



How auto
suppliers can
navigate EV
technology
disruption in
four steps

Capital allocation and business structure decisions taken now are critical to the success of automotive suppliers undergoing change.

In Brief:

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The transition to EVs is happening much faster than anticipated, leaving many automotive suppliers struggling to respond

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Smart capital allocation decisions and organizational agility can help automotive suppliers prepare for EV transition

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EY's proprietary framework for evaluating strategic options can help companies reposition product portfolios and boost total shareholder returns

Fueled by a global commitment to developing sustainable energy solutions and decarbonization imperatives being demanded by customers, structural shifts in the automotive industry are emerging at a faster pace than many previously anticipated. The US has set a goal that by 2030, half of the vehicles sold in the US will be battery electric, fuel-cell electric or plug-in hybrid.¹ Other parts of the world are also well ahead on their transition to electric vehicles (EVs), as evidenced through original equipment manufacturing (OEM) offerings, government legislation and consumer incentives. Some OEMs recently agreed to new goals during the recent 26th UN Climate Change Conference of Parties (COP26).²

Safer, "greener," connected and autonomous cars increase the share of software value and require distinct strategies within the vehicle's electrical and electronic (E/E) architecture, while some traditional hardware components are either becoming obsolete or are at the verge of becoming largely commoditized.

EY researchers recently conducted interviews with more than a dozen senior executives from automotive suppliers across the globe to discuss industry changes. Most participants felt that companies must begin to plan for change now or risk losing out to competitors in the future.

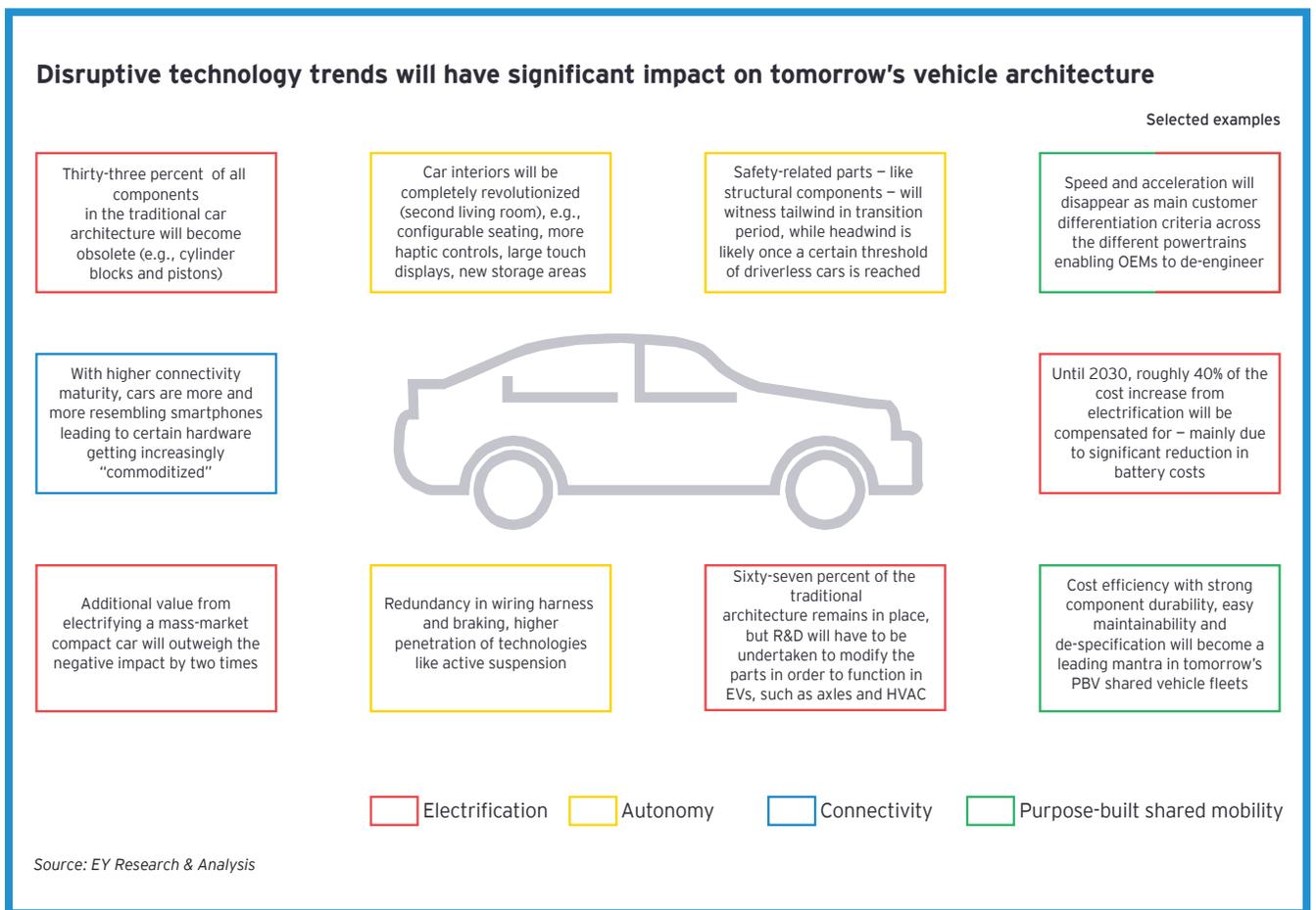
“ The electrification train has left the station. It has picked up so much speed that it becomes nearly impossible to jump on it if you are not already riding it,” said a CEO of a European diversified automotive parts supplier in a recent interview with EY researchers.³

EV migration offers new opportunities for auto suppliers but requires careful planning

Industry changes presents automotive suppliers with a significant opportunity to reshape their businesses and modernize business models.

For example, the transition to EVs will cause profit pools to shift from traditional internal combustion engine (ICE) components to e-drive modules and systems. This point is further illustrated when we consider that a typical ICE drivetrain has roughly 2000 moving parts compared to an EV which often has 20.⁴ As such, some suppliers will need to invest in modification and upgrades to realize profits and harness this additional value.

The additional value from electrifying a mass-market compact car, either through new components, modules and systems, or through needed modification and upgrades, will outweigh losses by two times. EY research analysis indicates that until 2030, roughly 40% of this value increase may be compensated for – mainly due to a significant reduction in battery costs.⁵



In fact, it is important to note that engines might not be the heart of the car anymore, but rather the central processing unit driven by various software applications. Vehicle autonomy can boost the software value by roughly five to six times. EY research analysis further indicates that these disruptive changes to the vehicle's architecture will likely lead to shifting value and profit pools through 2030,⁶ requiring both original OEMs and suppliers to review their overall business models based on the evaluation of different realistic future scenarios.

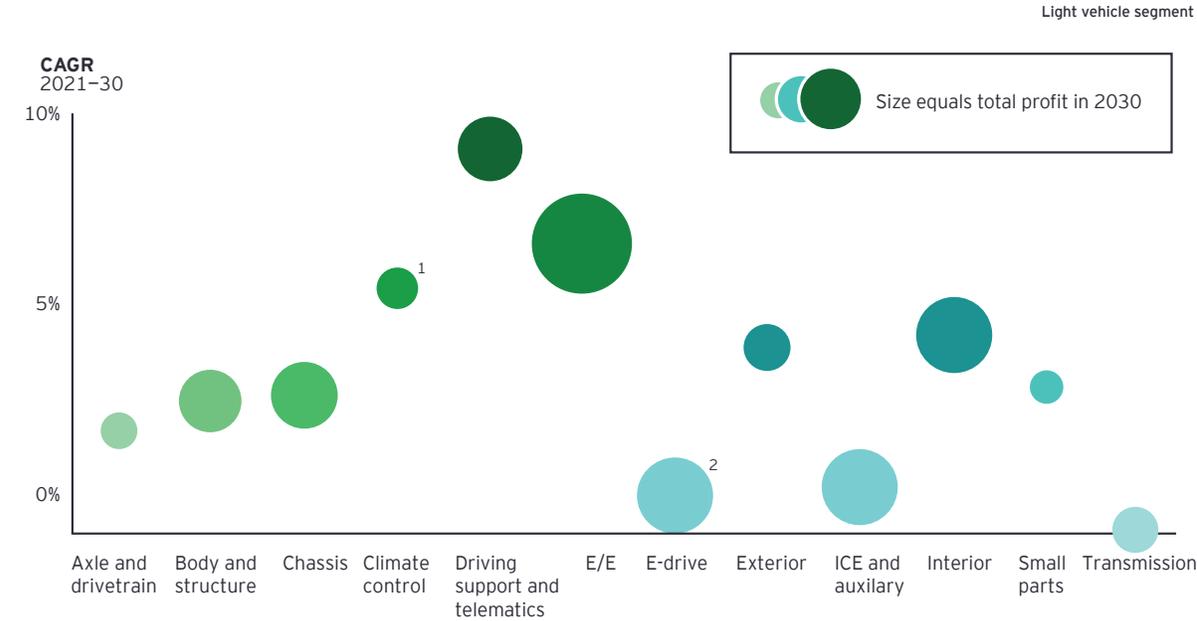
Predicting the future is highly complex as the relevant drivers of change are manifold, diverging by region and often either accelerating or contracting each other. EY has developed several future scenarios for technological disruption.

High-level technology assumptions for 2030

One scenario that EY views as very likely assumes relative robust economic growth for the global economy, e.g., the gross domestic product growth remains relatively stable and the trend in urbanization and population growth persists – with perpetuated differences on a regional level.

In this predictive scenario, EVs will become more prominent as more governments introduce measures to decarbonize fleets, especially in the developed countries and China. Customers may also drive the uptake of EVs due to the combination of being more environmentally conscious, dropping battery costs and the reduced total cost of ownership. It should be noted that these assumptions are based upon current EV-related subsidies and government programs which are subject to cancellation or modification.

Profit pool forecast by major vehicle system 2021–30



1. E-drive CAGR set to 0 given navigate base in 2021
 2. Includes battery thermal management
 Source: EY Research & Analysis

Roughly 25% of today's profits are generated from legacy ICE assets that will be the most adversely impacted by 2030, resulting in a 50% decrease from current levels. Disruption will require a nimble and well-coordinated strategic response, along with favorable policy changes by local authorities.

Some additional connected car features with higher customer value and monetization options will be introduced in the market because of customers' increased willingness to share basic data for advanced analytics offerings and the associated simulation of data, as well as the fact that OEMs increasingly recognize the importance of partnerships with third-party vendors.

Autonomous driving will remain a niche product mostly limited to conditional and highly automated features in selective, marked-off areas. Regional differences will remain significant. For shared mobility, the positive momentum will continue across the globe. Penetration of different concepts (e.g., ride hailing versus car sharing) differ by region. However, despite increasing popularity, the associated effect on new vehicle registrations remains small. Purpose-built vehicles based on existing platforms will gain importance until 2030.

Automotive OEMs and suppliers alike have understood the significant impact on the future car architecture and invested heavily into new growth areas. Some players have already started to streamline their ICE-related portfolios, while others have disconnected them and are now managing the business separately. Various capital allocation choices are emerging, including investment in captive capacity, acquisitions, spin-offs and joint ventures (JVs), among others. Examples include:

- ▶ A European supplier invested in a hydrogen storage system manufacturer, another acquired a battery maker, while yet another global player plans to invest over €1b in fuel cell technologies in the next four years alone.
- ▶ A global tier 1 supplier recently acquired an advanced driver assistance system specialist for trucks and trailers.
- ▶ A large US automotive supplier spun off its turbocharger division, while another US peer split into two separate entities – one with a focus on electronics and one focused on powertrain solutions. Yet another European peer separated its powertrain business and is currently planning for its initial public offering (IPO).

Four steps companies can take to foster their strategic evolution

While peak ICE vehicle sales may be a thing of the past, long-term value can still be generated in traditional value pools – if the business model, organization and operations are designed accordingly.

Suppliers must perform a balancing act and simultaneously manage components and systems that are dedicated to ICE vehicles, while increasing their investments in new EV-related components and various other new key technologies, such as software. Timing and aggressiveness will dictate success. Companies can begin their journey by:

- ▶ Defining the strategic target picture
- ▶ Determining future business and product portfolios
- ▶ Defining target operating models
- ▶ Executing strategic options

Step 1: Defining the strategic target picture

It is crucial to evaluate if there is only one strategy or several parallel strategies to effectively fulfill diverging portfolio requirements and subsequently solve for both “new” business avenues, as well as any legacy or wind-down businesses. Developing a robust target picture requires a holistic and unbiased “no sacred cows” assessment of two perspectives:

- ▶ **External** - expectations of the automotive sector and segment growth trends and their variability, market attractiveness, competition and new technologies
 - ▶ **Internal** - how capable and flexible the organization is in terms of workforce, know-how, resource availability and financial stability to achieve target aspirations
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Step 2: Determining future business and product portfolios

After the strategic guardrails are clear, the range of options and associated feasibility for the future organization must be defined at a more detailed level. Questions, such as those below, should be looked at on several levels, from assessing individual products, business units and the overall enterprise.

- ▶ Where do I want to play?
- ▶ How do I want to play?
- ▶ How long do I want to play?
- ▶ Who should I partner with?

To determine the optimal future business portfolio, new segments should be identified and evaluated by their adjacency to the current business, the implementation complexity, the future right to win, and any potential barriers to entry or exit. It is important to determine which customer segment of the ecosystem should be in focus, such as off-highway, passenger car and trucks, and to align regional strategies to public versus private sector investments. For a well-structured portfolio, it is also vital to streamline existing offerings. A differentiation between future core versus non-core capabilities, along with targeted wind-down businesses, can release capital for better investment avenues. Scenario planning and iterative refinement of the road map play a prominent role in this process.

Step 3: Defining Target Operating Models

Once the key focus areas have been determined, the design of the targeted operating models (TOMs) follows. The priority should be to provide maximum flexibility to react dynamically and successfully navigate a rapidly evolving automotive sector. To do so, one single operating model within a current enterprise might not be sufficient. Instead, tailored modifications for business segments with diverging requirements - for instance, positive trajectory areas versus wind-down situations - might be beneficial.

As companies evaluate a range of strategic options, setting up guardrails and identifying distressed or legacy assets “in perimeter” can bring a heightened focus and business imperative for action. Setting up strategic business groups (SBGs) to effectively manage distressed assets and future growth bet investments in parallel is emerging as a viable strategy. An SBG is a quasi-carve-out, with a dedicated leadership team of one or multiple business units that then can be transformed much easier and faster than traditional, more entangled enterprise structures. SBGs offer greater flexibility to react to market opportunities and the ability to foster growth initiatives. They also provide better steering, capital allocation and risk shielding to the organization, while at the same time remaining independent so that responsibilities and accountabilities can be matched effectively.

In contrast to a full carve-out, a fallback on the existing support function structure avoids high additional costs for a stand-alone unit. But a word of caution: in many cases, a company and its TOM cannot be structured freely. There may be inherent inhibitors to the envisioned structure, such as the level of entanglement with the core business. The operational complexity could be extremely high, along with associated costs, making it only worthwhile in case of a potential opportunity. It is important to remember that SBGs are only built for strategically important units with a certain need for flexibility.

SBGs are more common in Europe as their ownership structure and government support allows for more operational flexibility. In contrast, US companies, which are largely influenced by capital markets and public company shareholders, are more likely to create spin-off entities.

In the end, the organizational design and resource allocation generally must enable the envisioned strategy, letting the vision reverberate culturally throughout the organization while keeping execution options in mind. A company that is set up for partnering is designed differently than a company where growth initiatives are planned to be developed in-house or a company that is envisioned for an asset-light setup. An SBG alleviates these problems to some extent, as it offers maximum flexibility and can be altered at a faster rate.

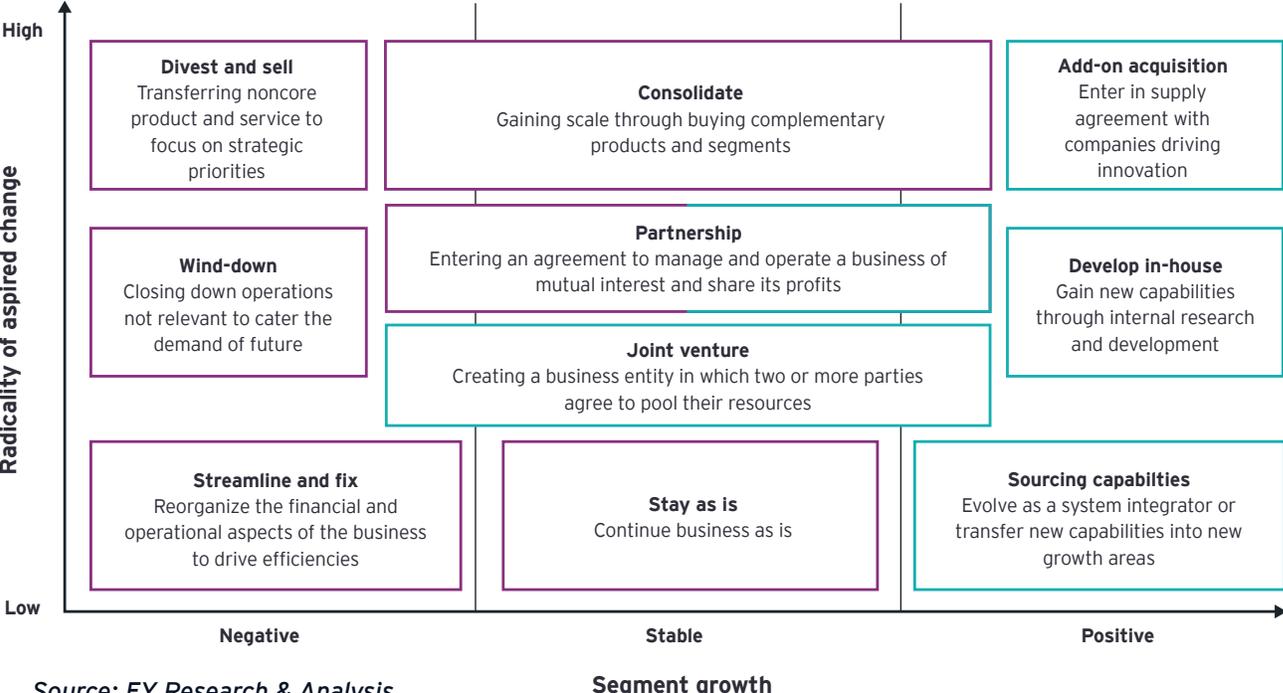
Step 4: Executing strategic options

Whether it is regarding the legacy product portfolio or potential new business segments, future strategic measures can take a variety of forms and face unique hurdles. The future road map depends upon:

- ▶ Defining a radical vision and managing change for the organization to achieve the TOM
- ▶ Ability of the legacy business model and organization to “flex” and adapt
- ▶ Making appropriate investment decisions to reallocate capital for future growth bets
- ▶ Opportunity to cost effectively fund the envisioned strategy
- ▶ Retraining talent to develop new capabilities and support the TOM
- ▶ Ability to secure a robust supply chain
- ▶ Growth within the specific market or product segment or the expected wind down cycle of legacy products and business areas

EY framework for evaluating strategic options

EY has developed a proprietary framework to evaluate the strategic measures, including the legacy portfolio, new revenue opportunities and associated capital allocation choices.



Source: EY Research & Analysis

As executives make decisions about future product portfolios, it is critical that they balance short-term earnings and shareholder and lender expectations with long-term profitable growth objectives. “The most difficult aspects of today’s business are capital allocation and balancing short-term and long-term ambitions as it is crucial to create profitability and cash short-term, without jeopardizing the long-term outlook,” said the CEO of a diversified European supplier.

Strategic options to consider:

Companies can consider a variety of strategic options including:

Divest: Divesting parts of the business (e.g., manufacturing facilities, distribution networks, entire capabilities or business units) can help raise the required capital for investment into innovation bets. Although radical, it might become very critical when limited cash is available for future innovations and the capability is noncore. Furthermore, it is important to monetize the business while it still has an adequate market value as it could be very challenging to find a buyer paying good market value for a core ICE technology business unit a few years later when EV adoption has further accelerated. The divestment could be to a strategic or a financial buyer and both options need to be evaluated carefully due to the implications for the duration of the transition service and manufacturing agreements.

Wind-down: In the case of segments at risk of obsolescence (e.g., ICE related), some suppliers could claim to be the last person standing. This would require a unique strategy on a long-term streamlining effort, as described above, and the proactive implementation of relevant ramp-down processes. However, internal hurdles, such as staff inflexibility and the adoption of new ways of working (e.g., away from new products and growth pursued for decades and toward a focus on maintenance, complexity reduction and a slow shutdown), can disincentive employees and impact morale.

Cost leadership and strong market positioning within an increasingly oligopolistic market will become the most prominent mantra. The overall focus will shift from product to process innovation and from efficiency gains to securing the supply chain, while production capacity needs to be managed continuously based on smart production volume bundling – all of which are part of an effective stranded (manufacturing) asset exit strategy.

A robust aftermarket strategy becomes a key pillar for success, too. Refinancing options may become more and more difficult over time. Therefore, suppliers need to have strong and transparent collaboration with their investors and financiers.

Streamline operations, resource allocation and portfolios: Streamline operations, resource allocation and portfolios to reduce the overall complexity, increase efficiency, and optimize the capacity and footprint. Compared with other rationalization efforts, this option appears less radical and mostly creates comparable marginal improvements to the legacy portfolio, while still consuming relatively high capital. Therefore, the company would need to evaluate the return on the future potential of the investments versus new revenue opportunities, especially when the capital is limited.



Ecosystem innovation: Ecosystem innovation is another strategy many companies are considering. Asset-light strategies and business models, which involve transferring assets to “better owners” to enable companies to transition from fixed costs to variable costs, are increasingly gaining traction across sectors as companies seek to deliver profitable growth while managing capital prudently. These assets can include hard assets, such as property, plant and equipment, as well as soft assets such as product development, channel plays, information technology and customer loyalty programs.

Consolidating or a merger: Consolidating or merging with equals, even historic competitors, could be an option in a stable market environment where scale will be important. This can drive capacity and revenue synergies for future innovations, where possible. Merging with complementary product companies can help diversify the product portfolio and increase the value chain depth of the combined company to enable profitability. Also, merging real estate and factories provides the opportunity to repurpose factories or sell off less productive assets when prices are high. Importantly, consolidation will also be an instrument for ramping down to gain necessary market power to dictate prices, while creating the needed scale effects to reduce costs.

One potential scenario emerging, more prominently in the US, is a private equity (PE) buyer-focused “roll-up” strategy with the goal to consolidate legacy assets. PE entities can use their pronounced value creation capabilities and specialized leadership talent with automotive experience to pursue such strategy. This can become a viable strategy when the targets’ core technologies can also be transferred to adjacent markets, or if the portfolio contains further valuable technologies. This may vary globally, as PE activity is still very nascent in the European region due to regulatory differences, particularly labor laws. These are critical decision variables, especially in case of potential restructuring and capacity consolidation decisions, resulting in plant shutdowns and exits.

With regard to the current semiconductor shortage facing the automotive industry, the CEO of a diversified US supplier noted in an interview with EY researchers that “If car manufacturers want to avoid even larger supply chain disruptions than the current semiconductor shortage, they must work closely with their strong suppliers to manage a structured market consolidation. In the end, OEMs need their suppliers and vice versa.”

Partnership and joint ventures: Companies that prefer to maintain autonomy often choose this option. Forming a JV for a selection of products, whether legacy or new, provides an opportunity to combine forces and complement each other – from both a capital and a resources standpoint. However, these must be developed carefully. The creation of a joint target picture, systems and processes harmonization, implementation of common success factors and key performance indicator tracking systems, as well as fostering strong communication channels between equals, are important to creating mutual long-term value.

Stay as is: Undoubtedly, the riskiest option in this rapidly changing environment is staying as is. It is applicable to a small fraction of companies whose current business may perhaps not be disrupted by the ongoing industry transformation. Yet, those companies may also miss out on the opportunity to grow into new business areas. Latecomers often need better arguments and higher capital to persist in an already relatively matured market.

Developing in-house: This is an option when the technology is nascent, capital is adequate and resources with required capabilities are available. However, the company should carefully evaluate its internal capabilities, such as talent and technology, and the likely future market scenarios before investing capital in new technologies, while also balancing this with the legacy portfolio. A long-term view is essential to assess if there is true value, even beyond the low-hanging fruit.

Sourcing capabilities and vertical integration: Companies can expand their value proposition via smart procurement of complementary technology and vertically integrate (e.g., becoming a system integrator) or enable the transfer of new capabilities into new growth areas. Additionally, purchasing adjacent products or components can help companies implement robust aftermarket strategies, such as becoming a one-stop platform for ICE technology. This can help companies create and enter new market segments, leveraging current capabilities to create a competitive edge.



Add-on acquisition: These acquisitions are performed mainly when the capabilities required for the future state cannot be developed in-house in a timely manner due to required capital or the lack of resources. Finding the right target, structuring the deal for success and paying the right price are important aspects to achieve the desired future state. Evaluating all aspects of people, processes, systems and assets prior to acquisition will be important for the smooth integration of the companies. When done correctly, the combined companies can realize synergies, go to market at the desired speed and offer differentiated products.

The strategic options above may be acted upon either as a stand-alone option or in combination with parallel TOMs to transform the organization and prepare the company for future success. For example, a cash-strapped company can divest a business unit with down trending market demand to raise capital and acquire a new company with innovative capabilities that fit the parent company's future state.

Finally, it is unknown how much support will be extended by local regulatory authorities, governments and OEMs to help suppliers and associated talent pools transition successfully. Investments in retooling assets and talent will also require a thoughtful investment that accounts for the environmental, social and governance impact of any strategy.

Key considerations

As supplier executives begin to think about their company's journey, it is important that they critically ask the following questions:

What are the capital and resource allocation choices facing the key executives and are they aligned?

How do we balance investments between legacy assets vs. growth bets?

Does the current operating model support our growth ambitions?

How do we leverage the strength of our OEM customers and our own suppliers to influence the regulatory environment and the consumer shift (e.g., incentives)?

Which partnerships could set the stage for a significant competitive advantage? Should we be doubling down on software capabilities?

What will my company's role and value-add be in the overall automotive ecosystem and value chain?

Is there an asset-light model that will allow us to keep the revenue stream, but lighten up the asset and property, plant and equipment load?

Summary

The transition to EVs is expected to be rapid and will likely have a significant impact on capital allocation decisions of nearly all automotive suppliers. During this transition, companies must balance the need to maintain existing ICE-related vehicle components with innovative offerings and growth bets. To successfully transition, it is essential that companies act now to prepare for the upcoming change. Suppliers can proactively leverage this pivotal moment to optimize their capital allocation decisions related to current operations, avoiding stranded assets, propelling profitable growth and subsequently remaining the supplier of choice, whether the future is electric, connected, autonomous or a combination.

EY is well positioned to help companies adapt to the electrification trend, mitigate the impact on product portfolios, define lean winddown businesses, and increase TSR by:

-  Helping executives identify and understand the available options in broader ecosystem
-  Scenario modeling and assessment of TOMs and business groups
-  Isolating which legacy assets and capabilities should be in the perimeter
-  Understanding how to drive change using in-house SBGs and anticipate risks
-  Leveraging our cross sectoral footprint by connecting key stakeholders of new emerging ecosystems such as governments, utility and mobility players

In an era of constant change and disruption, it is important to remember that strategy never stops, and operating models are constantly transforming. It is a continuous process of monitoring and refinement, especially during times of fundamental industry disruption. With a strong focus on end-to-end strategy realization, EY professionals are actively supporting suppliers as they navigate the whole cycle of strategic change.

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