

Absorbing disruptions

Automotive's strategic plan to tackle a new world

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Introduction

Why automotive needs a new global positioning system.

Over the last few decades, the key strategic premise for businesses has been a globalized economy enabling operations on an international scale. Global carmakers—also known as original equipment manufacturers (OEMs)—have profited from the rapid expansion of the world economy and taken advantage of opening markets and the removal of trade barriers. This strategy has created long-term benefits for both OEMs and consumers. The industry has enjoyed steady sales growth, intense innovation, greater cost efficiency and lower prices. Indeed, a large part of OEMs' recent growth has come from the Chinese car market. It's the biggest in the world today, accounting for sales almost double those in Europe and North America.¹

However, the collective impacts of the pandemic, the war in Ukraine and rising geopolitical tensions have revealed the fragility of the interconnected global economy. Disrupted supply chains, raw material shortages and

rising inflation are all taking their toll on the automotive industry. But unlike the shocks of the past, such as the global financial crisis, this time the long-term impacts are far-reaching. The premises underpinning strategies are changing permanently. This is exerting additional pressure on an industry which, thanks to the switch to eMobility and the move to green business, already has a very stretched strategic agenda.

More than ever before, OEMs are forced to go all-in for what we call "compressed transformation" (i.e. transforming multiple parts of their organization all at once and doing it fast²). Why is this so important? Because the change affects all areas of their business, from the flexibility of switching production volumes between powertrains, to sourcing strategies for parts and entire car models, to developing new multicultural standards across the organization.

Rather than reeling from the shock of all these changes, OEMs need to see them as an unprecedented opportunity to increase their competitive advantage. Crises generate new business possibilities, and even entire industries. For example, think about how the pandemic forced the rapid digitization of work to create the "zoom economy". The impacts of automotive's dramatic strategic change will be equally profound. We believe that the winners will be the OEMs who adapt and reinvent themselves. That means developing future-ready capabilities and harnessing technology to enable transformation that drives constant renewal.

This paper is a guide for the essential decisions involved in setting up a resilient organization. We've made our recommendations in direct response to the unique needs of the automotive industry and aim to set out concrete measures that OEMs can take to protect and grow their businesses.

02



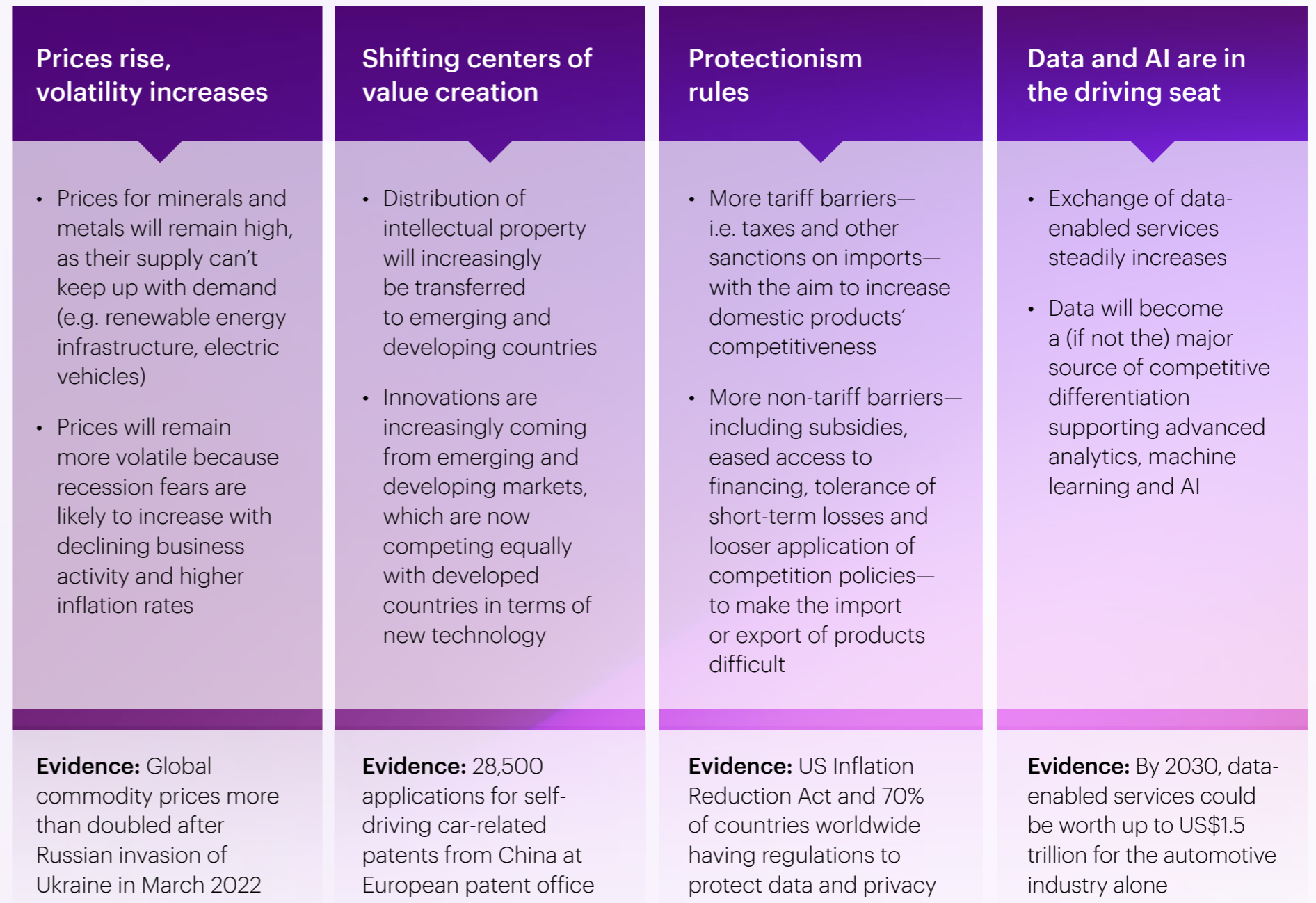
A complete
strategic refit.

Figure 1

Overview of new strategic premises^{4, 5, 6, 7, 8}

Accenture research shows that most companies—86%—are “Transformers.”³ They focus on transforming parts of their business rather than the whole. They tend to treat transformation as a linear series of finite programs, not a continuous process.

However, the economic and geopolitical certainties of the last few decades have given way to volatility and disruption across multiple fronts (see Figure 1). The premises underpinning automotive OEMs’ strategies are therefore changing too. And that is ramping up the pressure for automotive OEMs to take an end-to-end approach that will affect virtually the entire organization. All this comes at a time when the industry is already undergoing the biggest transformation in its history, from internal combustion engines to electric vehicles (EVs) and green business, which is now under even more pressure.



The combined weight of these developments imposes an enormous burden on OEMs. In response, they will have to develop new products, business areas, capabilities, and structures. In the following pages, we outline the **10 concrete steps** they'll need to follow to achieve this. We also believe that a strong digital core which brings together automation, AI, data, analytics, cloud, and more will be fundamental to managing the required business transformations (see Accenture's [Total Enterprise Reinvention](#) report for more detail). No surprise, then, that 97% of automotive CxOs agree that the role of technology in their business has increased over the last couple of years⁹ and will continue to play a critical role in both their organizations' reinvention strategies and transformation programs. In other words, all strategies lead to more technology. And it's through technology that OEMs will be able to navigate the new era independently, while managing costs and growing revenue.



Reinventing supply for a disrupted world.

Globalization separated automotive OEMs' procurement, production and sales markets. For instance, the cobalt for electric car batteries is mined in Africa and the batteries are made in Asia and sold in Europe. As recent crises show, global supply chains like these can't absorb disruption. One example? For cost reasons, OEMs only sourced wire harnesses from Ukraine. Unskilled workers there patched together cable bundles for €3 an hour, while the same bundle would have cost €54 if packed in Germany.¹⁰ But the war cut off supply.

As a result of developments like that, availability, and speed (especially time to market) are becoming more important than cost, as confirmed by 76% of North American automotive executives.¹¹ OEMs today are responding with sourcing strategies such as reshoring, local-for-local and decoupling (separating inventories and bringing them closer to the sales market) at the expense of cost. Indeed, 97% of automotive CxOs say that shifting from global to more regionalized or local supply chains is an important priority for their organization.¹²

The decision, however, should not have to be between optimizing availability or cost. Instead, we believe that OEMs can achieve both by taking the following five steps:

1

Combine global and local supply

2

Control value-added processes

3

Bring more of the supply chain in-house

4

Digitize the supply chain

5

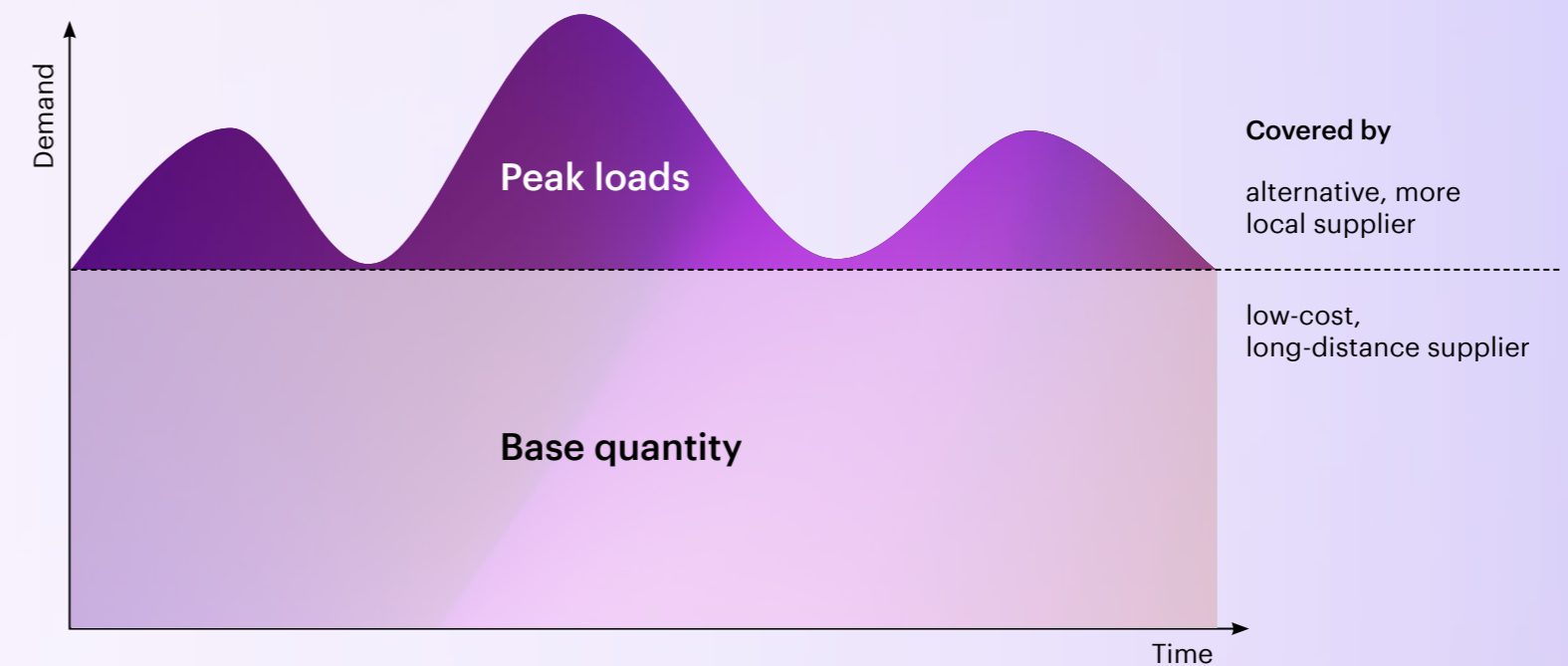
Reduce, reuse, recycle

Step 1 Combine global and local supply

To support a combined sourcing approach, OEMs will need to revive the dual and multiple sourcing strategies the industry abandoned many years ago in favor of single-sourced components. To keep sourcing costs reasonable, we suggest that low-cost locations—mostly in Eastern Asia—should remain as the primary supply source for parts. However, to ensure flexibility, OEMs should use at least one alternative, local supplier. The local supplier acts as a buffer against unexpected surges in demand. The low-cost, long-distance supplier accounts for most of the stock (based on estimations of minimum order quantities, shipping consolidation, door-to-door delivery times, etc.) (see Figure 2). The combined approach is particularly relevant for critical components, whose absence could bring production lines to a standstill, including for semi-conductors and EV batteries. But the approach should also cover more ordinary parts, such as wire harnesses or door locks. For example, Skoda and its supplier, PEKM Kabeltechnik, duplicate Ukrainian production of wire harnesses at its home plant in Czech Republic.¹³

Figure 2

The idea of a combined sourcing approach





Step 2 Control value-added processes

As availability and speed become more important, OEMs need to give up the idea of “lean management”. This is the widely-used approach to reduce costs by focusing on just-in-time delivery rather than warehousing. Forty-six percent of automotive CxOs¹⁴ indicate that a high priority for them is to maintain additional inventory of critical parts to allow for unaccounted fluctuations in demand and to build buffers against delays and disruptions. For example, Toyota’s business continuity plan required suppliers to store between two- and six-months’ worth of semiconductors, depending on the time from order to delivery.¹⁵ As a result, Toyota faced fewer delivery problems during the recent semiconductor crisis. Shorter delivery times also opened the door for Chinese manufacturers in Europe. Car rental companies wanted to drive the electric offensive, but the preferred European partners could not deliver—Chinese OEMs could.

Step 3 Bring more of the supply chain in-house

We believe that increasing in-house vertical integration can bolster security of supply and reduce uncertainty. While it often comes with substantial upfront costs, a more vertically integrated supply chain can cope better with changes in the operational environment. One important consideration for OEMs needs to be whether vertical integration can lower total cost of ownership or reduce risk. For instance, China’s BYD produces its own batteries to power its electric car fleet,¹⁶ while traditional OEMs source mostly from third parties such as Panasonic, LG Energy Solution and CATL.¹⁷ What is the key to succeeding with a vertical business? The smooth flow of information between all parts that’s then translated into coordinated and meaningful actions.



Step 4 Digitize the supply chain

We also recommend the use of digital tools and solutions to make supply chains faster, more efficient and more robust—all vital qualities when dealing with more fragmented supply chains. Achieving better supply chain visibility should be a priority, as reported by 50% of automotive CxOs.¹⁸ To deliver it, automotive OEMs need to establish total supply chain transparency in real-time through cloud solutions that integrate data from suppliers, manufacturers, service providers and others. Combined with blockchain technology and advanced analytics, transparency enables performance management systems that “learn” to identify—and then handle—risks or exceptions. It’s possible to manage warehousing, transport and inventory automatically

by initiating orders based on advanced forecasts and updated targets. This reduces the risk of human error and ensures availability of products as and when needed.

BMW, for instance, has initiated the organization PartChain, using blockchain and cloud technologies to increase the transparency of its raw materials and components supply chains for all partners involved.¹⁹ Moreover, automakers can engage in open data ecosystems like Catena-X, which are designed to enable and implement use cases for digital, end-to-end supply chains with secure, sovereign and standardized data exchange.²⁰

Step 5 Reduce, reuse, recycle.

While the sustainability agenda raises some challenges, it also offers opportunities. Material “circularity”, will play a decisive role in reducing exposure to volatile global supply chains and material prices. OEMs need to keep raw materials in use for as long as possible and at the highest possible value, as circularity helps absorb supply chain shocks and decreases the dependence on raw materials. More effective end-of-life resource management also minimizes waste and resource consumption. The efficiencies from circularity become increasingly important with the rise of electric vehicles, sales of which are forecast to increase from 9.9m in 2022 to 27.7m by 2030.²¹ EVs will be particularly affected by price increases and volatility of minerals and metals, as these are less accessible in the new world of increased trade barriers. Accordingly, 58% of automotive CEOs plan to increase R&D funding for sustainable innovation to build resilience.²² To help OEMs improve in this area, the World Economic Forum’s 2021 Circular Cars Initiative²³ sets out a guide for the industry, introducing a five-level taxonomy of circularity and four pathways to circularity transformation (see Figure 3).

Figure 3

Material handling across the five levels of circularity in cars²⁴

	1	2	3	4	5	6
Levels of circularity	No circularity	Low circularity	Moderate circularity	High circularity	Full circularity	Net positivity in system
Time	Past	Today	2025	2030	2035	2040
Description	Classic make-use-waste mentality	Silo optimization and sales focus	Product improvement and better coordination	Aligned incentives and life cycle optimization	Full circular value chain in as-a-service models	Ecosystem optimization
Materials handling	Linear value chain	Production scrap looping	Recycled content increased	High quality recycling loops	Full “at level” recycling and transparency	Upcycling of waste

04

Flexibility at the forefront

Economic globalization has enabled automotive OEMs to increase sales by entering new international markets. Anything that could be sold—and especially high-margin products—was sold. That approach ignored the potential pitfalls of a high dependence on single markets. It's an oversight that turns out to have had dramatic consequences. Today, the automotive industry depends heavily on just a few markets. China, in particular, accounts for almost one-third of global sales of new cars. Some European carmakers like Volkswagen (€49bn revenue in China in 2021) earn more than 40% of their total revenues there.²⁵

Strategic decision-making now needs to take into account market dependency, emphasizing the importance of a more globally balanced distribution of sales. This includes reducing dependence on the Chinese market by strengthening sales in other regions. That's Volkswagen's aim, for example. It plans to more than double its share of global sales in the US, from 4% to 10% by 2030.²⁶

More flexibility and agility are required among OEMs to address increasingly unpredictable market conditions and consumer demands in global markets. Our research suggests that OEMs should take the following five steps to achieve both:

6

Facilitate omnichannel sales experiences

7

Get flexible with automated manufacturing cells

8

Build regional digital systems

9

Let local leaders lead their way

10

Decide on greater flexibility and decentralization

Step 6

Facilitate omnichannel sales experiences

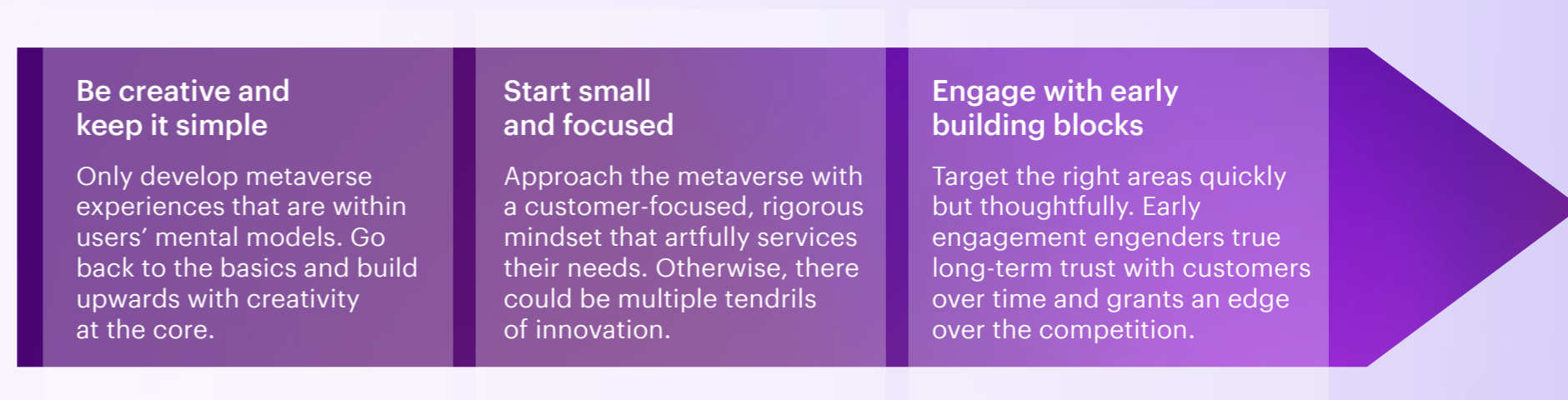
We believe that direct sales models—in both their direct-to-consumer and agency forms—and immersive experiences through storefronts in the metaverse will help to develop new omnichannel sales opportunities and reduce OEMs’ dependence on a limited number of markets.^{27,28} It’s a view that automotive CxOs share. For instance, 87% indicate that the metaverse will play an important role in their businesses’ growth²⁹ and change how they operate from supply and manufacturing to sales. Capabilities such as online purchases, virtual test drives and sales conversations will enable sales departments and dealerships to offer consumers a complete, localized experience wherever and whenever they are. They won’t need to have customer-facing facilities on the ground.

Physical operations like delivery, maintenance and repair will be centralized into larger regional hubs, thus reducing staff, locations and ultimately cost.³⁰ In a first for the industry, Fiat recently opened a metaverse-powered showroom—the FIAT Metaverse Store.³¹ It merges digital with physical (such as real salespeople—so-called Fiat Product Geniuses) to offer customers individualized experiences for exploring, configuring, and even buying cars.

These new immersive possibilities offer a great deal. To benefit from them, OEMs should move ahead but start with simple and focused metaverse strategies (see Figure 4). They also need to move away from a technology landscape of static, standalone parts. In its place they need to build a new cloud-based environment of interoperable and integrated pieces, with modernized and customized applications and platforms to create new immersive experiences and operations.

Figure 4

Key rules to move forward with the metaverse³²





Step 7 Get flexible with automated manufacturing cells .

Rapidly switching production volumes and product mixes according to the respective market needs and at the right level of cost requires much greater flexibility than today. Mass-production in dedicated facilities delivering the maximum standardized output with consistent quality at the lowest cost is no longer feasible. That approach can't cover the individual countries' dynamic sales split, and hence the manufacturing output, between different engine types (gasoline, diesel or alternative fuels, fuel cells, BEVs and hybrids). Indeed, 25% of North American automotive executives say they need to change products manufactured in the same facility six times or more a year.³³ To keep pace with such fluctuations, we recommend that OEMs switch from conventional fixed conveyor belts to manufacturing cells. These can be quickly brought on stream or reprogrammed and repurposed.³⁴ Mercedes, for instance, recently implemented a new production cell system in its body shop that enables flexible combinations.³⁵

Digital manufacturing and operations are key enablers of a smooth transition from traditional production lines

to flexible manufacturing cells, thereby managing costs and minimizing downtime. We believe that automation, in combination with machine learning, enables OEMs to flexibly configure their manufacturing facilities. That means they can shift quickly from one propulsion variant to another in line with changing customer demand. ERP software can streamline the process flow within manufacturing cells and speed up production. Automation also helps to synchronize manufacturing processes with the required resources, achieving higher efficiency and increased output. For instance, automated guided robots can handle logistics by flexibly transferring parts and tools in facilities.

In order not to lose further ground to new automotive players, particularly those from China, traditional OEMs need to adapt their strategies quickly in this space. The Chinese automotive industry doubled new robot installations in 2021, accounting for 52% of globally-installed robots in that year.³⁶ For example, Nio's factory in Anhui is 97.5% automated. It operates with only a dozen workers while manufacturing 20 of its ES8 and ES6 models an hour.³⁷

Step 8 Build regional digital systems

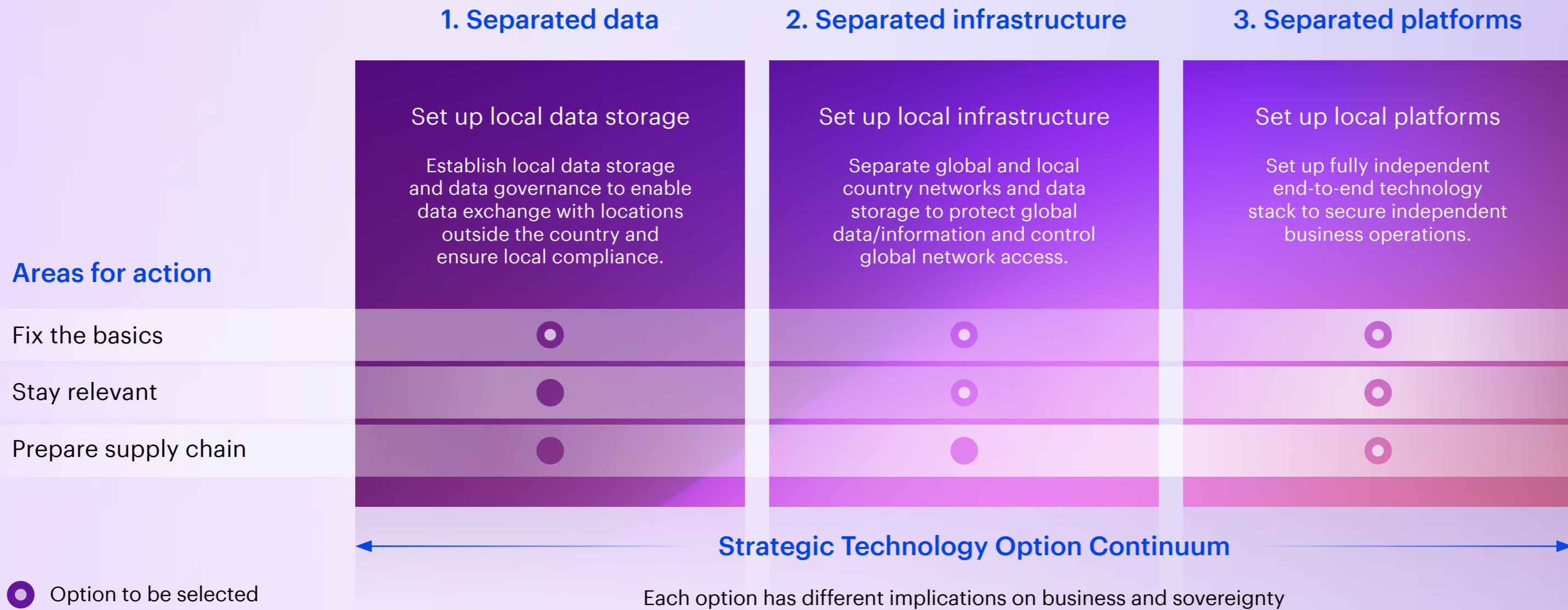
Data and analytics are vital for adapting quickly to economic instability. OEMs need to extract more timely, relevant information from different markets (e.g. gathered from software defined cars³⁸) and turn it into a competitive advantage.³⁹ They need to do this by using cloud, data and AI across the enterprise through an interconnected set of systems.

However, trade barriers to data and restrictions on its import limit the “free” shipping of data and global use of software. The result is regionalized IT, data and analytics. To continue business in various countries with critical restrictions, we suggest three different strategic technology options for automotive OEMs to explore (see Figure 5):

- 1** If the goal is simply to remain in a local market, local data storage and data governance to enable data exchange with locations outside the country and ensure local compliance will suffice. This approach includes separated data storage, where local storage contains restricted data, while unrestricted local data will be stored globally.
- 2** If it is also important for automotive OEMs to safeguard their IP to stay relevant, then it will be necessary to run a local infrastructure alongside local data storage. This includes separate global and local networks and data storage to protect global information and control global network access.
- 3** If the aim is to protect supply chains in challenging times, then automotive OEMs should maintain an independent, complete local technology stack in addition to implementing the preceding two technology options.

Figure 5:

Strategic technology options to continue business in countries with critical restrictions



Step 9

Let local leaders lead *their way*.

To enter and grow new international markets, automotive OEMs have in the past largely relied on sending expats into a territory rather than developing local leaders.⁴⁰ This practice rested on the assumption that the laws and practices of established markets apply equally to developing ones and that successful strategies can be easily transferred.

However, we believe that global strategies require global leadership that goes beyond exporting national structures and processes. Leadership and governance need to become more culturally open, embracing not just a 'Silicon Valley' mentality, but importantly—with China as the largest automotive market—Eastern culture and attitudes, too. Multicultural leadership and governance must feature local leadership teams—the CHRO should support this culture shift⁴¹—and, for example, the adoption of local languages in company instructions and communications.





Step 10 Decide on greater flexibility and decentralization .

Automotive OEMs need to reevaluate the use of return on capital employed (ROCE), the financial ratio that measures a company's profitability and the efficiency with which it employs capital, as a key indicator of business success. In more stable times, ROCE has proven an effective way to control the efficiency of available capital employed to generate profits.

However, as a backward-looking metric, ROCE is unable to compare and predict performance during major industry changes.⁴² For instance, inflation can erode cashflows and thereby affect a company's value. OEMs that persist with ROCE risk relying on misleading information about a company's growth potential in different markets because profit margins appear lower under the new industry pressures, while investments in infrastructure (e.g. new production locations, EV machinery and so on) are vital. Indeed, failing to make those investments risks losing customers, which would be more costly in the long run. This includes

flexible manufacturing using electric vehicle platform models that are capable of addressing dynamic customer preferences. Those new manufacturing models are no longer exclusively based on scale and volume effects, but also consider flexible and localized production located close to centers of demand. In response, we recommend that OEMs similarly decide on more flexibility, and decentralized decision-making. The key to managing the risk of removed centralized approvals is using forward-looking data and analytical approaches to better predict future events, as confirmed by 88% of C-suite executives.⁴³ OEMs need to define their data and machine learning-driven analytical operating models and consider creating a centralized hub to integrate data, govern data management, and build advanced analytical skills and models. Advanced analytical outputs from a centralized team can offer self-service reporting and analytics that can inform decision-making at the edges—i.e. product-specific experts and local leadership teams.

Conclusion: Embrace change or stall

Recent geopolitical and macroeconomic developments may represent much more than a short-term economic dip followed by the restoration of “normal service”. Instead, global value chains remain stretched. Competition between nations and larger regions may supplant the idea of a globalized world with companies competing within it. This new strategic context adds to the already huge challenges of the major transitions

automotive OEMs face as they embrace eMobility and sustainability. To prosper, OEMs face a clear choice: embrace change or stall and fall behind.

The winners will be those who develop the change management capabilities to compress and embrace continuous transformation. Automakers need to implement [Total Enterprise Reinvention](#) by taking an

integrated, holistic approach based on technology with talent building the core. In this way, automotive OEMs will differentiate themselves, increase their competitive advantage and harness continuous opportunities to grow.

Authors



Juergen Reers

Senior Managing Director,
Global Industry Sector
Lead, Automotive



Stefan Hattula

Senior Principal,
Global Automotive
Research Lead



Alexander A. Huber

Managing Director, Head
of Consulting ASG, S&C
Automotive Lead ASG



Johann Wieland

Senior Advisor,
Automotive and
CFO & EV



Dominik Krimpmann

Managing Director, Technology
Strategy & Advisory Lead Austria,
Switzerland, Germany (ASG)



Georg Dehnhardt

Senior Manager,
Technology
Strategy



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