

Winning with quality and innovation

Prepared for the 56th annual conference organized by the
Automotive Component Manufacturers Association (ACMA) of India

August 2016

Authored by:

Rajat Dhawan
Shivanshu Gupta
Balaji Iyer
David Keeling
Ramesh Mangaleswaran
Kushal Patwardhan
Kartik Reddy

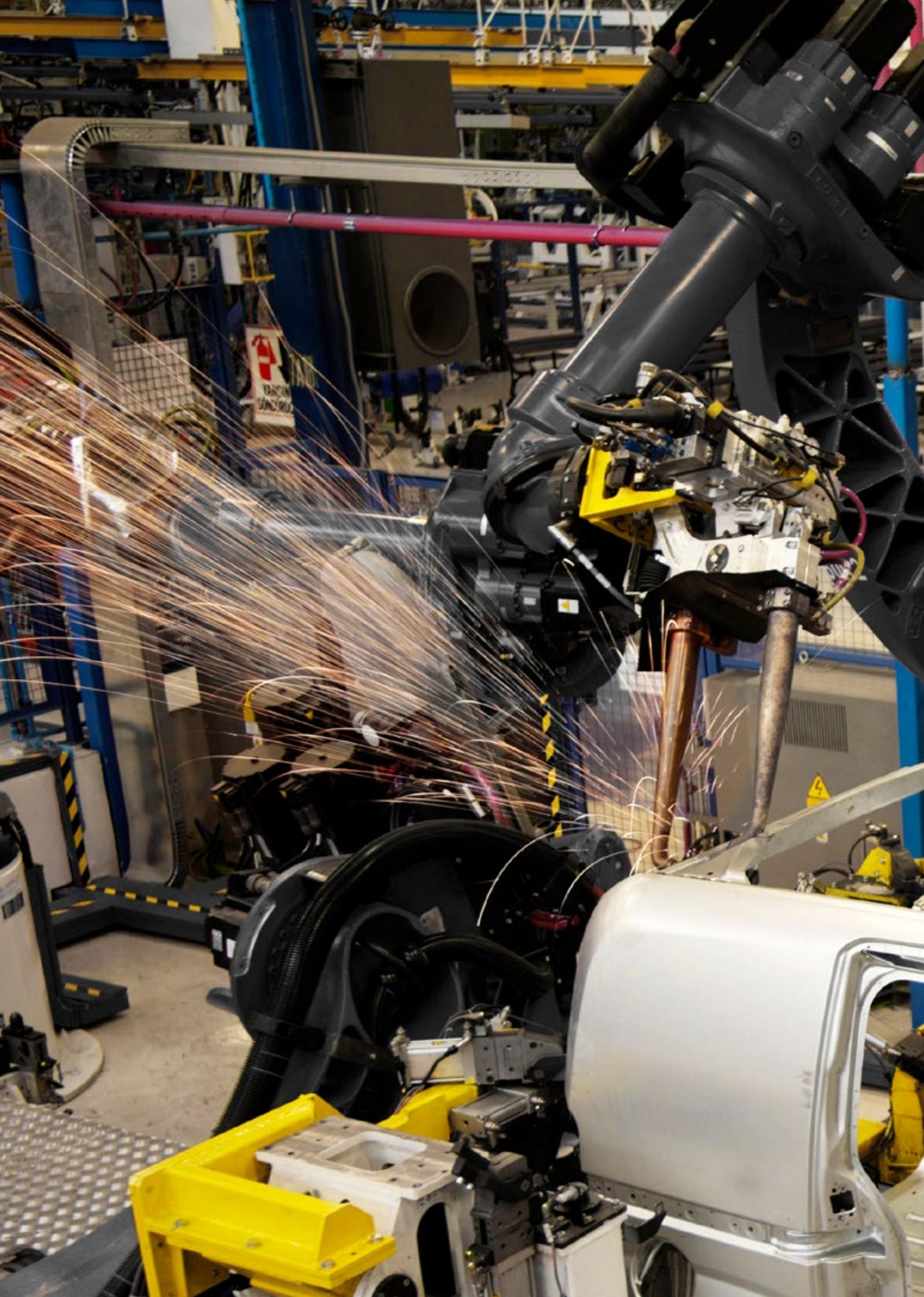
To the extent this report relates to information prepared by McKinsey & Company, Inc., it is furnished to the recipient for information purposes only. Each recipient should conduct its own investigation and analysis of any such information contained in this report. No recipient is entitled to rely on the work of McKinsey & Company, Inc. contained in this report for any purpose. McKinsey & Company, Inc. makes no representations or warranties regarding the accuracy or completeness of such information and expressly disclaims any and all liabilities based on such information or on omissions therefrom. The recipient must not reproduce, disclose or distribute the information contained herein without the prior express written consent of McKinsey & Company, Inc.

Winning with quality and innovation

Prepared for the 56th annual conference organized by the
Automotive Component Manufacturers Association (ACMA) of India

August 2016

Rajat Dhawan
Shivanshu Gupta
Balaji Iyer
David Keeling
Ramesh Mangaleswaran
Kushal Patwardhan
Kartik Reddy





Contents

Acknowledgements	vii
Executive summary	viii
World-class quality and innovation: The next frontier	1
Establishing a quality culture	5
Embracing innovation	13

Acknowledgements

We would like to thank the Automotive Component Manufacturers Association of India (ACMA) for giving us the opportunity to undertake this study and for sharing perspectives that have helped to refine and strengthen our insights.

This report synthesizes our learnings from proprietary research and the cumulative experience of McKinsey experts worldwide on quality and innovation.

We acknowledge the counsel of the ACMA leadership, particularly Arvind Balaji, Ashok Taneja, Rattan Kapur, Deep Kapuria and Srivats Ram. We have also benefitted from the guidance of several leading thinkers, stakeholders and decision-makers in the automotive OEM and automotive components manufacturing industries. We express our gratitude to various executives from these industries, as well as members of the IPO forum who shared their valuable inputs through interviews and survey responses.

We thank Kunal Maheshwari, a Research Analyst in McKinsey's Mumbai office, for his dedicated support on this study. We thank Parameshwari Sircar, Anamika Mukharji and Noorain Nadim from the Client Communications team for their support in writing and editing this report. We thank Fatema Nulwala and Natasha Wig for their support on external communications. We are also grateful to Vineet Thakur, Pradeep Rawat and Vishal Saraon for their support on design and visual aids.

Rajat Dhawan
Senior Partner
McKinsey & Company

Shivanshu Gupta
Partner
McKinsey & Company

Balaji Iyer
Associate Partner
McKinsey & Company

David Keeling
Senior Partner
McKinsey & Company

Ramesh Managaleswaran
Senior Partner
McKinsey & Company

Kushal Patwardhan
Associate
McKinsey & Company

Kartik Reddy
Practice Expert
McKinsey & Company

Executive summary

Indian auto suppliers, already performing well in the global arena, are aspiring for five-fold growth over the next decade, as announced in the Automotive Mission Plan for 2026. Their processes and skill-intensive products, coupled with cost competitiveness, have helped them to triple market size in the past decade. However, their ambitious growth plan calls for an additional focus on quality and innovation to succeed in the ever-evolving global scenario.

World-class quality and innovation: The next frontier

Organizations need to develop a quality culture, one which is embodied and championed by their leadership. They also need to recognize the significance of innovation, which can help companies trump the changing scenario prompted by new technologies and disruptive competitors.

The impact of quality, good or bad, is increasingly evident across industries. “Good enough” is no longer good enough, and organizations that compromise on quality feel the heat. On the other hand, organizations that commit to quality excellence reap the benefits of this effort, often significantly boosting their bottomline, branding and customer loyalty. The upside of good quality is disproportionate—studies have shown that it helps to go from “poor” to “good” quality, but that the real upswing lies in shifting from “good” to “outstanding” quality. While Indian auto suppliers do take quality seriously, their emphasis has largely been reactive. The need of the hour is a more proactive approach to establish a culture of quality.

Innovation is an increasingly necessary response to the advent of new technologies and a changing regulatory environment. Indian auto suppliers need to up their innovation quotient to develop the capabilities that can help them survive in an increasingly competitive environment. Globally, companies that innovate on a regular basis typically report higher growth and profitability than their peers. This thrust on innovation calls for a supportive ecosystem that could help players to innovate on their product and portfolios, their processes, and their business model.

Establishing a quality culture

The key to quality excellence could be to embed a quality culture into the organization’s DNA. The concern for quality needs to lie at the heart of the operating, management and people systems of the organization—building and investing in quality processes across the value stream; planning, measuring performance and taking decisions with a quality focus; and building a quality mindset among people and equipping them to deliver to the highest standards. This quality mindset is especially important because the leadership and the frontline have to embody their commitment to quality. Developing relevant capabilities is a crucial enabler in this context.

This is not only a challenge for leaders, but also their responsibility. Leaders can motivate people to imbibe and embrace a quality culture in four ways: by **showing**, or role modelling by senior leaders, managers and peers; by **telling**, fostering understanding and conviction through effective communication; by **teaching**, to develop talent and skills that support the quality journey; and by **encouraging**, reinforcing quality culture with formal mechanisms. A structured approach can help leaders to create a truly effective quality culture which

could, over time, help organizations to consistently deliver high-quality outcomes and earn an enviable reputation for excellence.

Embracing innovation

The scope for innovation in an organization could lie across three themes: product and portfolio, process, and business model. Indian auto suppliers have already innovated in these areas—forged aluminium wheels for commercial vehicles, optimized software to reduce wastage, and moved from parts to modules. But there is potential to do much more. European and North American players, for example, have historically been far more proactive on innovation than their Asian counterparts.

A successful innovation is one which is scalable, enabling the organization to maintain or increase performance even as sales volumes increase over time. In addition, the best innovations rest on unique abilities or strengths, are ingrained in the mindset of the organization, and form a core part of the organization's business—external and internal. Indian auto suppliers have a lot of choices when they consider product innovation—emission, electrification, safety, connectivity and electronics. They also have room to innovate on process and business model to drive efficiency or create new streams of revenue.

Within an organization, an innovation ecosystem can be developed with a focus on the eight essentials—aspire, choose, discover, evolve, accelerate, scale, extend and mobilize. Simultaneously, organizations need a supportive external ecosystem of OEMs, industry peers, academia, government and startups. It is worthwhile for all stakeholders to start thinking about their vision for an innovation ecosystem. This is a much-needed enabler to propel the Indian automotive components manufacturing industry towards its growth aspirations.



Indian auto suppliers are already at a position of strength. A quality and innovation focus could help them to grow faster and stronger, further increasing their market size and consolidating their global presence.



World-class quality and innovation: The next frontier

In the decade between 2006 and 2016, Indian automotive component manufacturers were particularly enterprising and developed world-class capabilities to emerge as reliable players in the global arena. The industry tripled its market size to reach INR 2,55,600 crore (approximately USD 39 billion)¹ during this period. And at INR 70,900 crore (approximately USD 11 billion)², exports constitute almost 30 percent of Indian automotive component manufacturers' revenue.

At the same time, the Indian industry needs to brace itself for competition from global players on both the domestic and export fronts. The Automotive Mission Plan (AMP) for 2026 has set ambitious aspirations for the industry to grow five-fold to INR 12,11,500 crore. The estimated growth in exports will be around 7x, contributing INR 4,62,500 crore, or around 38 percent of the industry's overall output.³ To achieve these aspirations, the Indian automotive components manufacturing industry will need to sharpen its focus on world-class quality and innovation, while remaining competitive on cost.

Why quality?

Quality could directly impact an organization's productivity. Across sectors, it has become increasingly evident that "good enough" quality is simply not good enough anymore. And it is also clear that compromising on quality has serious consequences. In today's globalized market, the severity and reach of a quality incident could cause permanent damage to a company. A strong and visible commitment to outstanding quality on the part of the leadership could be the most effective route to quality excellence.

In 2000, a North American automotive original equipment manufacturer (OEM) faced a number of quality issues, resulting in substantial recalls. The senior leadership decided to work on a series of initiatives—including Six Sigma training and standardizing processes—to effectively tackle the issue. Within a decade, the OEM improved their industry quality ranking from beyond 20 to the top five. They also doubled their EBITDA margin over the same period.

When an abrasives manufacturing company mired in customer complaints with dwindling sales committed to a "quality revolution", it reduced Defects in Parts Per Million (DPPM) by over a quarter, and more than doubled its sales.⁴

This upside, however, is possible only at outstanding levels of quality. Customer surveys have shown that while it is useful to go from "poor" to "good", the major upswing happens when moving from "good" to "outstanding". Exhibit 1 shows how achieving outstanding quality could lead to an exponential jump in customer satisfaction and loyalty for automotive OEMs.

1 USD 1 billion = INR 6,500 crore

2 ACMA presentation

3 The Automotive Mission Plan (AMP) 2016–26

4 *Quality matters*, a McKinsey & Company publication, November 2015



While the Indian automotive components manufacturing industry has taken major strides to improve quality, its efforts have typically been reactive. A more proactive approach could help to establish a culture of quality across organizations’ operating, management and people systems.

Why innovation

Global auto suppliers and companies that innovate regularly typically report higher growth and profitability than their peers. Indian (and Asian) players have lagged behind in the initiative to innovate. Between 2001 and 2011, European players drove more innovations—3.4 innovations per EUR 10 billion revenue—as compared to North American (1.7) and Asian (0.7) players.⁵

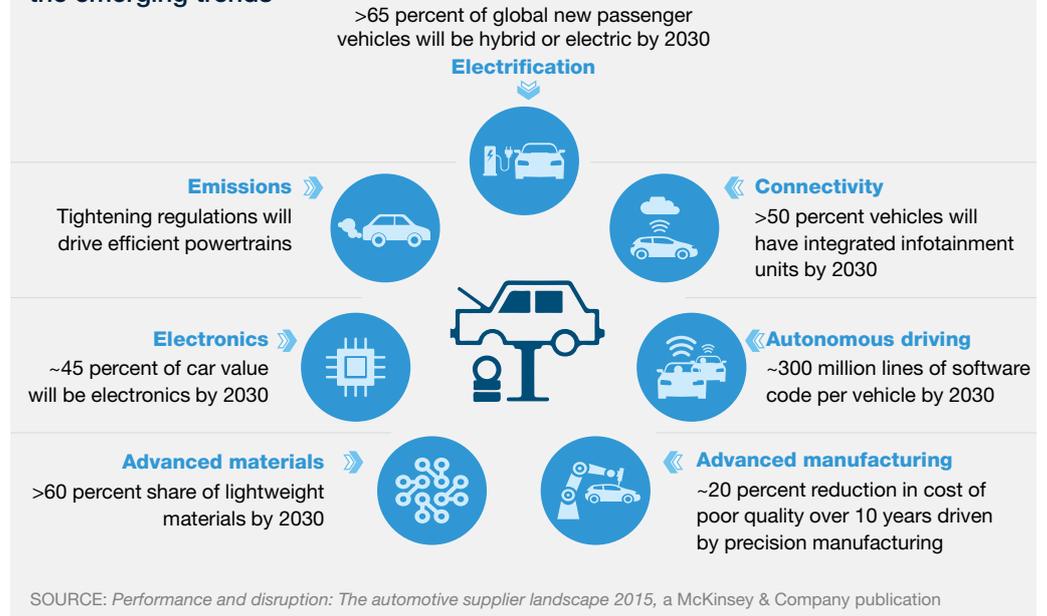
But now, the advent of new technologies and a changing regulatory environment are transforming the global automotive supplier industry (Exhibit 2).

The sector also seems to be gaining from outside interest in auto technologies. The first half of 2016 saw total investments of roughly USD 450 million across 36 deals in auto technology startups—almost equal to the USD 478 million worth of investments made in the entire year 2015.⁶ These investments range from new business models, such as ride-sharing, to innovative technology startups in the fields of electrification, connectivity, autonomous driving, advanced materials and manufacturing and electronics. Most global OEMs are also actively investing in startups to defend against disruption and to find new avenues of growth.

⁵ *New rules for winners*, a McKinsey & Company publication, May 2013

⁶ CB insights, <https://www.cbinsights.com/blog/auto-tech-funding-h1-2016/>

Exhibit 2: The automotive components manufacturing industry will evolve with the emerging trends



In this situation, traditional suppliers need to develop new capabilities to remain competitive against existing and emerging rivals.

Quality and innovation: The next steps

Around 10 members of the International Procurement Offices (IPO) of global OEMs were asked to compare Indian suppliers with global players on quality and innovation.⁷ Most of them believed that Indian suppliers were lagging on these parameters.

Indian suppliers will need to focus on quality excellence and innovation to compete effectively in both domestic and international markets. They will need to instill a culture of quality among their people and organizations. The industry could also play a more active role in creating a winning product portfolio to tackle competition from disruptive technology. It must step up to these challenges and derive learnings from other countries and industries on quality excellence and innovation.

7 ACMA IPO forum survey conducted by the McKinsey team in August 2016



Establishing a quality culture

A culture of quality could change the game for the Indian automotive components manufacturing industry. Creating outstanding quality boosts an organization's performance and bottomline and ensures customer loyalty. Compromising on quality could endanger or irreversibly damage reputations and businesses. It becomes necessary, therefore, to build a culture of quality into an organization's operating, management and people systems. This is not only a challenge for the leadership, but also their responsibility.

Building outstanding quality

Automotive suppliers can pursue quality excellence and reap its benefits by adopting a holistic approach that embeds a culture of quality into the organization's operating, management and people systems (Exhibit 3). It is critical for the leadership to demonstrate a commitment to quality consciousness, setting an example for the frontline.

Exhibit 3: Outstanding quality involves building quality into the operating, management and people systems



Quality in the operating system

Organizations may choose to build in quality at the development phase itself, learning from global benchmarks but factoring in the need for customization. At the same time, they could ensure supplier quality and standardize processes.

- **Invest for quality:** World-class infrastructure is a basic requirement to produce top-quality products. Capital investments in facilities and equipment ideally need to reflect a quality focus and cannot solely be based on cost.
- **Collaborate from the development phase:** Organizations may run the risk of follow-on quality challenges, with the attendant implications of high quality costs and decreased productivity, if quality is not built into the product development process. This could be achieved by adopting a quality gate approach to help measure progress on product development, including collaboration with customers across specialized units at a

predefined time. Such an approach also measures and evaluates performance for quality and completeness.

- **Go beyond Tier 1 suppliers' quality:** There could be three possible reasons for quality mishaps across Tier 1 supply chains—a lack of collaboration during the design phase, a lack of manufacturing capabilities and a lack of robust quality systems. Improving supplier capabilities, especially for Tier 2 and Tier 3, could upgrade quality performance. Companies have successfully fixed such quality issues in the past by involving suppliers earlier on in selecting and testing manufacturing technologies, engaging them in predictive metrics and performance management, and using internal expertise to build supplier capabilities and standardize quality procedures.
- **Introduce standardized processes:** Quality is an integral part of operations, and the reverse is true, too. One effective way to ensure operational quality is to shift from following local, ad hoc practices to standardized operating processes across all locations and functions.

Quality in the management system

This is possible when organizations set up a governance system that balances quality and other objectives. The leadership has to plan adequate management bandwidth and track predictive quality metrics to pre-empt quality concerns.

- **Introduce senior management and CEO-led quality reviews:** These could include setting up a corresponding meeting structure in a top-down manner, from the management to the shop floor, with clear agendas and participants, a target-setting process focused on quality linked to business objectives, and aligning metrics with the people performance management system.
- **Design leading and lagging quality metrics:** Organizations need to design leading metrics that can predict and correct future quality challenges, rather than backward-looking or lagging metrics that tell the story after the fact. Forward-looking, predictive or leading metrics can foretell quality outcomes and pre-empt challenges by allowing for course correction. Some predictive or input metrics to consider are process capability, e.g., Cpk, defect resolution times, number of pending CAPAs and design for excellence (DFx) score. These are by no means exhaustive, but vigilantly monitoring these key quality indicators and acting to improve them could boost quality performance levels.
- **Plan for management bandwidth:** The senior management needs to be involved in quality processes in an ongoing manner, instead of being called in to troubleshoot during escalated quality issues. Organizations could plan for adequate management bandwidth dedicated to quality in day-to-day operations.

Quality in the people system

The leadership and the frontline have to embody the commitment to quality. Building the relevant capabilities is a crucial enabler in this context. Leadership, governance, capabilities, mindset and integrity, and awareness are the five important attributes that could define and help to measure a quality culture and its progress over time (Exhibit 4).

Exhibit 4: Culture can be measured on five key dimensions to identify focus areas and measure progress over time



SOURCE: Expert interviews; McKinsey analysis

This sort of unceasing quality focus is possible when every individual in an organization is driven by quality consciousness. This is why creating an all-pervasive “culture of quality”, especially in the people system, is the greatest necessity and also the biggest challenge. Focusing on such a quality culture could help to identify the priorities for auto suppliers.

Creating a culture of quality

Organizations need a shift in their approach to create the kind of culture required for outstanding quality outcomes. The shift has to be from reactive, short-term fixes that put the onus on the supplier, to a proactive, collaborative approach that works with suppliers to create a long-term solution that could ensure quality. The focus could shift from just the product to the process that leads to its creation, keeping in mind the fit and finish. In addition, organizations could evolve from measuring only outcomes to measuring health and the drivers of quality.

Extensive research has shown that a quality culture drives up to 30 percent of the outcomes.⁸ This research is based on the link established between quality culture, as measured by an empirically tested survey on quality conducted at the employee level— including focus-group discussions with individuals, observation of shop-floor behaviours and learning from root causes of deviations or defects—and quality outcomes as measured by fewer rejections or higher lot-acceptance rates.

Leaders can inspire employees to imbibe a quality culture in four ways: by showing, by telling, by encouraging and by teaching them (Exhibit 5). This can be extremely effective, as examples from globally known organizations indicate.

8 McKinsey & Company proprietary POBOS benchmarking database

Exhibit 5: All companies, regardless of size and age, could create a culture of quality



- **“Show”**: Senior leaders, managers and peers role-model the desired quality-focused behaviour. At a major global OEM managers observe shop-floor activity in person to understand the issues on the ground. At a global biopharmaceutical company, the leadership set and then raised the aspiration on product quality, starting with performance boards, then process monitoring and eventually operational excellence to achieve Six Sigma quality. The leadership was always present on the shop floor and reviewed the Corrective Action Preventive Action (CAPA) for every process with $C_{pk} < 1.0$ in the top management meetings.
- **“Tell”**: The leadership fosters understanding and conviction through effective communication. An aerospace giant launched a company-wide initiative to move from a reactive to a preventive approach to quality concerns. It adopted harmonized yet simple standards and communications, e.g., moved away from approximately 200 tools to eight tools. It established a strong linkage with safety to help people feel a personal connect with their work. The organization also ensured total transparency on its quality performance. In another example closer home, NASSCOM⁹ galvanized the Indian IT industry around a series of quality metrics including the CMMI (Capability Maturity Model Integration) model. The top Indian IT companies, their leaders and NASSCOM endorsed and evangelized this model, with the result that it is now considered the global industry standard.
- **“Encourage”**: The leadership reinforces a quality culture with formal mechanisms. At a global conglomerate, 40 percent of every manager’s bonus is tied to quality and Six Sigma performance. Training in Six Sigma is a prerequisite throughout the organization to be considered for promotion to a managerial position or for receiving stock option awards. A global household goods retailer initiates a rigorous onboarding process for quality compliance by its suppliers, but forms long-term relationships with

9 *Quality matters*, a McKinsey & Company publication, November 2015

those who make the cut. Business development managers are held responsible for monitoring progress and supporting suppliers to fulfill quality requirements.

- **“Teach”:** The leadership invests to develop the talent and skills that can support the quality journey. A global conglomerate runs a quality-regulatory leadership program for quality assurance and regulatory affairs and an operations management leadership program on process re-engineering and Six Sigma. A global pharmaceutical company, too, has a quality development program over three 12-month rotations, strategically designed to give associates a holistic view of the organization’s quality manufacturing processes, systems and medical product lines. This approach also fosters the next rung of leadership with the necessary quality consciousness.

Demonstrating a commitment to quality

Creating quality consciousness at the frontline is only possible when the leadership visibly demonstrates a commitment to quality. They must “walk the talk” and encourage the entire organization to adopt a quality culture. Typically, what stops people from putting quality first is a mindset. While the ideal state is one where quality considerations determine every decision—in production, development or supplier interactions—in reality people often fail to do this because of a lack of time, focus, willingness, ability or incentives. Organizations must overcome these mindset hurdles before quality consciousness becomes apparent in employee behaviour.

Leaders play a pivotal role in transforming an organization’s quality perspective, and in entrenching the quality culture necessary for sustainable outcomes:

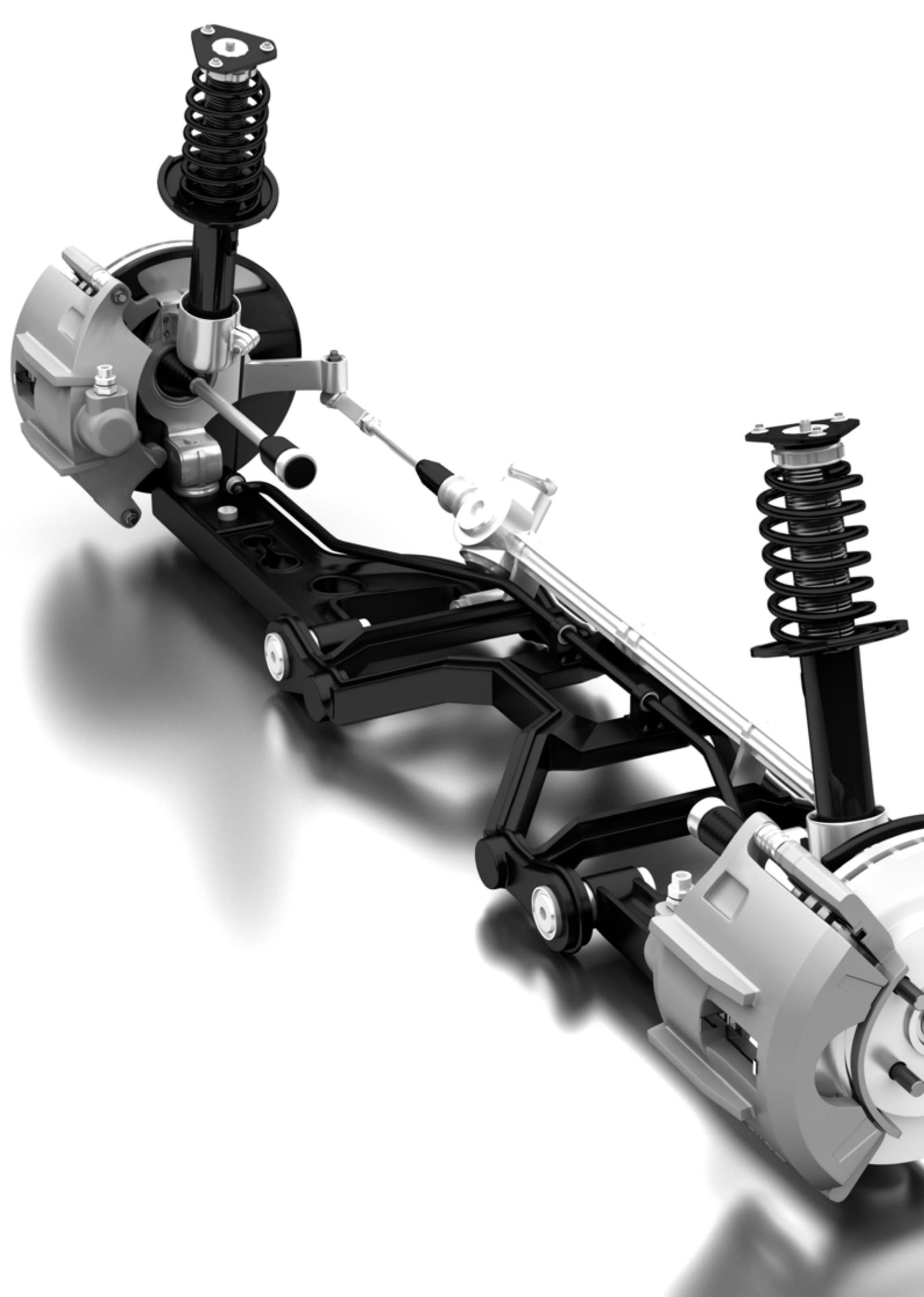
- They can **set direction** and aspirations for quality excellence. A particular CEO defined a quality vision and helped their organization to move from beyond the top 10 to the top three in industry quality rankings within a five-year period.
- Leaders can **role model** a quality approach by demonstrating their own conviction in quality-focused decision making. An Asian auto OEM CEO announced plans to focus efforts on improving product quality instead of adding new plants, despite increased demand.
- Leadership can also **create and share an inspirational change story**. Posters at a pharmaceutical company depicted real faces inside vials to constantly remind employees how each product impacted an individual’s health.
- They **can build a strong talent pool** to lead the quality function, for example, at a global auto supplier the CEO transferred the head of engineering to the quality function along with other top talent to bring about a quality focus.
- Leaders can **take ownership** for the quality agenda and hold every function accountable, as it is at a global aerospace company, where all functions are responsible for the top five KPIs, with visual dashboards to promote transparency and accountability.

This is a tall order, but not impossible if leaders adopt a structured approach to creating a truly effective quality culture. People at the top can successfully bring about such a transformation by questioning the status quo and identifying the root causes for a lack of quality focus. They have to demonstrate their own personal commitment to the task at hand in the way they spend their time, the questions they ask, their reactions to incidents, what they reward, and how extensively they coach (or not) their teams.

Building capabilities

As the automotive components manufacturing industry's need for quality and traceability increases, the demand for effective operations and skilled personnel is also increasing. There is a limited supply of experienced talent for such operations. Fresh graduates need months of additional training before they are industry-ready. Attrition and dependence on contract labour make things more difficult. Organizations need to recognize the importance of structured capability-building training programs on quality consciousness to instruct their employees.

Quality is an important enabler for sustainable and successful businesses. Leaders need to proactively embed a quality culture in the interest of their organization's reputation and bottomline. Over time, this quality culture-driven approach could help organizations to consistently deliver high-quality outcomes and earn an enviable reputation for excellence.



Embracing innovation

Innovation is an increasingly necessary response to the advent of new technologies and a changing regulatory environment across sectors. The automotive sector is no different. Indian auto suppliers have already taken some strides towards innovation, but could do much more in many areas. They need to recognize the significance of innovation and embrace it to meaningfully and successfully compete in the global market. This also requires a supportive ecosystem inside and outside the organization.

Innovation and its possibilities

Innovation means creating something new to transform performance. It can take the shape of new products, services, processes or business models that are sustainable and financially meaningful. The best innovations are scalable—maintaining or even increasing their levels of performance as sales volumes grow over time. They also have unique abilities or strengths, are ingrained in the mindset of an organization and form the core of the organization's business.

The Indian automotive components manufacturing industry could take a lead in global sales by innovating to delight and surprise customers. The possible areas of innovation for Indian auto suppliers are endless, ranging from lightweighting materials to breakthrough powertrain solutions:

- **Emissions:** Regulations offer suppliers several degrees of freedom to differentiate technological sophistication. The three main vectors here are efficiency improvement for conventional powertrains (through innovations in turbocharging, intercooling, etc.), weight reduction (through design innovation and adoption of lightweight materials) and alternative powertrains (through innovations in battery technology, hybrid powertrains and fuel cells, etc.).
- **Electrification:** Stronger regulations on CO₂ emissions, rising consumer demand, and government incentive programs for electric vehicles will boost electrical powertrain sales. An aggressive estimate shows that the market share of hybrid and electric vehicles is increasing and is estimated to grow to 65 percent by 2030, mostly driven by hybrid vehicles.¹⁰ Innovations in electric/hybrid powertrains, power electronics and hybrid gearbox could shape this car segment.
- **Safety:** Regulations and consumer demands are expanding the safety features of vehicles beyond reactive support such as seatbelts and airbags. Innovations include passive-driver assist like sensor-based warnings, active-driver assist like advanced driver assistance systems and automatic braking, and even autonomous driving. Indian suppliers have the opportunity to create market-specific safety solutions for India.
- **Connectivity:** The growing consumer demand for “Apple-like” experiences and an integrated ecosystem for embedded vehicle systems could bring auto suppliers into direct competition with tech giants. From infotainment systems and remote services to advanced maintenance systems, the field is evolving rapidly. Traditional suppliers might need to move beyond components and firmware to add capabilities of software and system integration to capture full value.

10 *Performance and disruption: The automotive supplier landscape 2015*, a McKinsey & Company publication



- Electronics:** By 2030, electronics could constitute around 45 percent of a car's value.¹¹ The share of electronics is increasing across the board because of emissions and safety regulations, electrification of the powertrain, consumer demand and economies of scale from outside the automotive industry like the use of LEDs and sensors in consumer electronics. Attractive avenues for innovation could include certain applications in powertrains, e.g., stop-start systems, electronic dual clutch transmission; chassis, e.g., electric power steering, electronic brake assist; safety, e.g., sensor-based warnings, tyre pressure, distance, lane departure; and body systems, e.g., electrochromic mirrors, rain-sensing wipers, adaptive front lights and LED lights.

Themes of innovation

Some self-reflection can help organizations to identify their scope for innovation across three themes: product and portfolio, process, and business model (Exhibit 6). Organizations could choose to innovate in any or all of these areas to create value and ensure more profitability.

Exhibit 6: Do you innovate?

Three themes of innovation

1 Product and portfolio	<ul style="list-style-type: none"> ▪ Have you added customer value to your product (e.g., lightweighting)? ▪ Have you added products in your portfolio that have strong tailwinds (e.g., electronics)? ▪ Do you have significant revenue (>20 percent) from new products added in the last 3–5 years?
2 Process	<ul style="list-style-type: none"> ▪ Have you evolved any new process to deliver superior customer value proposition through the product? (e.g., >20 percent scrap reduction) ▪ Have you innovated any business process to make the organization smarter? (e.g., PLC monitoring based remote governance/digital in manufacturing)
3 Business model	<ul style="list-style-type: none"> ▪ Have you changed your business from parts to modules? ▪ Have you invested talent and capital in growing international business (>20 percent of revenues)?

Product and portfolio

For automotive suppliers, sustainable product innovation emerges from a deep understanding of customer needs and consistently helping automakers satisfy industry regulations. Creating innovative products typically requires high R&D spend, but design control remains with the supplier, creating an entry barrier which helps them to maintain profitability. Indian suppliers have recently created several innovative products such as start-stop technology for Indian two-wheelers, forged aluminium wheels for commercial vehicles and a lightweight starter alternator for global compact cars.

While innovative products are important, organizations could take a more holistic view of their portfolio and reallocate resources such as capital, R&D budget and top talent to key growth areas in line with industry and global trends. There are several examples of global

¹¹ *Performance and disruption: The automotive supplier landscape 2015*, a McKinsey & Company publication

suppliers who actively transformed from a mechanical component to a more complex electronics-based portfolio.

Process

This involves perfecting an existing process by eliminating any missing links¹² and evolves through the organization's capabilities and ways of doing business. Suppliers could improve profitability through innovative sourcing, manufacturing and delivery processes that can reduce costs and/or add value to the customer. Indian suppliers have been quite active on this front. The use of rapid prototyping to cut tooling costs, optimization software to improve cutting profile design and reduce sheet metal wastage, and PLC-based automated measurement of casting and pouring are all examples of process innovation by Indian suppliers.

Business model

For automotive suppliers, interesting new business opportunities could arise from changing the value-chain dynamics, diversifying profit streams or changing the delivery models for an offering. Suppliers could start such a journey by asking themselves: Have I explored moving from "make-to-print" business to my own design? Can I move from parts to assembly? Can I move from selling a product to selling a service? Have I significantly diversified my revenue streams through internationalization or aftermarket focus? The answers may help automotive suppliers move towards a more rewarding business model.

Winning with innovation

Two important dimensions could prove critical in successful innovation in the Indian automotive components manufacturing industry—individual companies need to take ownership for innovation, and they require an ecosystem that supports innovation.

Driving innovation in the organization: Eight essentials

Innovation is a complex, company-wide endeavour that requires a set of cross-cutting practices and processes to structure, organize and encourage it. Eight essentials of innovation¹³ form such an operating system—aspire, choose, discover, evolve, accelerate, scale, extend and mobilize. Mastering multiple essentials could greatly enhance a company's chance of becoming a top-performing innovator.

The first four essentials—aspire, choose, discover, evolve—are strategic and creative in nature. They help to set and prioritize the terms and conditions under which innovation is more likely to thrive. The next four essentials—accelerate, scale, extend, mobilize—focus on delivering and organizing for innovation repeatedly over time, and with enough value to meaningfully contribute to overall performance.

12 *Innovation and entrepreneurship*, by Peter F. Drucker, 1985

13 *The eight essentials of innovation*, McKinsey Quarterly, April 2015

Aspire: Set SMART targets

Quantifying an “innovation target for growth” as an explicit part of strategic plans helps to make innovation more important and create accountability. The target itself must be large enough to prompt managers to include innovation investments in their business plans, e.g., setting a target to generate 20 percent revenue from electronics in five years.

Choose: Focus on a select few themes

Many companies run into difficulties not from a scarcity of new ideas but from the struggle to determine which ideas to support and scale. Thoughtfully prioritizing these spaces allows companies to invest in their most valuable opportunities, such as in lightweighting as an innovation theme.

Discover: Draw deep market insights

Actionable and differentiated insights can help companies to excite customers and bring new categories and markets into being. Companies that draw insights from deep, structured market studies and field visits can discover the true value of innovative products, such as identifying high-value underserved customer segments. They could gain such insights by methodically scrutinizing three areas: a valuable problem to solve, a technology that enables a solution and a business model that generates money from it.

Evolve: Build defensible businesses

Established companies must reinvent their businesses before new or existing competitors innovate to beat them at their own game. Most big companies are reluctant to tamper with their core business model until it is visibly under threat (and too late). They need to break free of this mindset with the changing times. For example, auto suppliers can consider creating a service offering through aftermarket retro fitments.

Accelerate: Fast development and launch

A cross-functional team empowered to accelerate decision-making can help time-sensitive projects to be successful. For example, the team could create the portfolio of choices in four weeks as opposed to many months.

Scale: Prepare for rapid growth

Organizations must marshal resources and capabilities to make sure a new product or service can be delivered quickly, in the desired volume and up to quality expectations. Sales, manufacturing facilities, suppliers, distributors and others must be prepared to execute a rapid and full rollout, e.g., by dedicating an international head in the early stages of internationalization.

Extend: Leverage external networks

Successful innovators tap the skills and talent of external networks—industry experts, university researchers, open innovation platforms, startups—to speed up innovation. This needs to be a strategic choice (and not an ad hoc decision) to ensure the best ideas

and people come their way. For example, innovators can partner with new-age startups to develop solutions.

Mobilize: Motivate the organization

The best companies find ways to embed innovation into their culture. Organizational changes may be necessary to promote collaboration, learning, and experimentation, perhaps through a push to share ideas and knowledge. This could be done by reserving half a day for cross-functional innovation, among other initiatives.

Creating a supportive ecosystem

While individual companies need to own innovation, a supportive ecosystem is equally crucial. A successful engagement between auto suppliers and the ecosystem—OEMs, industry, government support, academia and startups—is valuable and needed.

OEM collaborations

To pioneer innovation, the Indian automotive components manufacturing industry needs to actively think of ways and means to foster more OEM and supplier collaborations. There are successful examples of OEM and supplier collaborations as well as supplier-led innovations integrated by OEMs, and these can be found in developed as well as developing countries.

An innovative Indian supplier base could be beneficial for global and Indian OEMs alike. Stakeholders in the industry need to ask themselves: Are we doing enough for the Indian or global OEM–Indian supplier collaboration? What innovations can be co-developed to serve the Indian market? These could be, for example, more than 40 percent cheaper anti-braking systems, localized airbags and customized Bharat Stage-VI solutions.

Industry coalitions

Industry associations could support members by pooling monetary and material resources to boost the innovation potential of the industry. Several OEMs and OES came together to create AutoSar¹⁴—an open industry standard for automotive E/E software architecture. Basic software modules made available by AutoSar can be used across vehicles of different makes and electronic components of different suppliers, making R&D cheaper.

Forming peer partnerships can help to share development ideas, e.g., two global tyre companies worked together to develop an innovative tyre system.

Academia partnerships

The automotive components manufacturing industry will thrive with collaborations between academic institutions where it can tap into new ideas propelled by young minds. Global companies regularly partner with institutes to push innovation. For example, a global automotive OEM recently partnered with a reputed North American university to boost R&D in areas like artificial intelligence (AI), autonomous driving and robotics.

14 AUTOSAR – *Shaping the Future of a Global Standard*, by Dr. Stefan Schmerler

Such partnerships are not new to Indian institutes, e.g., a global conglomerate is partnering with a top Indian engineering institute to develop innovative applications using data and analytics to improve an industrial plant's efficiency and productivity.

The automotive components manufacturing industry could identify academic institutions that can fuel innovation and create a talent pool for recruitment. Internships and research scholarships for students can be good incentives while pioneering such partnerships.

Government support

Government support comes in different forms. Some central and local governments have R&D grants for key projects and suppliers could also get subsidized loans, access to free and subsidized land/building, tax rebates, etc. An Indian state government recently announced that it will establish a motor vehicle technical centre in a reputed technical university to focus on research related to emission mitigation and fuel consumption of automobiles.

Startup support

Fixed routines and cultural factors could impede big companies trying to reinvent themselves as leading innovators. OEMs and global Tier 1 suppliers are actively investing in auto technology startups to gain a competitive advantage and to protect against disruptive technologies and business models. The Indian automotive components manufacturing industry can fuel its innovation story in the same way.

Indian organizations could grow and gain profits by innovating across products, processes and business models. This could also help them compete with their global peers. It is time for the industry to make innovation a part of its DNA by encouraging and supporting businesses to innovate.



The Automotive Mission Plan 2026 is a bold agenda for tremendous growth for India's automotive supplier industry. Indian auto suppliers already have the strengths of process and skill-intensive products, in addition to a cost advantage, that have driven a three-fold growth in market size over the past decade. However, this may not be sufficient for the next leap toward five-fold growth.

Zero-defect is an increasingly non-negotiable demand in today's competitive scenario. Organizations will benefit from adopting and intensifying their quality agenda and embracing an innovation focus, as outlined in this report. The role of the leadership is crucial in enabling and empowering such a significant shift. Leaders need to demonstrate commitment to quality through capital, top talent and personal time allocations. Embracing innovation requires a supportive ecosystem both within and outside the organization. In particular, OEMs and suppliers need to collaborate and drive quality and innovation in the industry.

Prioritizing quality and innovation can help auto suppliers and the industry as a whole to respond effectively to changing global trends, consolidating their presence in the market worldwide. This is the need of the hour.

Notes

Notes

