplier could solve it alone. The company intervened by redirecting stock through large LPG distributors, with help from OEMs to the Tier-2s and -3s.

A leading OEM went directly to the chip makers when its Tier-1s, who bought through traders, could not secure chips. It aggregated its entire base's demand to secure the bulk of the supply.

Supply-chain shocks of the past have taught the industry a hard lesson: these events are expensive for any company that doesn't have plans in place. The good news is that companies have started to act, closing gaps in second sourcing and material flexibility. But not every problem can be solved alone; some will need government, industry, OEMs, and suppliers to work together.





Manpower and Labor Shortages

Around 60% of companies called out manpower and labor shortages as one of their biggest issues. It hits large firms (67%) and small firms (59%) almost similarly.

Approximately 82% of companies do track manpower risk, but that is limited to solving for daily- or weekly-level availability: how many workers showed up this morning against how many were needed. It rarely takes a mid- to long-term view while evaluating the next quarter's requirement and what skills that gap breaks into.

The ability to track also differs by size. Most large companies have a system in place to monitor shortages, whereas in small companies the process is largely ad hoc with only ~44% reviewing shortages formally. Leaders described three related challenges:



A. Non-availability of skilled workforce

Even a company with no attrition issues and a well-fitted team faces availability challenges. Across clusters, manpower availability is constrained, as multiple industrial segments see growth in India, more local options emerge across states, and employment options emerge in the service and gig economy. Migration patterns are limiting out-of-state workers, and plants hit a hard ceiling on local headcount regardless of the budget. Another factor that has been playing out of late is a large number of workers opting for jobs in the service sector, which gives them flexibility and chances of earning more.



B. Skill deficit and talent mismatch

The harder problem is finding the right person to fit the role. This gap does not show up in headcount numbers, which is exactly why it persists for longer than attrition does and is much harder to solve for. The gap varies by role and institution, and companies also recognize the need for stronger onboarding and on-the-job development. Closer collaboration among employers, ITIs, polytechnics, and training providers can improve curriculum relevance and shorten the path to proficiency. As the MD of a seating system manufacturer puts it, 'A lot of practical, plant-specific training still needs to happen after hiring ITI and diploma holders; a closer collaboration with training institutes on curriculum could shrink this gap.'



C. High attrition of mid-management roles

Leaders cited attrition of 18–20% in management roles and higher rates for the blue-collar workforce. This problem is relevant across cohorts, but has affected smaller companies more because people have been shifting to larger companies within as well as outside the sector. Pay, career progression, shift patterns, commute, location, and the nature of work all influence their choices.





What sets **resilient** companies apart

Manpower planning across capability types and talent pools

Companies are diversifying recruiting channels, talent pools, and catchment areas by expanding recruiting networks, thus minimizing impact from regional shifts.

 **A casting player** tracks the local workforce mix and proactively plans recruitment from multiple regions through tie-ups with polytechnics. Planning is undertaken with a 10% buffer to counter any ad hoc problems.

Another **braking parts company** has built dedicated recruiting networks with polytechnics in other regions specifically to avoid over-reliance on one region.

Focus on capability build and skill development

Companies have started training and upskilling their workforce. Larger companies are setting up own skill development centers that handle certifications and diplomas. Smaller companies, meanwhile, are training manpower across multiple skills, benefiting both the employee and the company.

 **A small auto component manufacturer** ensures the workforce roster is designed in a way that each employee gets skilled in multiple areas (such as machining, maintenance, and assembly) to build in flexibility. The focus is on OJT (on-the-job training) for new joiners, where one supervisor is dedicated to train the manpower.

Use of automation to strengthen continuity and performance

Automation, looked at from a sustenance point of view, solves two problems: it cushions against shortages and it reduces exposure to hard-to-fill, repetitive, or high-variability tasks while improving continuity, safety, productivity, quality, and cost. Some encouraging signs are already visible. In the survey, nine out of ten companies said they are committed to building manufacturing and process capability, including IoT and automation, which is the direct lever against headcount dependence.

 **A mid-sized piston manufacturer** redesigned a new plant layout to reduce reliance on scarce skilled labor from roughly eight operators to two. This is backed by an in-house low-cost automation team building several machines a year. It has earmarked more than ₹40 cr for automation, and increased the payback threshold from three to five years.

A casting player has a thumb rule: if the cost of the automation is within 3x of the productivity gains, they go ahead with the investment. The 3x multiplier accounts for the impact on throughput from manpower absenteeism and attrition.



Expanding the pool you hire from

Diversifying recruitment pools is a critical lever emerging across discussions with companies of all archetypes. For example, women remain underrepresented in many auto component operations and represent a significant talent addition priority. Higher participation depends on safe transport, secure and well-lit facilities, appropriate amenities, accommodation where relevant, equitable workplace policies, and access to technical development.



A large braking parts manufacturer provides secured, dedicated accommodation for out-of-state workers specifically to support women's participation, alongside a mechatronics-focused diploma program and an internal skill development center for upskilling.



Demand Volatility

One in three companies was hit hard by demand volatility. And the impact has been similar in both small and large firms. The drivers are no longer one-off events but permanent features of the market with product lifecycles becoming shorter and consumer preferences changing faster (for example, OEMs changing model mix, ICE–EV split continuously moving).

But what's interesting is that even though ~95% of companies track demand swings and volume volatility with data, they are still not able to manage the shocks.

Around 34% of companies depend on one or a few customers and ~45% don't own their design (build-to-print or co-develop). These two vulnerabilities travel together: of the firms dependent on a few customers, nearly two-thirds also don't own their design. So, when a concentrated customer leaves, the design leaves with it, and the supplier is left with a line it cannot re-point and a customer it cannot easily replace. It is disproportionately a small-firm problem: they are **nearly 3× as likely to be concentrated with a few customers (53% vs 19%) and more than twice as likely to lack design ownership (65% vs 29%).**

Four things are holding companies back:



A. Foundational planning data remains uneven

Leaders report persistent gaps in master data, inventory accuracy, and planning discipline, even in sophisticated organizations. Without solving for these, any planning effort won't hold up. Even if data hygiene is maintained at manageable levels, companies are not agile enough to change processes quickly.



B. Supplier collaboration hasn't gone deep enough

Customer–supplier collaboration rarely goes beyond order fulfillment. Very few Tier-1s are working with suppliers on improvement programs to build resilience to volatility. A lot of the smaller companies are given targets for metrics like OTIFs and quality, but support is rarely extended on the processes or deployment of the right tool. Implementation of supplier development programs will enable collaboration. And companies don't need to build these from scratch; ACMA's existing programs can be easily leveraged.



C. Lack of demand-forecasting capability

Most auto component players plan their production based on the number the OEM hands over. They rarely overlay this with their own experience. There is no seasonality, trend, or view that the forecast itself could be inaccurate. As one supplier says, 'End customer forecasts now have more variability, especially at a part-model level.' When the customer's forecast changes every few weeks, planning built directly for it breaks down. It also becomes difficult for the S&OP team to plan production when different sources provide different inputs. Thus, problems exist at two levels: one, companies follow customer forecasts without building in past trends or other forecasting inputs, and two, there is no single source of truth to refer to. There is, hence, a need for a single source of truth with an intelligent layer.



D. Production lines not flexible enough

Two in three companies cannot redirect a line quickly. Of the 95% who track volatility, two-thirds have capacity that's blocked and optimized for a specific product or customer. In other cases, the impediment is qualifying with new customers. This often exacerbates the impact when an anchor deviates from its forecast.

What sets **resilient** companies apart

Measuring forecast bias

Companies are using a data-backed intelligence layer on the forecasts they receive from customers. Factors like past trends, seasonality, and new launches are being taken into account to calculate production numbers.



Leaders are building their own view on top of the OEM's number instead of taking it at face value. The planning head of a large Tier-1 manufacturer says, 'We don't just take the OEM schedule. We build our forecast on a three-month trailing average, then layer in seasonality: the festival build-up, the same period last year, the model run-out. This helps us plan production better, give more accurate projections to our suppliers, and manage working capital more efficiently.'

Transforming planning processes

Resilient companies evolve their planning process—from the quality of data that is an input to the cycles they plan for and how it cascades within their networks. Demand (baseline, variability) and supplier (TAT and variability) data are the key planning inputs. Production and material plans are tightly synched and not manually altered ad hoc. Clear segmentation exists across SKUs to balance forecast-based planning and replenishment models. Planning processes are 'high frequency' to adjust for shifts in customer demand patterns.



A large Tier-1 auto component manufacturer was finding it difficult to adhere to system-based planning because of high demand fluctuations. This led to frequent mismatches between physical and system stock. To counter this, it started system-enabled locks on input parameters (for example, safety stock, BOMs), adopted a perpetual inventory system, and even redesigned the system to move from a monthly to a fortnightly MRP run to counter for changing demand.



Designing manufacturing flexibility

Companies are building flexibility into the factory itself, instead of locking lines to a single product or customer.

A mid-sized piston manufacturer built flexibility into the factory itself by favoring general-purpose machines that can be redeployed across parts, keeping changeovers to a few hours, and running an in-house team that builds its own machines. Most lines run at full capacity now, which has de-risked the portfolio by spreading it across more customers.

A leading manufacturer of precision forged differential gears treats design and engineering agility as the safety net. Since it owns the design and can quickly re-engineer a part, it is never locked into one customer's specification. When key customers have left the account, they have moved to newer ones.

A Tier-2 player shows it doesn't have to be self-funded: it built its R&D partly on government innovation schemes (DSIR and DST concessional loans, repaid only after commercialization), lifting R&D spend towards 2.5% of the turnover and converting it into patents. Owning the patent meant it wasn't dependent on just one customer but could also attract new customers with a novel design.

Reducing concentration where commercially possible

Companies are realizing the concentration risk they carry, but reducing it isn't feasible for all. Despite this, some companies are slowly trying to diversify their base.

A mid-sized precision automotive component maker does not allow any customer to become more than 20% of its total revenue. This has helped limit damage when a European OEM planned to exit the market.

A large casting maker once had a single customer accounting for essentially 100% of its die casting business. Today, that customer ranks third. This was done through structural diversification, that is, adding new customers.

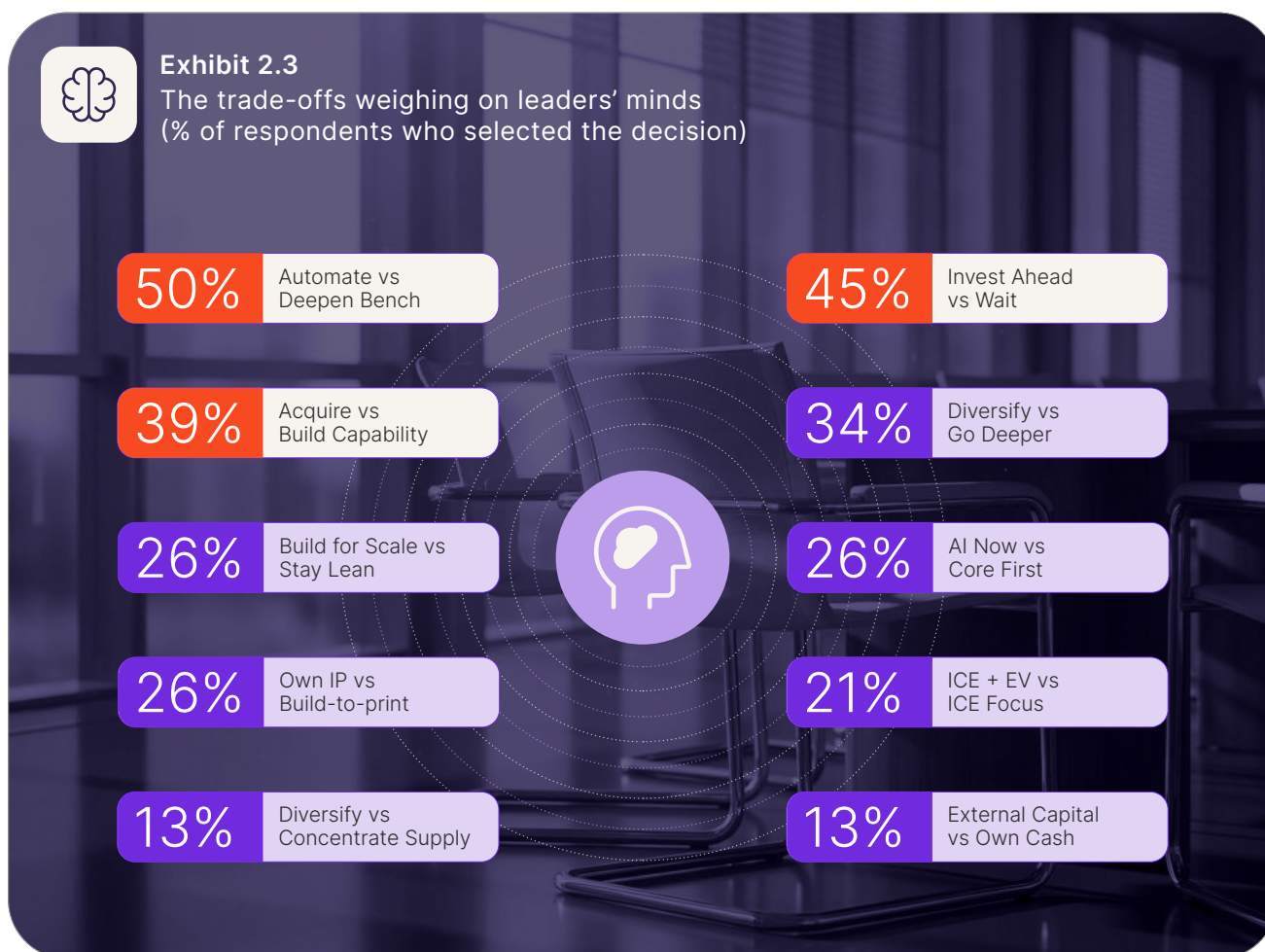
After diagnosing gaps, the industry is now making investments to close them and to counter demand volatility. The intent is real. Capital has been committed while capability is still being built. **Around 89% are committed to building flexibility for new customers and geographies.**





2.2 Wave of hard choices emerges

Disruptions have forced companies to adopt a broader set of strategic choices. Leaders are weighing decisions on capacity, technology, customers, talent, and capital allocation at the same time, often with incomplete information and limited room to reverse course. Our survey responses show that no single choice dominates; each company faces a different combination. In interviews, leaders consistently recognized the importance of these decisions, while also acknowledging that day-to-day operating pressure limits the time available for deliberate consideration.



For most of these decisions, 20–40% of companies say they are actively weighing them. And no single decision is top of mind for more than half of all companies. This shows that every company is juggling several of these calls at once, not just one or two.

These are no longer purely operational calls. They are strategic bets that will define who thrives over the next five years, and the leaders we talked to recognized the importance of these choices. However, they don't get as much time as they would like to spend on them.

Within the survey sample, companies with a current three- to five-year plan are more likely to report stronger growth. More than half of companies with such a plan reported growth above 10% per year, compared with none among respondents whose plans were outdated or absent.



2.3 Leaders juggle between firefighting and strategic planning

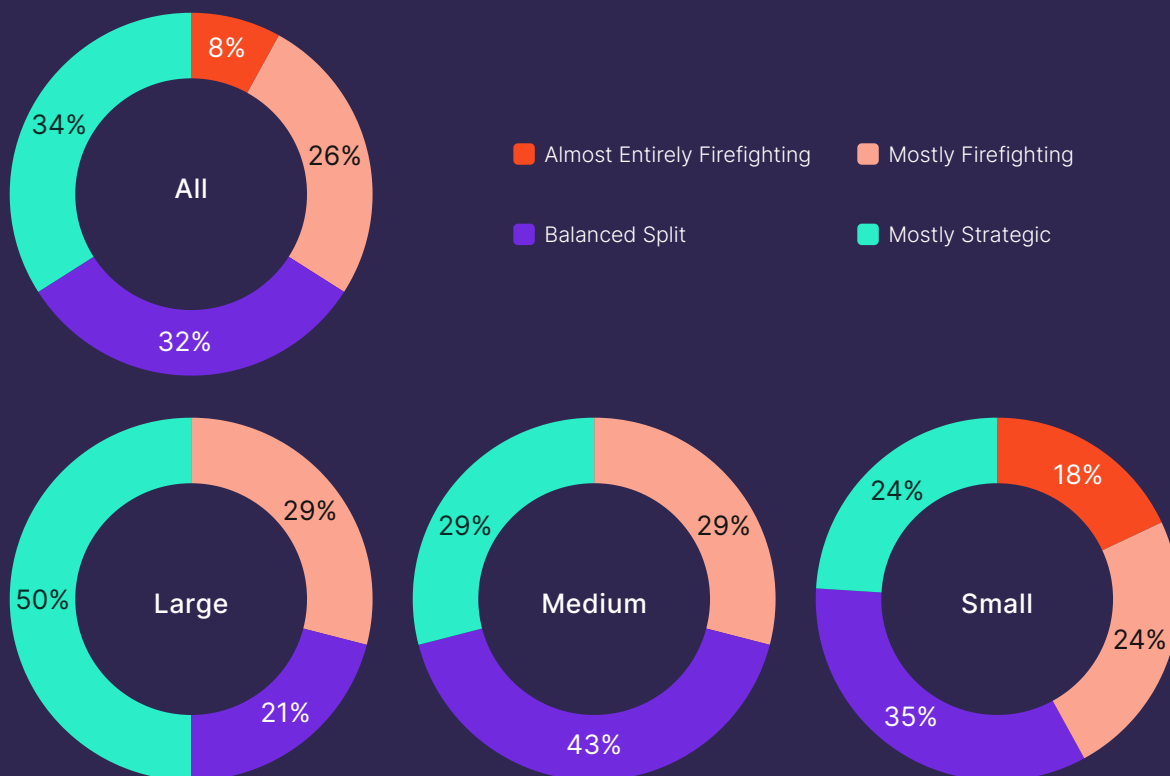
Good decisions require time and effort, and leaders need to carve time out of their busy schedules and plan. **But a third of the leaders we spoke to are busy firefighting**, pulled into the urgent day-to-day with little room to think about the choices mentioned earlier. This is even starker in small companies where more than 40% of leaders spend time firefighting. Leaders realize they aren't devoting much time to strategic initiatives, but they are unable to act on it.



Exhibit 2.4

Where leaders' time goes

Urgent day-to-day vs mid/long-term



Source:
Interviews and Surveys

We also learnt that **companies with a current three- to five-year plan are more likely to report stronger growth. More than half of such companies grew at over 10% a year versus none whose plan had long expired or never been implemented.** The practice of looking ahead, not firefighting, is what tracks with growth.



2.4 What sets the resilient ones apart

We saw specific resilience practices at individual companies, but a broader theme kept surfacing. It is the mindset that shows up repeatedly in how they make decisions. Three key themes emerge:

What the industry is doing

Investing in capability and not just capacity

Theme 01

Resilient companies acted before a shock forced them, even when it cost more in the short run. They invested early in R&D, technology, and automation; they focused on capability and not capex alone.

- A mid-sized fastener manufacturer has been investing in automation without tagging a definite ROI target to it. The belief that long-term advantages significantly outweigh costs, particularly from the perspective of manpower and sustenance, is now part of the company's core.

Planning for the long term

Theme 02

Resilient companies made decisions keeping a multi-year horizon in mind, even when it meant turning down easier, nearer-term wins.

- A mid-sized piston manufacturer does not allow any single customer to exceed 20% of its total revenue, deliberately walking away from concentration even when it's the path of least resistance.

You measure what you track. You act on what you measure

Theme 03

Resilient companies inform decisions on sound, accurate, and objective data—right from long-term decisions on capacity to near-term calls on inventory buffers and safety stocks.

- A mid-sized Tier-1 company was dealing with system vs physical inventory gaps. To counter this, it designed a perpetual inventory system that ensured critical SKUs are being monitored daily and gaps resolved immediately.

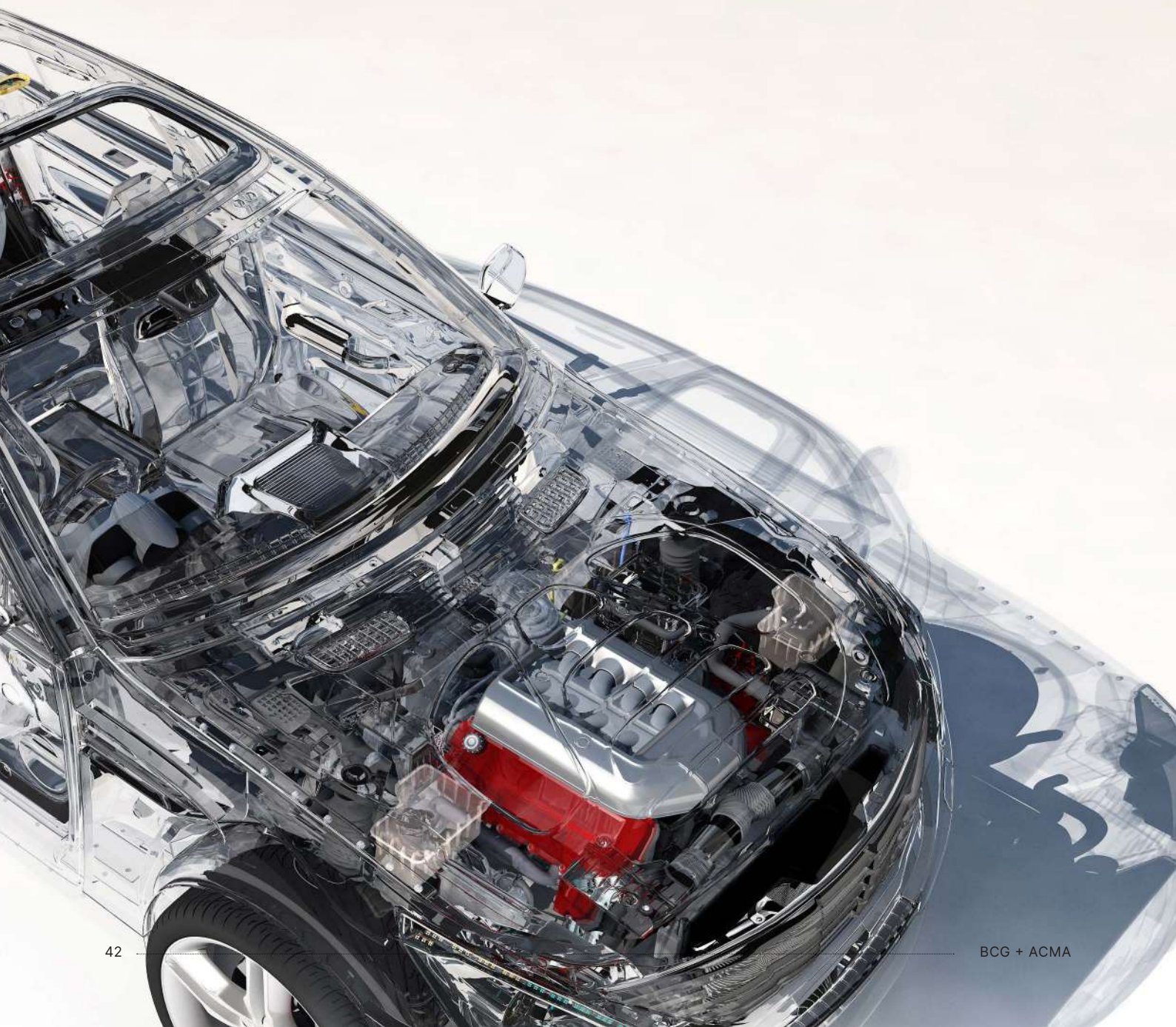


2.5 Despite pressures, the industry backs itself to keep growing

Despite the pressures of choice and time, the mood of the industry is unmistakably bullish: **around 90% agree they are 'in the right place at the right time'**. This is across each of the large, medium, and small cohorts. The confidence is real, but leaders are also clear about the current scenario: **nearly 78% also admit that business is riskier than it was a few years ago**.

Leaders also know where the next leg of growth will come from. A strong domestic market remains the engine, cited by more than 60% of the respondents. Exports are next, cited by 55%. With India still under 5% of global component trade, the headroom is significant. Rising content per vehicle, premiumization, and adjacent segments will add further value on top. Growth will come not just from more vehicles but also from more value per vehicle.

The industry knows where it wants to go. What is missing is a shared map for how to get there, one that works differently for a ₹100-cr specialist and for a multi-thousand-crore Tier-1. This is what we discuss next.

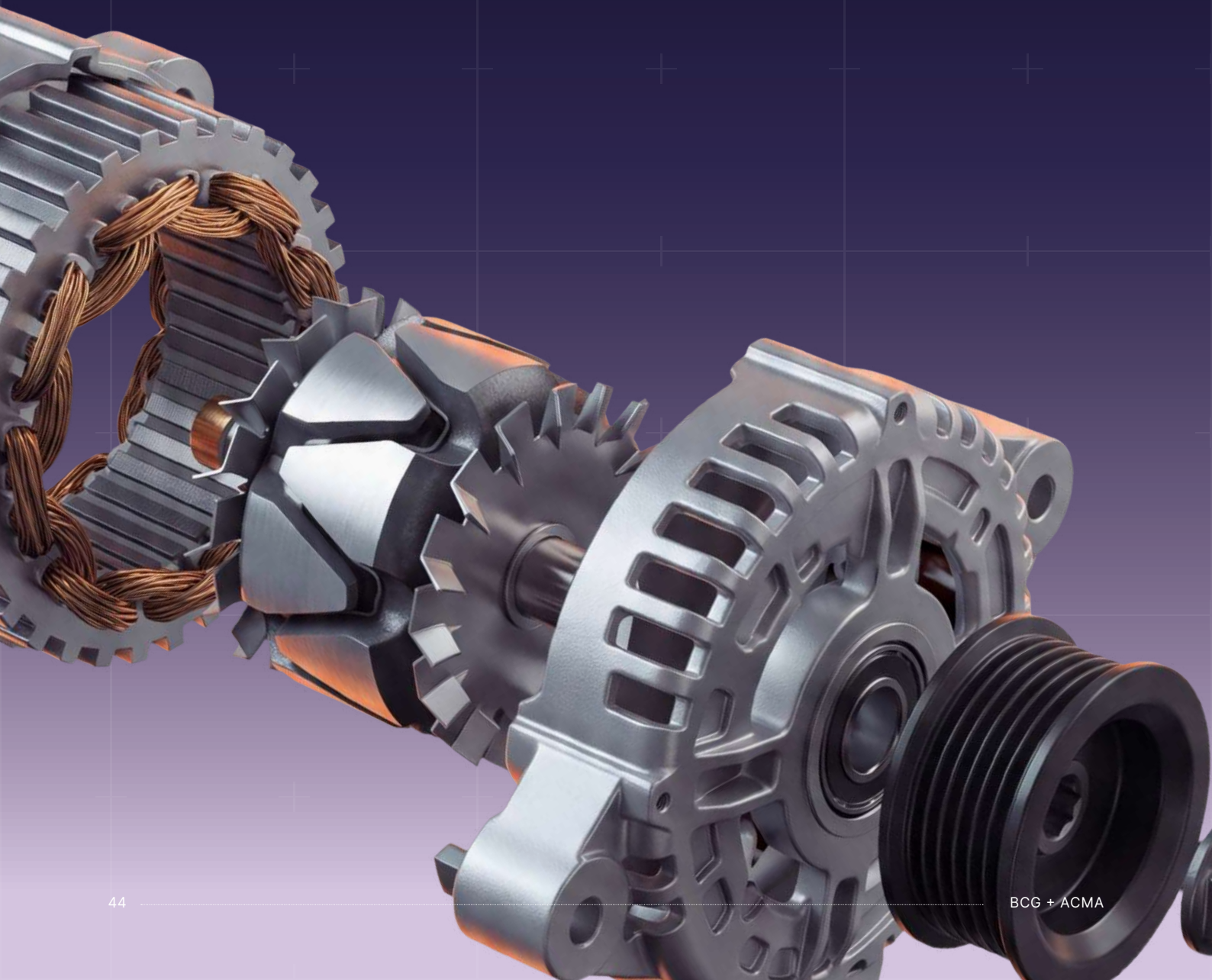




03

The Resilience Roadmap

Five axes that decide how well a company withstands shocks and what companies can do about them.



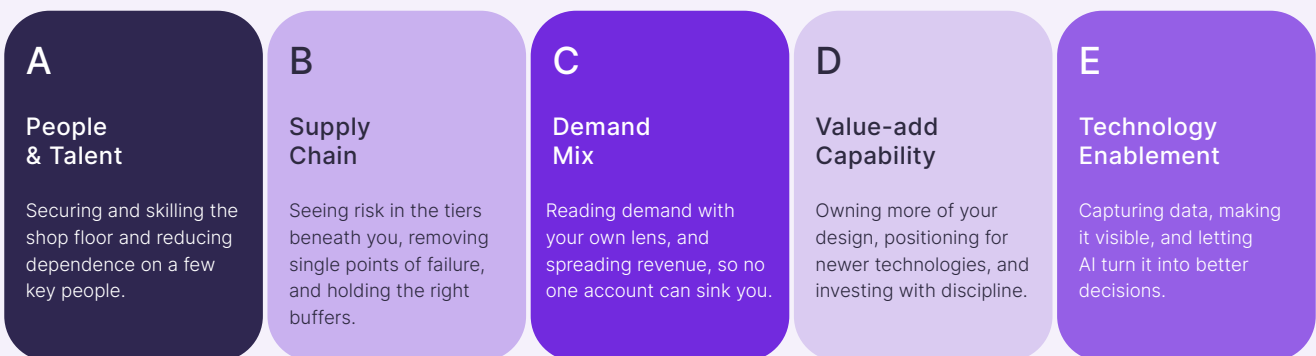


3.1 Resilience depends on your starting point

There is no one playbook for resilience that fits every company. What a company can do depends on its size and where it stands today. A large, diversified player can commit a sizeable amount to training or building a department to make its own machines. Asking a ₹100-cr specialist to do the same overnight isn't realistic. But smaller companies aren't without options; their path just looks different.

That is why this roadmap is built around company size. It talks about what small, mid-sized, and large firms should each do to get stronger. The survey and interviews point to five axes that together decide how well a company withstands shocks. **A company rarely fails on all five at once; more often, one weak axis is enough to expose it.** So, it is better to make yourself stronger on each:

The five axes of resilience



How to read the next pages

The pages that follow cover each of the axes mentioned above. Every axis opens with a **maturity ladder**: a four-stage scale from reactive (L1) to resilient-by-design (L4) that describes what 'basic' through 'best-in-class' looks like on that dimension. It is a diagnosis: **companies should use each ladder to locate where they stand today**, and to see what the next step up would require. Each ladder also marks where a majority of the small, mid-sized, and large firms sit, so you can benchmark against other companies of your size.

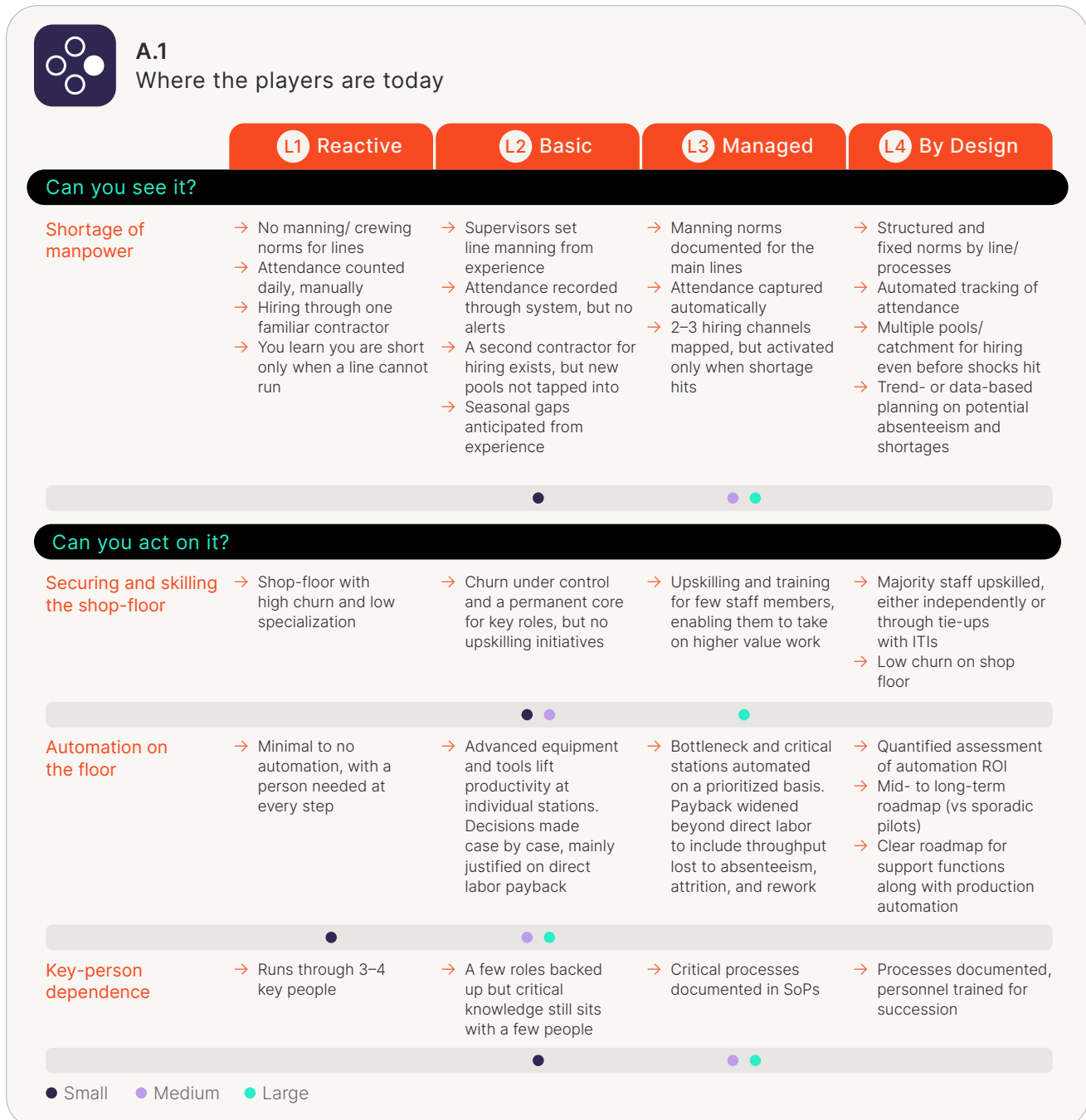
As the right action depends on where you start, **every axis sets out recommendations tailored to companies of varying sizes**. The move that matters most for a small supplier might not match the one for a large company, so the roadmap spells out, axis by axis and size by size, the practical steps to move up a level.

Read together, the five ladders give you a resilience scorecard for where you are strong and where you are exposed. And the size-specific recommendations give you the action plans to close the gaps that matter most for a company like yours.



A. People & Talent

In every conversation we had, leaders pointed to the same issue at every level of the company: talent. On the shop floor, high labor churn and rising manpower costs continue to impact suppliers. Hiring people with the right skills is a challenge, and even when companies are able to retain labor, they struggle with upskilling, and hiring the right skills to begin with. At the top, much of the business depends on one or two key people, with critical knowledge undocumented and no succession plan.



Most of the firms have the data to spot headcount gaps and shortages and can, accordingly, hire shop-floor labor. The struggle is high churn, especially during seasonal migration due to festivals or events, lack of skilled manpower, and reliance on a few key people at the top with no SoPs for transition. This is especially true for smaller firms. Firms are increasingly looking towards automation: **nine of the ten firms we spoke to are investing in automation**, hoping to move beyond level 2 mentioned above.



A.2 Where to focus

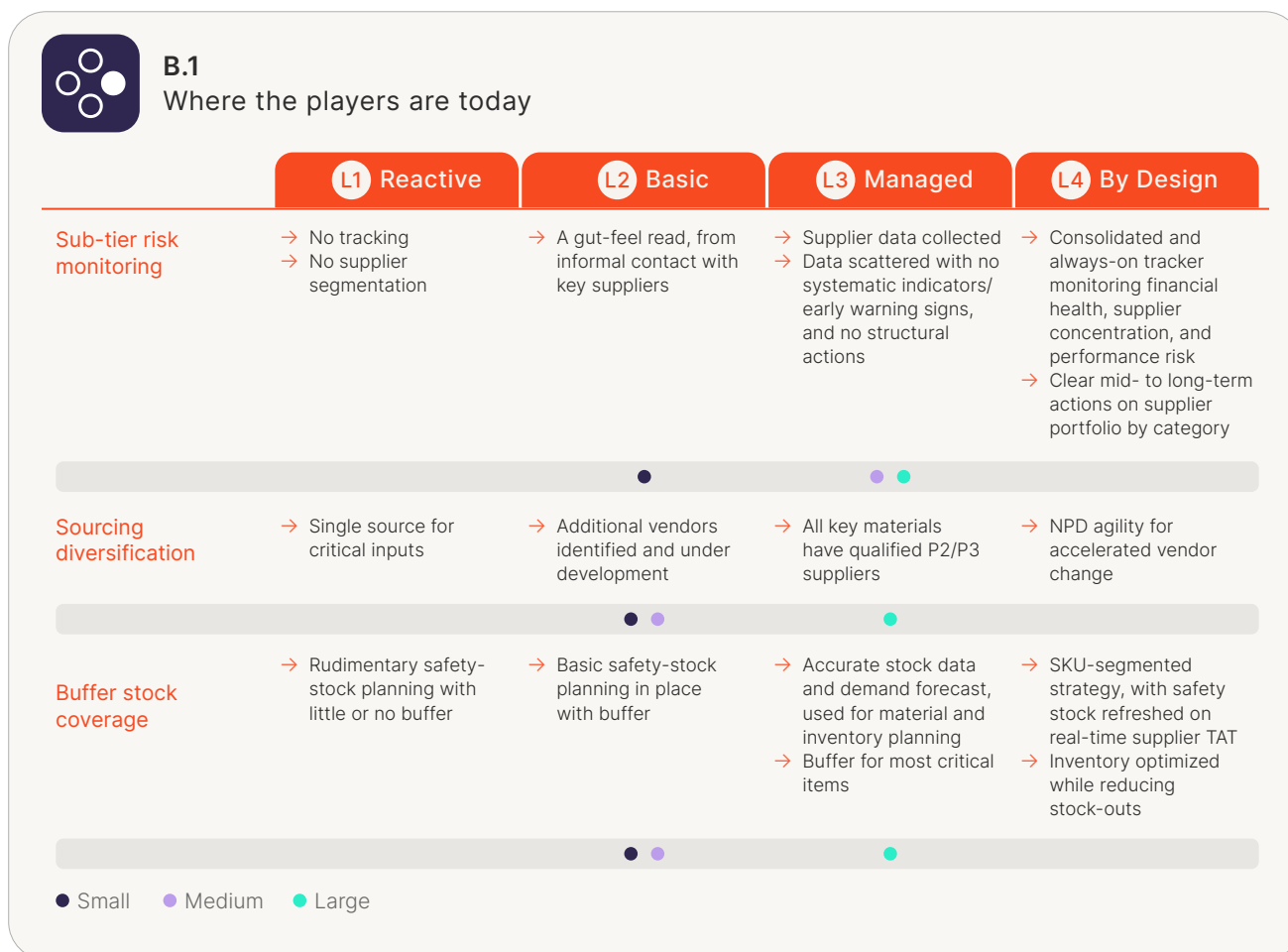
The aim: A shop floor that is skilled and does not churn, and a business that no longer depends on a handful of people.

	Large	Medium	Small
 Secure your shop-floor labor	→ Don't rely on a single-source catchment for labor: Hire a share of the workforce from multi-locations (for example, with recruitment networks across ITIs in different states) → Use outcome-based payment for staffing partners		→ Keep a trained buffer only on critical roles → Consider employment from new geographies through government schemes (e.g., PMKVY, JSS)
 Expand the hiring pool	→ Widen the pool: Increase recruitment from a more diversified pool (for example, higher women participation) * Drop male-only job ads and language ('technician', not 'ITI boy'), so everyone feels comfortable * Make the commute and premises safe with well-lit and secure sites and clean washrooms		
 Upskill the shop floor	→ Build strategic/scarc skills in-house: Lean on the market for commoditized roles → Build your own skilling engine (for strategic skills): Leverage ITIs and academia knowledge to build courses; attach diploma/certification with them to boost recruitment → Plug into external pipelines (if above is not possible/ commoditized skills): Tie up with ITIs, polytechnics, and ACMA cluster programs for trained operators, and run structured, on-the-job courses to periodically upskill staff		→ Conduct on-the-job training for critical personnel → Through training and upskilling, empower labor, who will eventually train others. This will drive new ways of working with staff
 Automation to augment productivity	→ Design for low manning: AI-guided stations where crisp instructions are given to increase productivity → Keep restart skills in-house: If a line breaks, in-house staff can fix it quickly	→ Judge automation on payback and missed business opportunity: Factor in sustenance and additional business because of higher throughput when calculating payback → Use a proven external partner for the first automation project to avoid costly first-time mistakes, and then gradually build capability in-house	→ Automate your most labor-intensive task first: Start with the job that's hardest to staff or most repetitive, prove it on one line, then expand
 Reduce key-person dependence	→ Write SoPs for every critical process and cross-train at least two qualified people per process; incorporate AI-based training modules to help transfer knowledge → Have formal succession plans for senior leaders		



B. Supply Chain

No part of the business has been tested more than the supply chain (80% respondents said they were hit hardest here in the last three to five years). Resilience here rests on three things: seeing stress in the tiers beneath you, being able to switch suppliers when an input fails, and holding enough buffer to ride out the gap. Let's look at where players are today and what they can do to make their supply chains more resilient to shocks.



Most of the companies understand their suppliers' operations and keep track of them (over 95% track commodity price/shortages and more than 70% track sub-tier stress). They, however, need to ramp up on (i) structured data-tracking supplier risks and (ii) category development (for example, sourcing diversification).





B.2

Where to focus?

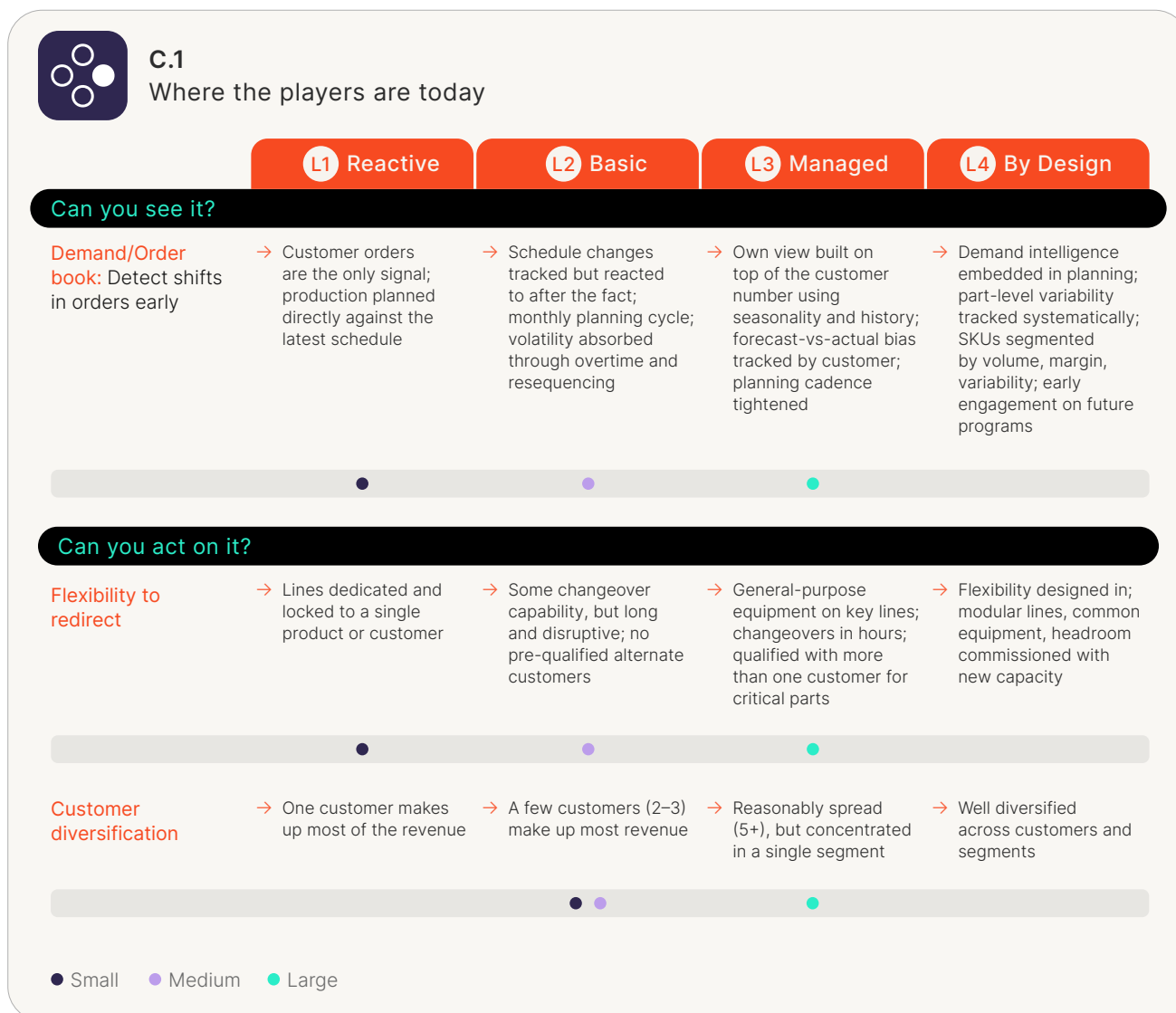
The aim is the same for every firm: to be able to take a supply shock, such as a price spike or a supplier failure, without affecting the line and protecting margins if possible.

	Large	Medium	Small
 See supplier risk early	→ Run a supplier risk radar: Check financial health, single-source dependency, switching lead time, geographic concentration → Feed it with real supplier data: For instance, third-party financials, GST filings, delivery and quality trends → Steer the supplier mix based on market signals: Shift away from concentration risk, use risk signals to help suppliers proactively, and act on fragility, not just importance. A low-value input with one fragile supplier can stop the line as fast as a critical one	→ Run a supplier risk radar, feeding it with real supplier data only for the most critical supplier → Steer the supplier mix on the signals (<i>similar to large companies</i>)	
 Remove single points of failure	→ No critical input from just one supplier or one country (where possible) → Map out supplies that are only imported, then design them out or find local providers (where possible)	→ Move beyond identification and qualify alternate sources for the critical supplies → Pre-set switch triggers, such as a lead-time breach or an export curb to decide fast in a crisis	
 Hold buffer where it counts	→ Stock up early: Watch out for the first sign of curbs, delays, or rising prices → SKU-segmented strategy, with safety stock refreshed on real-time supplier TAT: Optimize inventory while reducing stock-outs	→ Stock up early: Watch out for the first sign of curbs, delays, or rising prices → SKU segmented strategy: Concentrate more where the SKU is critical and slow to replace	
 Share input-cost risk in contracts	→ Negotiate price indexation with customers, so a spike is shared and not absorbed alone → Increase frequency of indexation (for example, monthly vs quarterly) during periods of disruptions		



C. Demand Mix

Managing demand volatility requires three capabilities: developing an internal view alongside customer schedules, maintaining flexibility across manufacturing and suppliers, and reducing concentration where commercially practical.



Most firms have formal order-book visibility. However, they often fail to develop their own perspective on it and are hence caught unaware when the customer changes forecasts. This leaves them unable to switch to new products or customers. And without pre-qualified alternatives with customers, companies can't redirect capacity elsewhere. Smaller and medium-sized companies are worst hit, as their revenue is often dependent on two or three customers. As demand volatility becomes the new normal, what can companies do to protect themselves?





C.2

Where to focus?

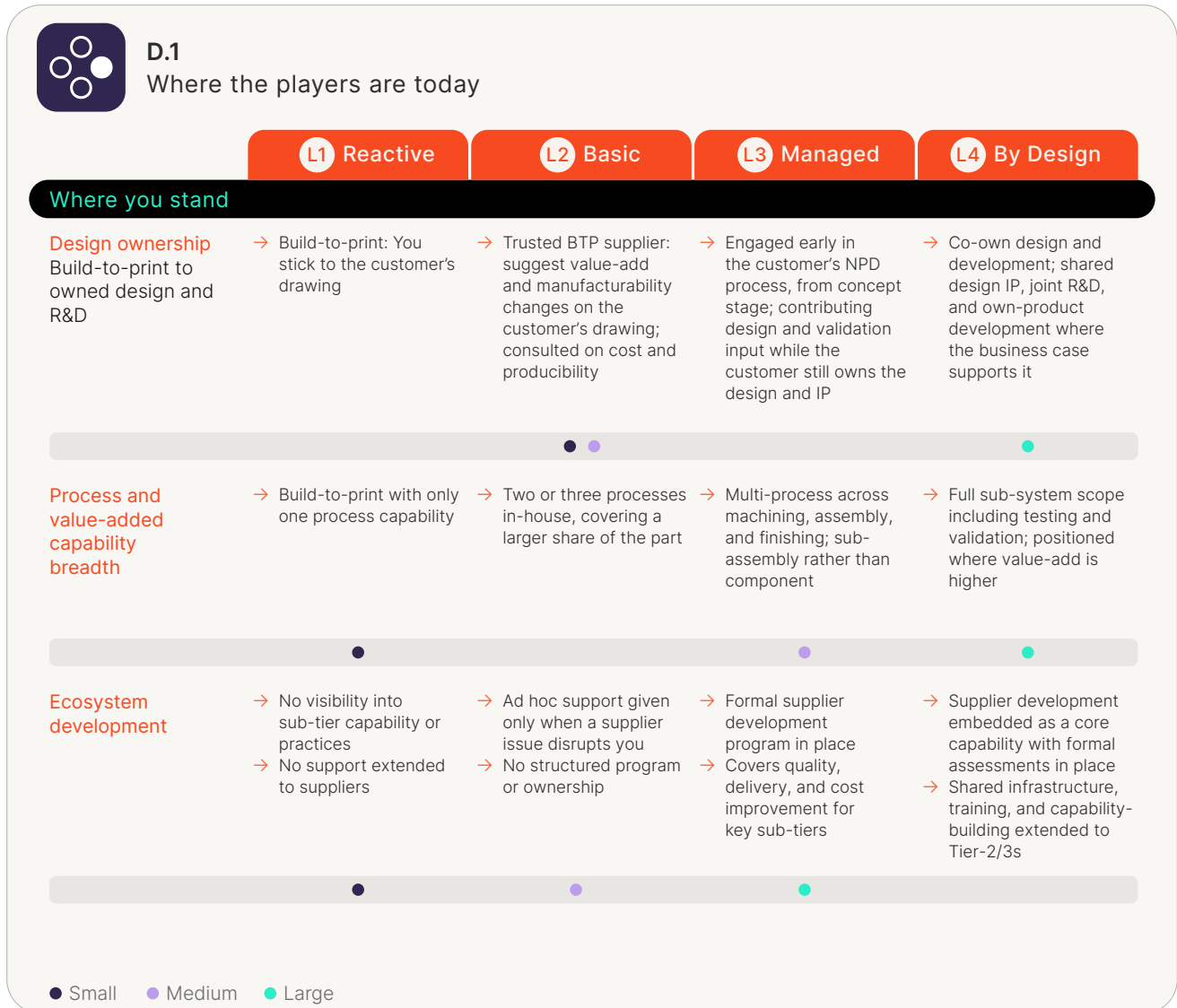
The aim is the same for every firm: to build your own independent view on demand, prepare your supply base and manufacturing lines for the swings, and spread revenue and capacity, so that no single account impacts you materially.

	Large	Medium	Small
 Build your own demand view	→ Read the end-market, not just the customer: Put people on the ground to track end-market sales to spot shifts before the customer's forecast catches up → Build a systematic forecasting capability: It should overlay external market signals on historical customer behavior <i>(as mentioned for mid-sized and small companies on the right)</i>	→ Learn from your own order history: Track each customer's past forecast-vs-actual, their seasonality, and over- or under-forecasting bias. Then adjust the customer's number with what you've seen before → Clear segmentation of demand at an SKU level based on volume, variability, and margin: The trade-offs should be informed by this segmentation	
 Reduce customer concentration	→ Hold a hard guardrail: For example, no single customer above ~20% of a segment; add new accounts, or if a long customer tail exists, set a two-year target to increase their share and shrink your biggest accounts' %		
 Spread across markets	→ Diversify across at least three of five dimensions: Segment, drivetrain, product, geography, customer → Venture into higher-margin non-auto demand if possible	→ Diversify across at least two of the five dimensions → Expand your product range within your core capability to fulfil more orders from the same customer, deepening the relationship	→ Improve OTIF and quality score: Deepen existing customer relationships and try to become their approved supplier
 Keep capacity flexible	→ Prefer flexible machines and equipment → Buffer 20–30% spare capacity when commissioning new lines to allow for increase or decrease in demand		



D. Value-add Capability

The value pool is splitting along multiple dimensions (for example, ICE to EV, mechanical to electronic, build-to-print to owned design), and firms are moving at very different speeds. Companies are also struggling to add capability without locking capital: develop a product on your own conviction and find the customer later (**product-first**), or anchor new capacity to a committed customer before building (**customer-first**).



While the question around how to add capabilities is emerging, around half of the companies today continue to be build-to-print, relying on the customer's design. This is particularly true for small and medium-sized companies. The industry is also shifting towards additional powertrain capabilities with ~50% of the companies investing in EV offerings to diversify. As they prepare for the shift, here are a few things to keep in mind.



D.2

Where to focus?

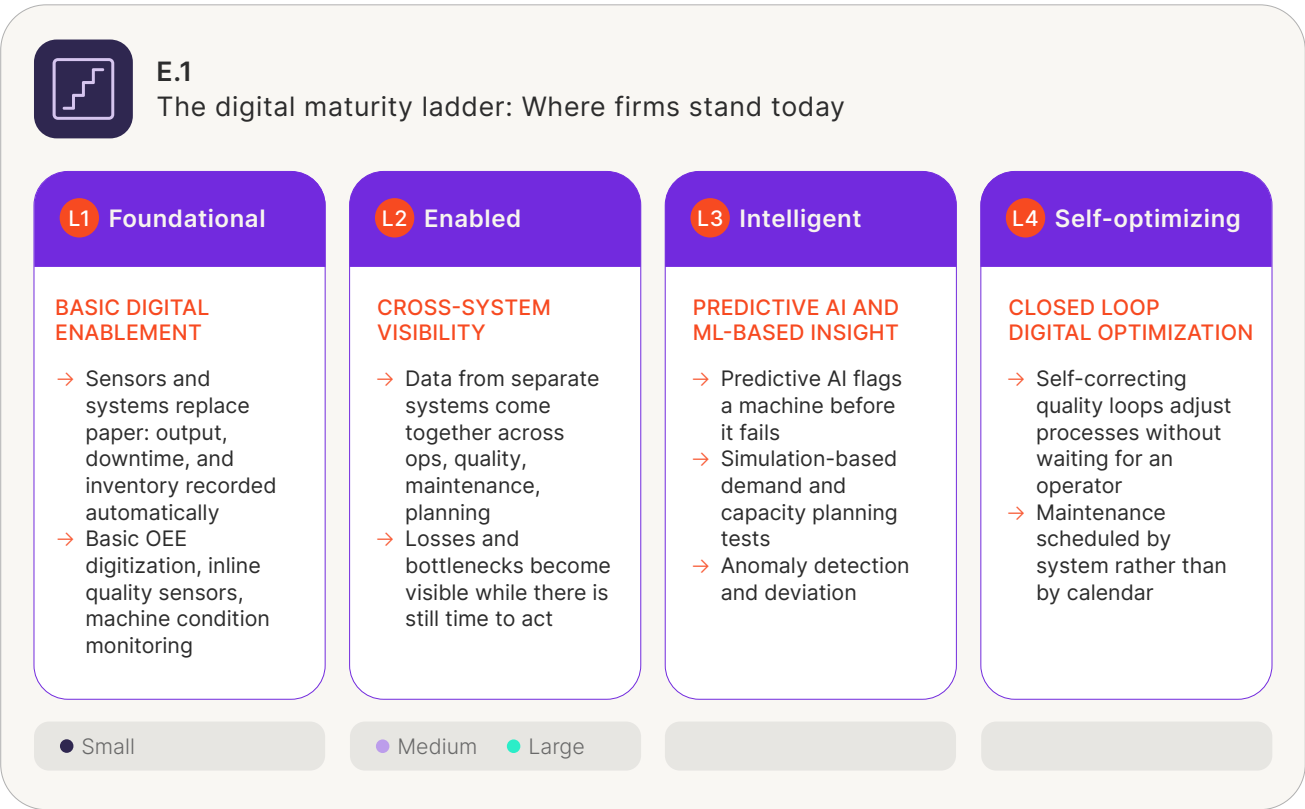
The aim: To capture emerging value pools and build capability through a disciplined investment plan.

	Large	Medium	Small
 Own more of your design	→ Move towards full in-house design and R&D: Greater design ownership can improve differentiation, the speed of re-engineering, and the depth of customer collaboration	→ Climb from build-to-print to co-development: Hire engineers and build a design and testing team to co-develop with OEMs	→ Collaborate with OEMs from the initial design phase: Participate earlier in design and program discussions, offer design input, and maintain a direct technical interface with customers
 Choose your route: product-first or customer-first	→ Customer-first when capex is heavy, volumes are unproven, or you don't own the design. In such cases, anchor new capacity to committed orders (such as POs, technical sign-offs) → Product-first when the design is yours and the investment is affordable. Develop on your product line		
 Invest with discipline	→ If you choose to be customer-first, commit capex only where payback is inside the OEM's visibility window		
 Reassess diversification at regular periods	→ Track mix of ICE-EV and powertrain agnostic demand → Explore what capabilities can allow for powertrain diversification or customer segment diversification and build an entry plan around it		
 Structured ecosystem development	→ Build a formal supplier assessment framework with a dedicated supplier development team → Extend shared infrastructure (testing, training centers) with sub tier base for critical categories → Run formal supplier development programs: Leverage ACMA's cluster programs to start with	→ Systematic monitoring of performance (Quality, delivery, cost) → Extend structured support to 2-3 critical suppliers	



E. Technology Enablement

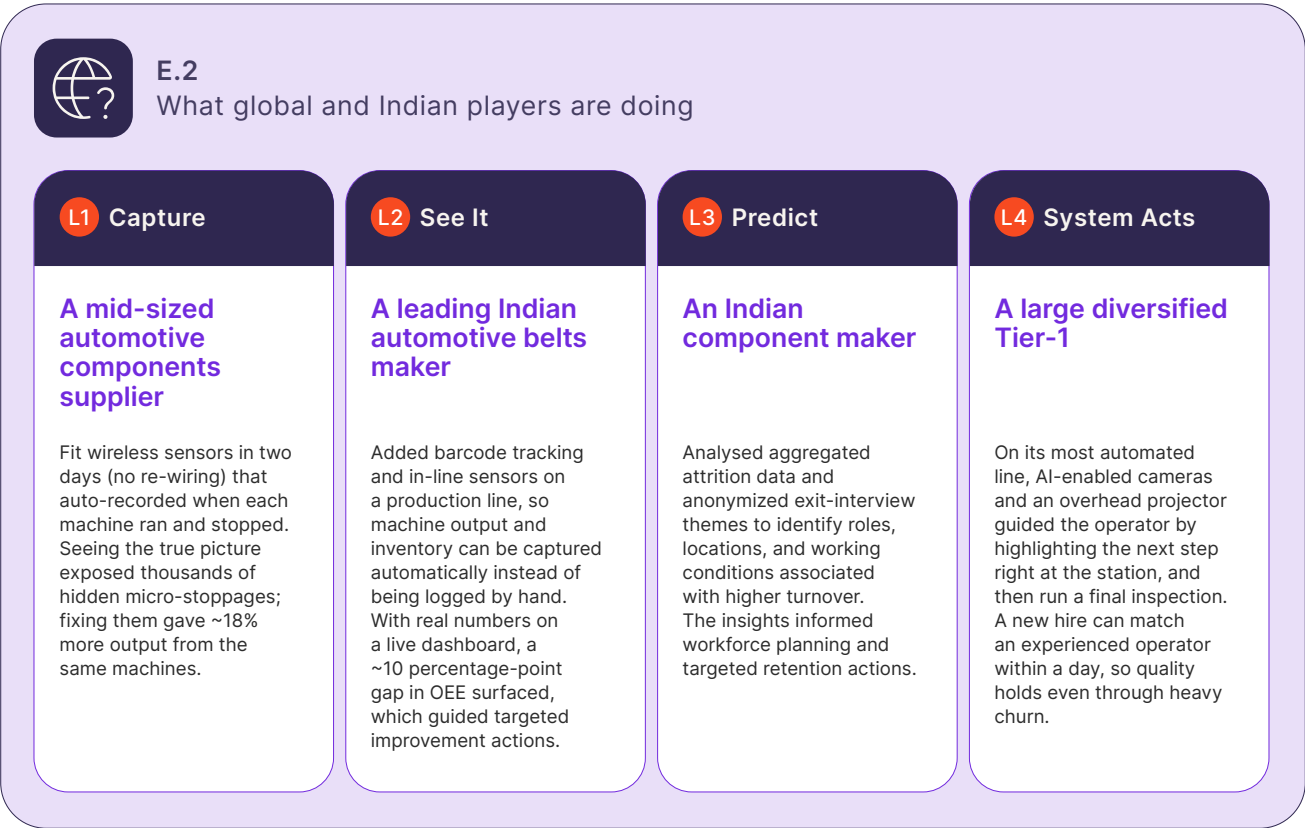
The common driver of all four axes is **data, and the technology to turn it into decisions**. When all the data is in one place, you see potential risks and bottlenecks better. That capability builds in four stages, from capturing data to letting technology act on it. The ladder below shows where small, mid-sized, and large firms stand on that curve, and what each stage looks like in practice.



Indian companies sit mostly at the first two rungs. Successful global and even some Indian suppliers are moving data and technology from pilots to core operations. In engineering, it can speed up development and documentation. In operations, it can sharpen scheduling, maintenance, and quality control; anticipate demand swings; and support manpower planning. Across the supply chain, digital networks can model disruption scenarios and reroute orders or adjust safety stock. Used in the right way, data and technology fits right into a supplier's cost, resilience, and growth agenda.



The examples below, from both global and Indian players who have climbed higher, show what each stage delivers and the benefits they have gained.





3.2 Ecosystem Enablers

Not every resilience gap can be closed by a company on its own. Some are shared challenges that require collaboration. And this is where the ecosystem plays a role. Companies can stay true to themselves while executing; industry bodies enable coordination and shared infrastructure; and policy support de-risks investment and bridges capability gaps.

The survey highlighted a few ecosystem supports that would help companies build resilience. **Three of four companies were looking for skilling, training, and manpower. Around one in three wanted support to deepen design, engineering, and R&D, and one in three pointed to financing and policy support, such as PLI and MSME schemes can be explored.** These are not gaps any one company can close alone. The momentum is already rolling in several of them, in policy and on the ground.

Localization

Driven by build-out of domestic manufacturing capacity and government policies aimed at reducing import reliance. For instance, wheels/rims and engine imports fell **~74% and ~39%**, respectively from FY19 to FY26. Wheels/rims saw substantial growth following the imposition of anti-dumping duties on cast aluminum alloy wheels imported from China in 2015.

Rare-earth Permanent Magnet Scheme

Approved in November 2025 with an outlay of **~₹7.3k cr**, to make rare-earth magnets used in EV motors, power steering, and sensors in India, aiming to diversify supply sources. Targets **~6,000 tonnes a year**.

India Semiconductor Mission

Launched in December 2021 (**~₹76k cr**) and expanded, with a second phase, ISM 2.0, of **~₹1.27 lakh cr** in 2026, for domestic chip fabrication, assembly, and packaging. Several plants are already operational, with the first **India-fabricated chip** expected around end of 2026.

Research, Development, and Innovation (RDI) Scheme

Launched in November 2025 with a **~₹1 lakh cr** corpus of long-term, low- or zero-interest loans for private-sector R&D in sunrise sectors, including EVs and electronics/semiconductors, to fund higher-risk, longer-horizon innovation

Automotive Skills Development Council

Formed as a collaborative initiative between the government and key industry bodies, including ACMA, SIAM, and FADA. Funded through government schemes like PMKVY 4.0, ASDC designs and delivers auto-related courses nationwide through training partners and OEMs.





The next step is to scale and sustain these efforts, with greater focus on key priorities across the ecosystem: (i) **building a skilled talent pipeline**; (ii) **strengthening design, engineering, and R&D capabilities**; (iii) **increasing the localization of advanced technologies and inputs**; and (iv) **expanding access to global markets by improving export and cost competitiveness**.

A. Powering the workforce of the future

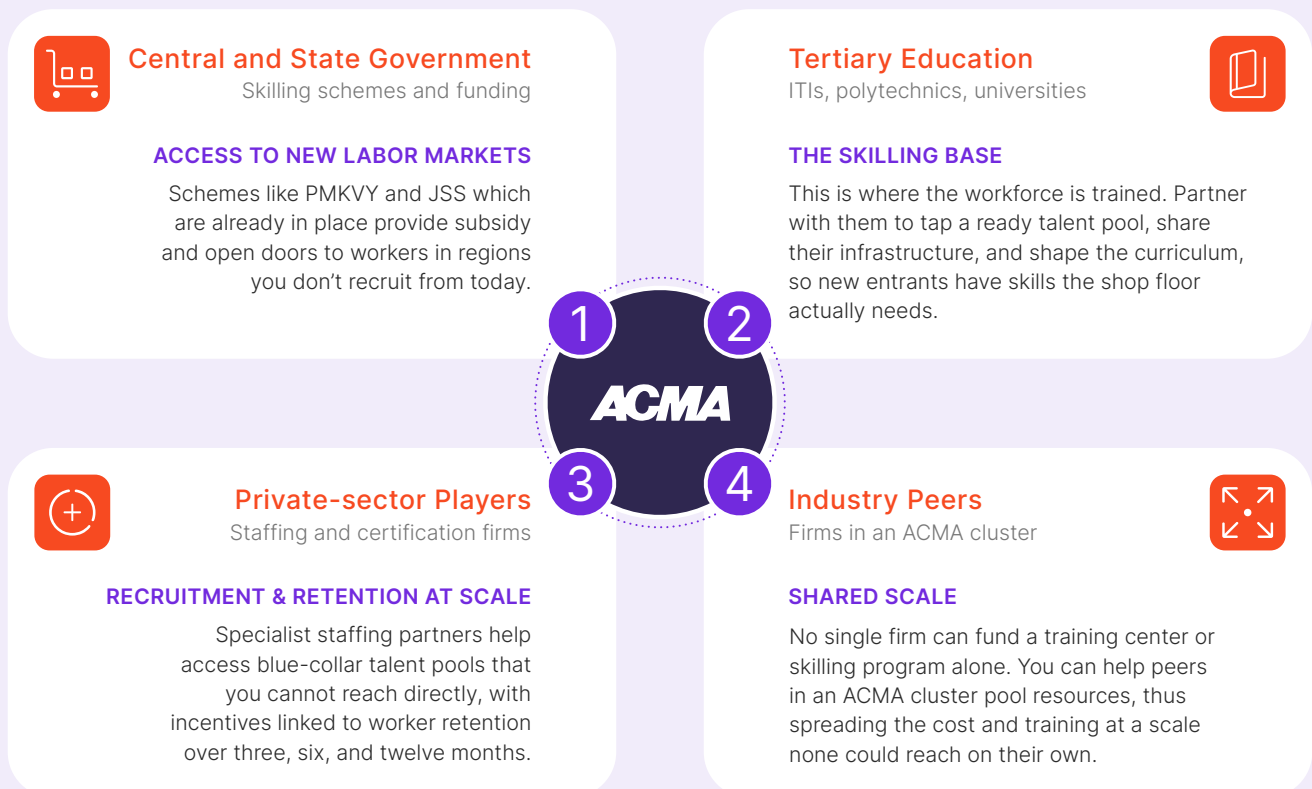
We have discussed how attrition, finding the right talent, and availability have plagued the industry as well as how some resilient companies are overcoming these challenges. But there is a limit to what companies can do on their own.

An ecosystem that benefits everyone.

While companies can go a long way alone, the support of entire ecosystem is rewarding for all. ACMA can act as the central body, bringing multiple stakeholders together to fuel solutions and create value, as shown below.

Exhibit 3.1

ACMA can coordinate with stakeholders to tackle manpower shortage





What needs to be *done*?

There are information gaps across three stages, where an industry body like ACMA can add value.

Theme	Description	Where industry can collaborate
 Source	Mobilizing and motivating candidates to enter a program or job: Entails financing/incentives to get people to show up.	→ Build a shared industry talent map: Partner with ITIs/polytechnics and Employment Exchange/e-Shram (~30 cr worker dataset) for targeted SMS mobilization → Champion existing government mobilization schemes as market-access tools (for example, women's skilling schemes/MoMA schemes in Chhattisgarh/Northeast); reposition them as new recruiting pools, in addition to subsidies
 Skill	Actual design and delivery of training: Entails program length, digital vs physical, who assesses, who certifies.	→ Act as the sector's curricula-refresh and awareness bridge: Periodically relay industry skill needs to training providers, who often lack this visibility on their own. → Facilitate cluster-level, co-invested training infrastructure (with government and institutes): Shared facilities can train 2,000–3,000 people per cluster
 Staff	Placement and post-placement training: Entails tracking and making the sector attractive.	→ Connect members to outcome-based staffing specialists with proven blue-collar employees models (fees tied to retention, for example, six-month/one-year milestones). → Aggregate sector-wide retention/attrition data to diagnose why placements don't stick. It's a pattern no single company can see alone

Such an industry collaboration between industry bodies, government, and OEMs can help solve manpower challenges especially for the smaller companies (Tier-2s and Tier-3s) for whom this is a bigger challenge.

B. Advancing design, engineering, and R&D capability

Smaller and mid-sized suppliers often struggle to build design, engineering, and R&D capabilities. Development of **auto-focused tech parks with embedded R&D facilities** can help attract and develop talent, and give Indian and global players a single base for their engineering and R&D work. India can establish an **Automotive and Manufacturing Innovation Ecosystem in key auto clusters**, connecting auto component manufacturers, global and Indian OEMs, leading academic institutions, and auto-focused start-ups to develop indigenous technology. Bodies such as ACMA and SIAM could orchestrate it, investment support from the government could be explored and clear success metrics, such as patents filed and time to commercialization.

Such an ecosystem can drive new IP creation for component players, open funding access for start-ups, and enable customized design solutions for OEMs in the local market. Alongside it, OEMs and Tier-1s can keep their suppliers engaged **by co-developing the next generation of parts with them**, and by running clear channels that can help suppliers win new technology contracts; and backing structured **supplier development programs on technology adoption, financing access, productivity improvement and capability building**.



Relevant stakeholders may consider fiscal support in auto electronics, xEV powertrain, and software-driven vehicles could drive shift for increased R&D investment. A targeted outreach to global OEMs can accelerate the relocation of their R&D and engineering operations to India. A 'booster incentive' program that facilitates this migration could also be explored.

Case in point: India's pharmaceutical sector offers a close parallel. In 2023, the Department of Pharmaceuticals launched the Promotion of Research and Innovation in Pharma-MedTech Scheme to move the sector from **cost-based to innovation-based growth**. Backed by a ₹5k cr outlay over FY24–30, it runs in two parts: Component A (₹700-cr) **sets up Centers of Excellence (CoEs) at the seven NIPERs** (National Institutes of Pharmaceutical Education and Research), and Component B (~₹4k cr) **funds R&D grants for industry, MSMEs, and start-ups across priority areas**, such as new drugs and medical devices. Early-stage start-up and MSME projects can receive up to ₹5 cr, with full support up to ₹1 cr and 50% support beyond that threshold. Later-stage projects can receive up to ₹100 cr, capped at 35% of the project cost, or up to 50% for strategic priority innovation areas, all through a single digital portal. Together, the scheme is expected to catalyze about ₹11k cr of total R&D investment across roughly 300 projects. The early signs are real: all seven CoEs have been set up, and by the November 2025 deadline, the scheme had drawn 710 research proposals.¹

C. Localization of advanced technologies and critical inputs

The ₹25,938 cr PLI scheme for autos and components (FY24–28) pays incentives of about 8–13% on incremental sales of 103 advanced, high-value components, with an extra 5% for EV and hydrogen parts, provided a company hits 50% domestic value addition. Against a ₹42,500 cr target, applicants committed nearly ₹67,700 cr and have already invested ₹35,657 cr by September 2025. While the scheme has catalyzed significant investment, challenges in DVA certification, long product-validation cycles and the need for effective incentive realization for component manufacturers remain. For component makers, there is real value in moving towards higher-value and EV parts.²

D. Enhancing export competitiveness for global market access

Exports remain the biggest headroom, with India holding just ~5% of global component trade. Closing this gap needs proactive outreach to global OEMs through incentives such as cluster-level packages covering an anchor OEM and its Tier-1/Tier-2 base, and single-window clearances to fast-track approvals may be considered. On infrastructure, shared testing and certification facilities can help smaller suppliers meet global standards, while shared warehousing in key export markets can address reliability challenges that hold exports back.

At the same time, sustainability will enable competitiveness for exports. Decarbonizing manufacturing, adopting renewable energy, and building circularity into design are increasingly non-negotiable as OEMs push Scope-3 targets down their supply chain and export markets tighten green requirements at the border.

Together, a company-level resilience roadmap and broader industry and policy support, spanning talent, resilient supply chain, design capability, and export competitiveness, can help the sector move closer to its global ambitions.

¹. Department of Pharmaceuticals; Ministry of Chemicals and Fertilizers; PIB Releases ². Ministry of Heavy Industries; PLI Scheme for Automobile and Auto Components

04

Leading Through Uncertain Times





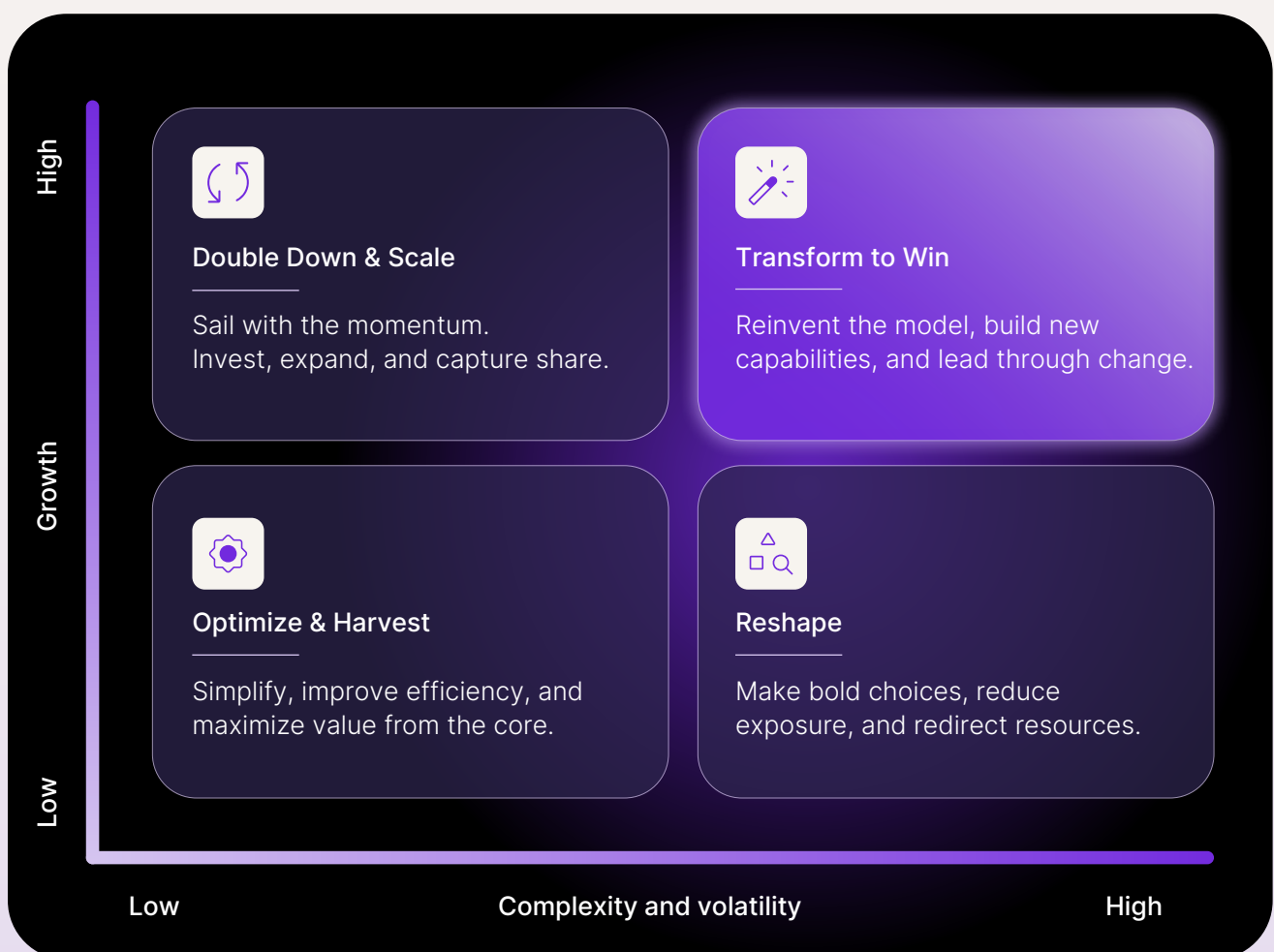
The auto and auto component industry in India has created immense value, achieved remarkable outcomes on localization, and been an employment creator at scale. The future continues to hold promise of more growth and new value pools, but will also be riddled with disruptions. Some are structural, while others will come out of the blue. For leaders in the sector, these are challenges that deserve the effort required to overcome them.

In such scenarios, what has, and will continue to, set apart leaders is their response. By keeping a clear head, making good calls in an uncertain environment, and avoiding costly missteps, they can tide over uncertainties.

The right response to a shock depends on the company's current position, its growth momentum, and how much complexity and volatility it's already carrying. The same disruption can call for very different responses.



This is a *Time to Transform*



This closing section is a leader's corner. What follows are a few principles for making well-rounded decisions in a changing world. None of them can predict the future, but all of them help a leader think more clearly about it.



Eight principles for *resilient* leadership



Invest ahead of the curve

Resilience is about investing before a shock forces the decision, across both capacity and capability. On capacity, this means proactive discussions with anchor customers well before a new program, backed by a clear strategic roadmap and mid-term plan for upcoming products and projects. On capability, it means building out R&D, engineering, and supply chain functions ahead of need, sized for the scale and complexity the business will carry three to five years from now. This kind of sustained R&D investment compounds over time, for example simulation-led design has helped some global players cut product development cycles by as much as 40%.

A large driveline manufacturer's resilience through the recent tariff and rare-earth shocks traces back to decisions it made three years earlier: a new business acquisition and sustained R&D investment.



Size your capital plan to your growth ambition

Companies need to strike a balance between risk and growth aspirations, and this balance should be managed by different sources of capital. That means actively looking at multiple sources of capital (both debt and equity) and identifying the right mix for your context. This should be aligned with working style, long-term control and strategic direction. Capital plans should then be sized to what capacity and capability investments actually require. Put it on the leadership agenda alongside capacity, capability, and technology.

A moulding manufacturer funds every new plant on a fixed formula: equity pays for land and buildings, since those assets don't generate cash to service debt, while debt pays for machinery, since those assets do. This keeps leverage tied to what each asset can actually pay for itself, rather than to whatever source of capital happens to be available.



Diversify every critical dependency

A single customer, supplier, geography, technology, or manufacturing process can become a point of failure. The intent should be to actively monitor concentration risk across supply, demand, and capability. In practice, this means quarterly reviews of supplier concentration and diversification plans, annual roadmaps for product, platform, and technology diversification, and professionalization across processes and functions to reduce concentration risk.

A small Tier-1 keeps two to three alternate suppliers qualified across different geographies for its most specialised imported materials, even when that isn't the cheapest option. Over the last decade, it has treated this as a strategic agenda. When the Middle East conflict started, it was able to move fast, and within a day of the shock, it raised its stock cover from 25-30 days to 45-60 days from the alternate suppliers, kept supplying customers and saw them commit more business as a result.



Move towards flexible, right-sized manufacturing

An important question to answer today is how easily a plant or a line can be redirected across products and customers when volumes swing. Modular lines, quick changeovers, and common equipment across products all provide flexibility to companies. Debottlenecking what already exists is usually a better first move than adding new capacity outright.

A mid-sized manufacturer keeps part of its capacity tied to non-auto demand as well: the same line that manufactures for a two-wheeler OEM also makes parts for exports supplying to non-auto applications.



Move technology deployment from pilot to plants

Most tech and automation spend today still target a single line or process, rather than company-wide capability. Leaders need to shift their mental framing from isolated pilots towards at-scale deployment, involving building the systems, governance, and organizational muscle to roll proven technology across plants and processes. Among larger companies, those that capture data at source and integrate MES with ERP, and then deploy this at scale, are already seeing significant OEE uplift and reductions in material cost and manpower intensity. Equally important is being deliberate about what to invest in: automation for continuity, digital & AI for decision-making, and connected systems for visibility, together driving productivity and faster time to market in product development.

Companies that move from isolated pilots to scale-up are 3x more likely to have IoT/connected machines in place, and see moderate-to-transformational impact 2.1x more often than those still stuck at the pilot stage. Where Indian auto component players have scaled this properly, it has already delivered 10–15% OEE uplift, ~30% reduction in specific material costs, and ~30% lower manpower intensity on targeted tasks.



Professionalize the leadership engine

The functions, systems and processes that got companies this far may become constraints as we aim for 2-3x growth and higher complexity. Companies need to strengthen the organization through selective external hiring, structured leadership development, clear succession plans, and stronger retention strategies. On the shop floor, this means training supervisors and technicians to become multi-skilled, and not confined to a single machine or task. The decision making approach needs to move to being more data backed, objective and delegated to a cross functional team that is empowered, accountable, and coordinated.

A large Tier-1 revisits its organization structure roughly every two years to match where the business is heading. It treats a swing from ~50–60% strategic time to 70–80% firefighting as the signal that new capability across people, processes and systems is needed.



Invest in the ecosystem around you

Resilience for a company means little if its sub-tier suppliers stay fragile. Large and mid-sized Tier-1s have a role to play in strengthening their own suppliers (Tier-2s and Tier-3s) through shared infrastructure, extended supplier development programs, and knowledge transfer. This is not limited to critical material or crisis moments; it needs to be a sustained effort, built into how companies manage their daily supply chain.

A mid-sized component maker is working with 2-3 critical suppliers to co-invest in shared R&D and testing infrastructure which isn't feasible for the individual suppliers, while each still protects its own product IP.



Widen the lens on sustainability and traceability

As auto component suppliers position themselves for exports and global OEM programs, material traceability, responsible sourcing, and carbon disclosure are increasingly what customers screen for before awarding business. Leaders should treat this as an investment. Companies that build this muscle early will find it easier to qualify for new OEM programs and export markets that are now pushing Scope-3 targets down their supply chain.

~70% of global OEM/Tier-1 CPOs say sustainability is one area which is being actively evaluated for during qualification of suppliers and even suppliers have started to invest. For example, a plastic injection-moulding supplier designs and validates to global export standards, positioning it better for upcoming domestic norms as well as making it export-ready.



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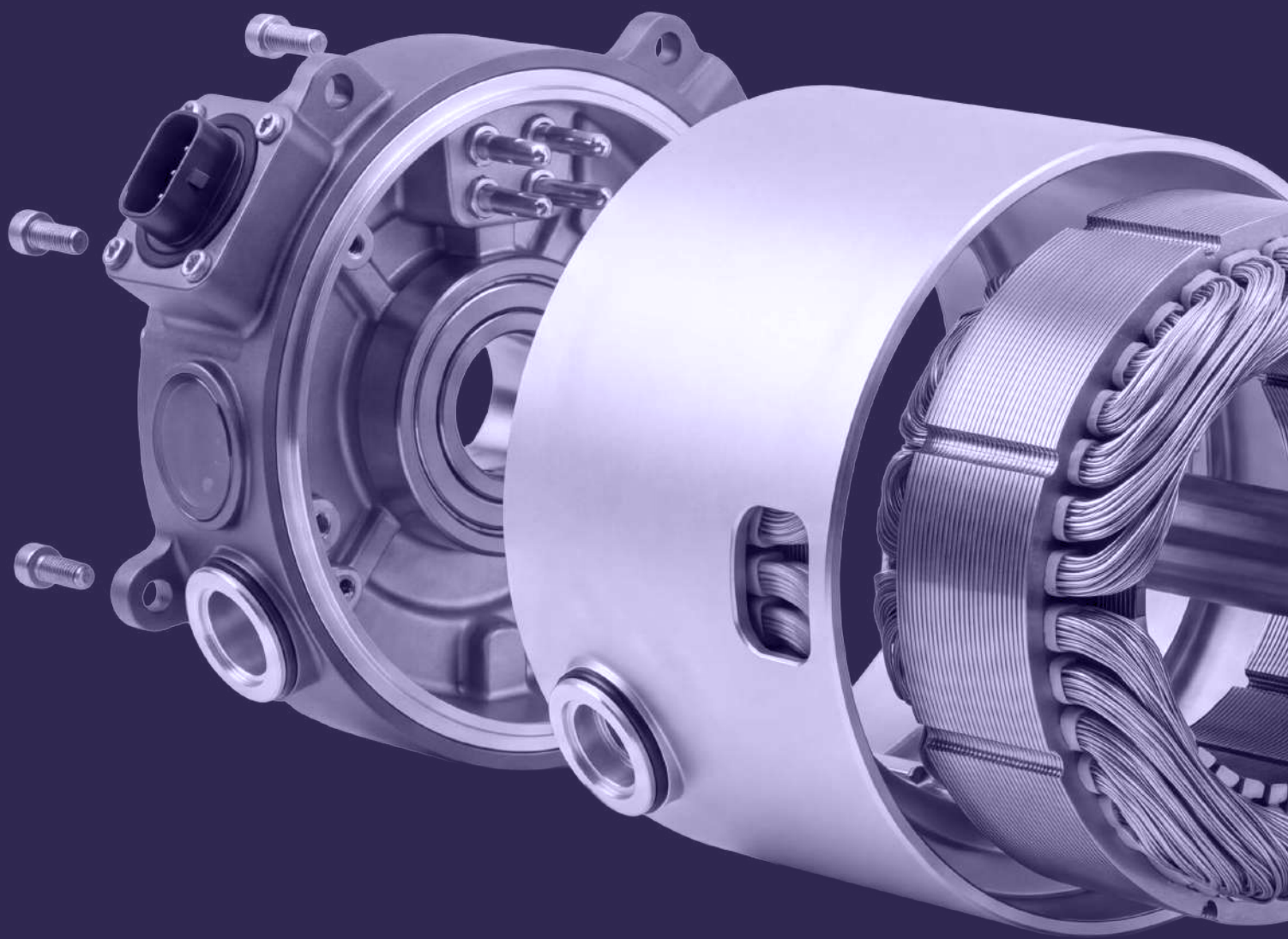
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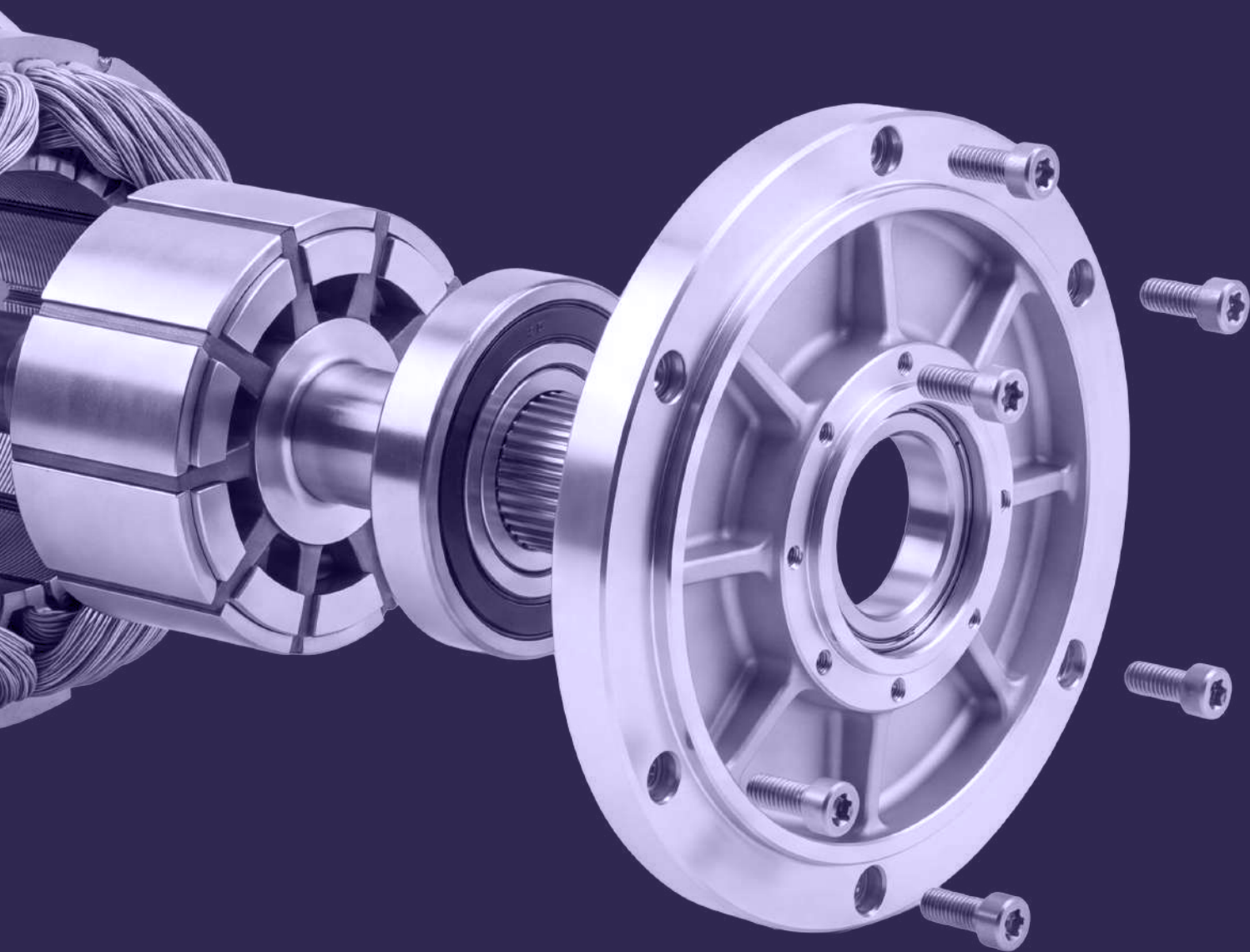
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