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full potential

Monetizing Digital Services in Automotive

A wake-up call for automakers
to rethink their strategic priorities

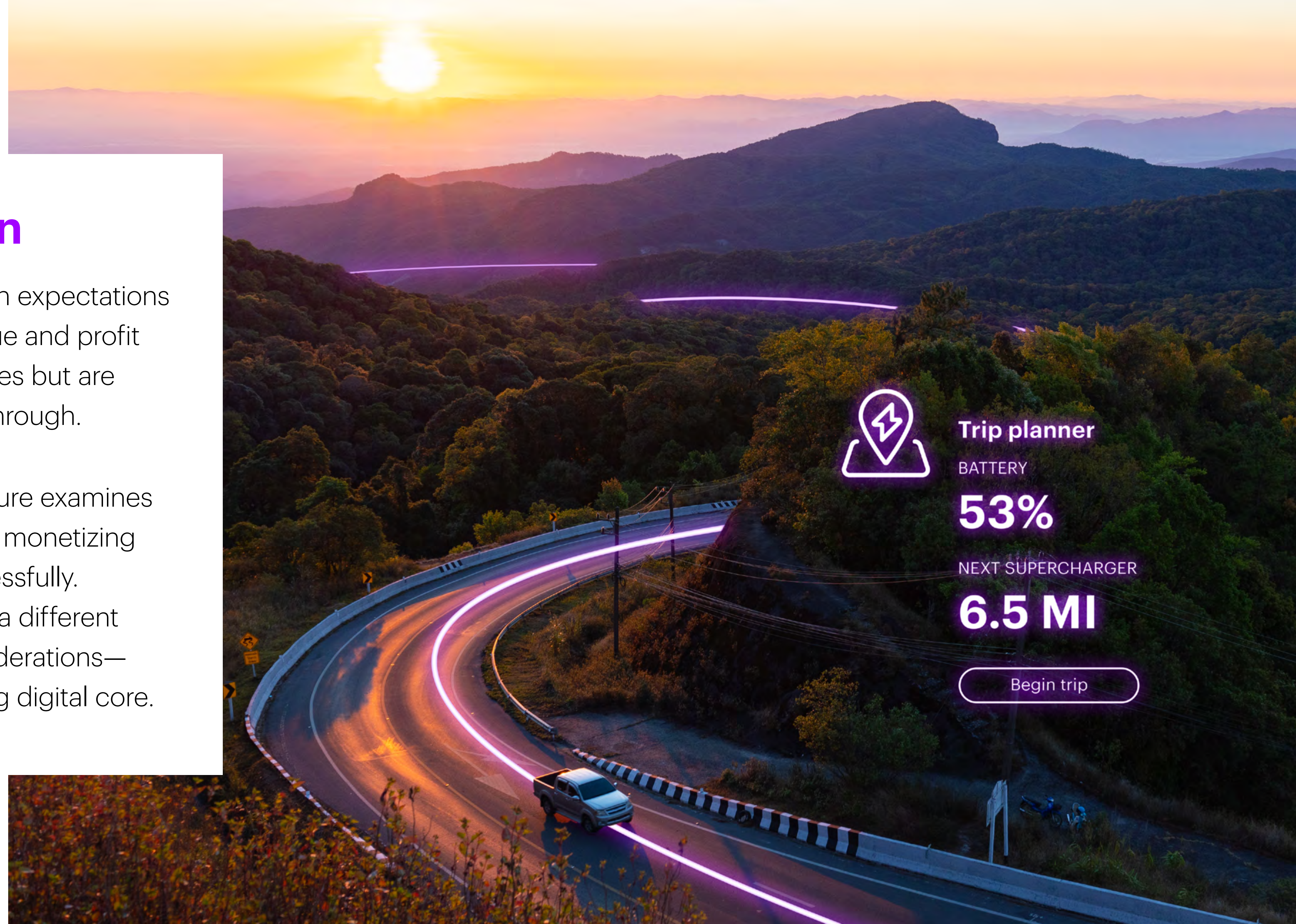
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Introduction

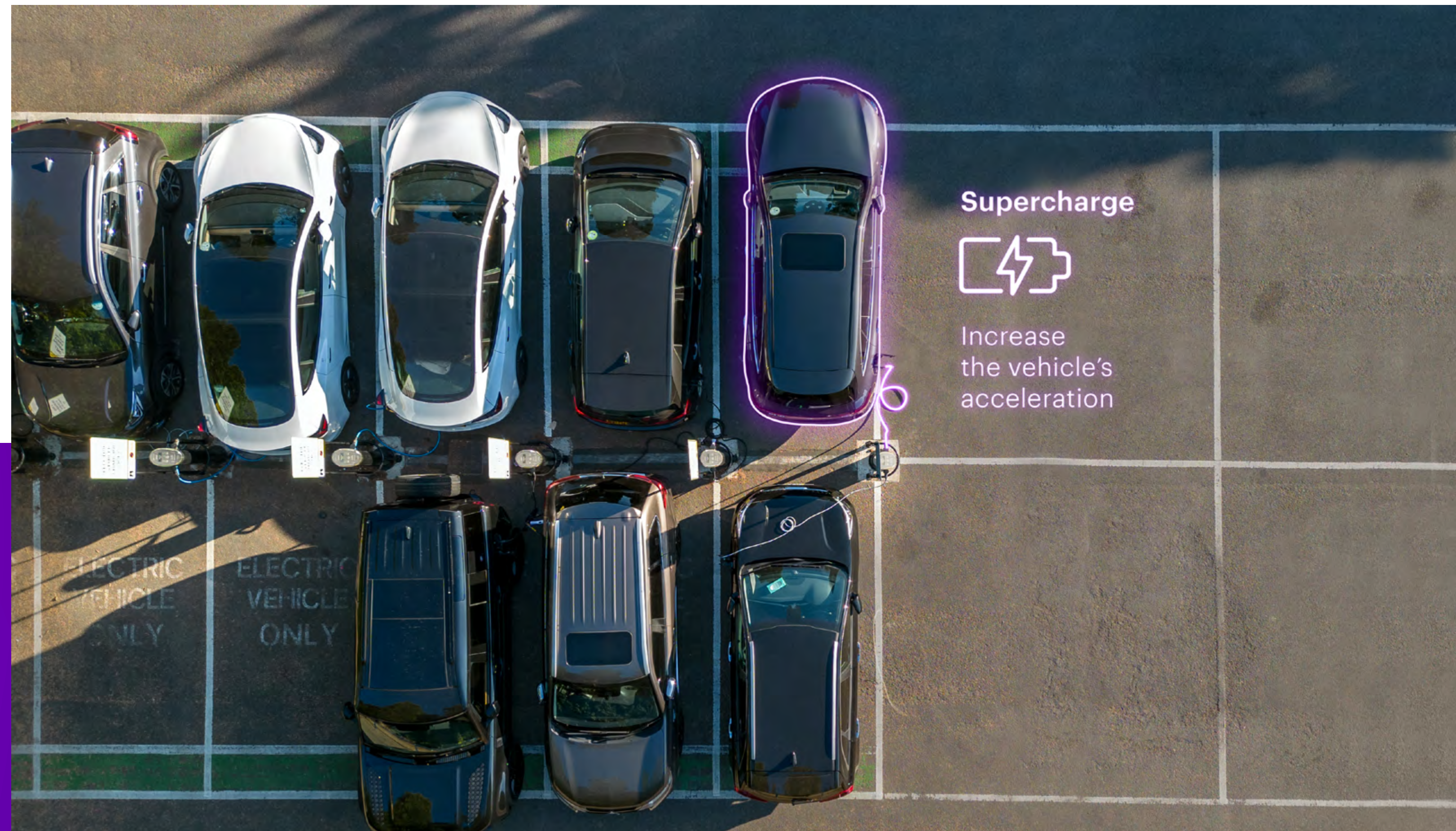
Automakers have high expectations for generating revenue and profit through digital services but are struggling to follow through.

In this report, Accenture examines the different paths to monetizing digital services successfully. Each one represents a different set of strategic considerations—but all rely on a strong digital core.



Chapter
01

Digital services' great potential—and slow start



The transition toward vehicles that are defined by their digital services—including safety, comfort, operational and entertainment features—promises to bring significant new revenue pools to the automotive industry.

Mercedes-Benz, for example, expects to generate US\$1.2 billion in profit from digital services by 2025.¹ US-based automakers Ford and General Motors expect to generate US\$20 billion² and US\$25 billion,³ respectively, in revenue from subscription and software services by 2030, with the hopes of significant profits. Europe-based Stellantis expects similar revenue from digital services—US\$22.5 billion⁴—over the same timeframe. Five in six (83%) of the 305 executives we surveyed for this report told us that they believe that digital services will be the key differentiating factors for competitive advantage in the automotive industry by 2040.

And overall, Accenture research indicates that within the next two decades, digital services could generate as much as US\$3.5 trillion in additional revenue globally, over and above vehicle sales. This would account for 40% of total automotive industry revenue.⁵

It's no surprise, then, that automakers are investing billions of dollars to develop new operating systems, software architectures and connected vehicles that integrate into networks and communicate with the outside world via smartphones and other devices. Korea-based Hyundai, for example, plans to spend more than US\$12 billion through 2030

to develop and deploy software-defined vehicles,⁶ and the Volkswagen Group expects to spend up to US\$32 billion on digitalization by 2025, including artificial intelligence and autonomous driving.⁷

Yet the expected returns aren't materializing as fast as executives need them to. Digital services today generate only about 3% of automaker revenues globally, on average—not nearly enough to cover the significant investments in software.⁸ General Motors, for example, earned roughly US\$2 billion from digital services in 2021, accounting for just 1.5% of its US\$127 billion in revenues.⁹

And Stellantis' digital business accounted for only 0.3% of its total 2021 revenues of US\$150 billion, mostly from selling navigation and live-traffic data.¹⁰

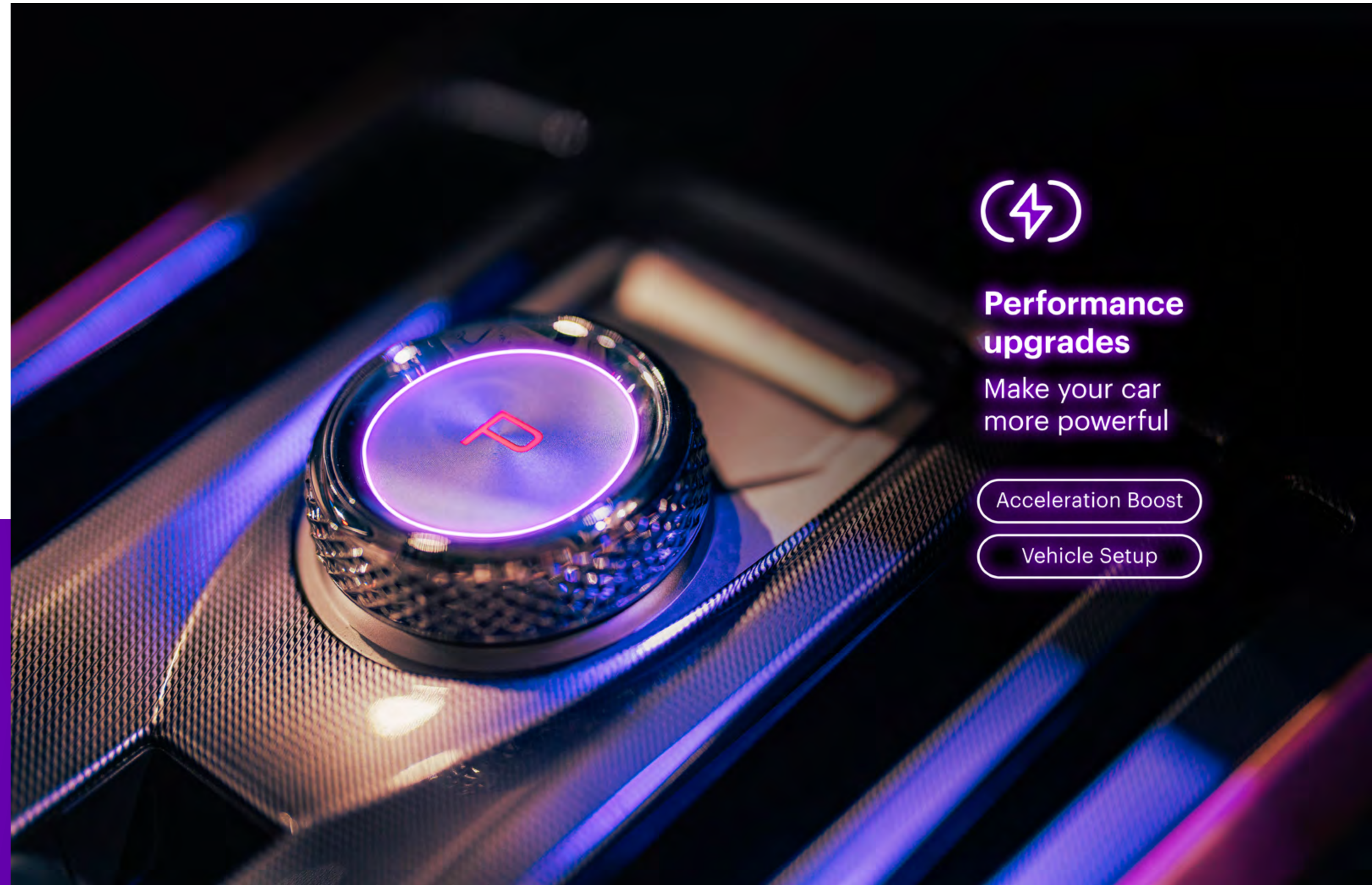
Even new players are finding it difficult to generate revenues with digital services. Chinese car start-up Nio, for instance, reported that "other sales," which include vehicle connectivity services, accounted for only US\$206,000—or 3.6%—of its 2021 revenues.¹¹

Why is this happening? The challenge is twofold.



Chapter
02

Dual (related) challenges



First, despite significant efforts to undertake digital transformations in parts of their organizations, most automakers are not yet truly tech-savvy.

Digital services will continue to evolve rapidly as technology advances, with implications for a fast-evolving array of offerings. Consumer behaviors will also continue to evolve. In a world only recently emerging from a pandemic, with prolonged, heightened economic and geopolitical pressures bearing down, consumers are increasingly shifting their priorities, depending on their immediate context. As a result, their purchasing decisions can seem [paradoxical](#)—making it more difficult for all businesses to know what to focus on and market at any given time.¹² To keep up, companies will need a **strong digital core** that gathers and provides relevant information, offering accurate insights into rapidly evolving customer preferences.

In fact, we believe that the winners will be those that develop and leverage the digital core to its full potential—to the point where it enables constant renewal. Achieving such a “permanent” dynamic state will enable these companies to be in a position to achieve breakthrough innovation (on digital services and more), demonstrate resilience under pressure, and create value for all stakeholders, continuously.¹³ Pursuing this ultimate goal is a foundational strategic call; those that do so successfully will define the new frontiers of performance for the industry. (See our thought leadership on [Total Enterprise Reinvention](#) to learn more.)

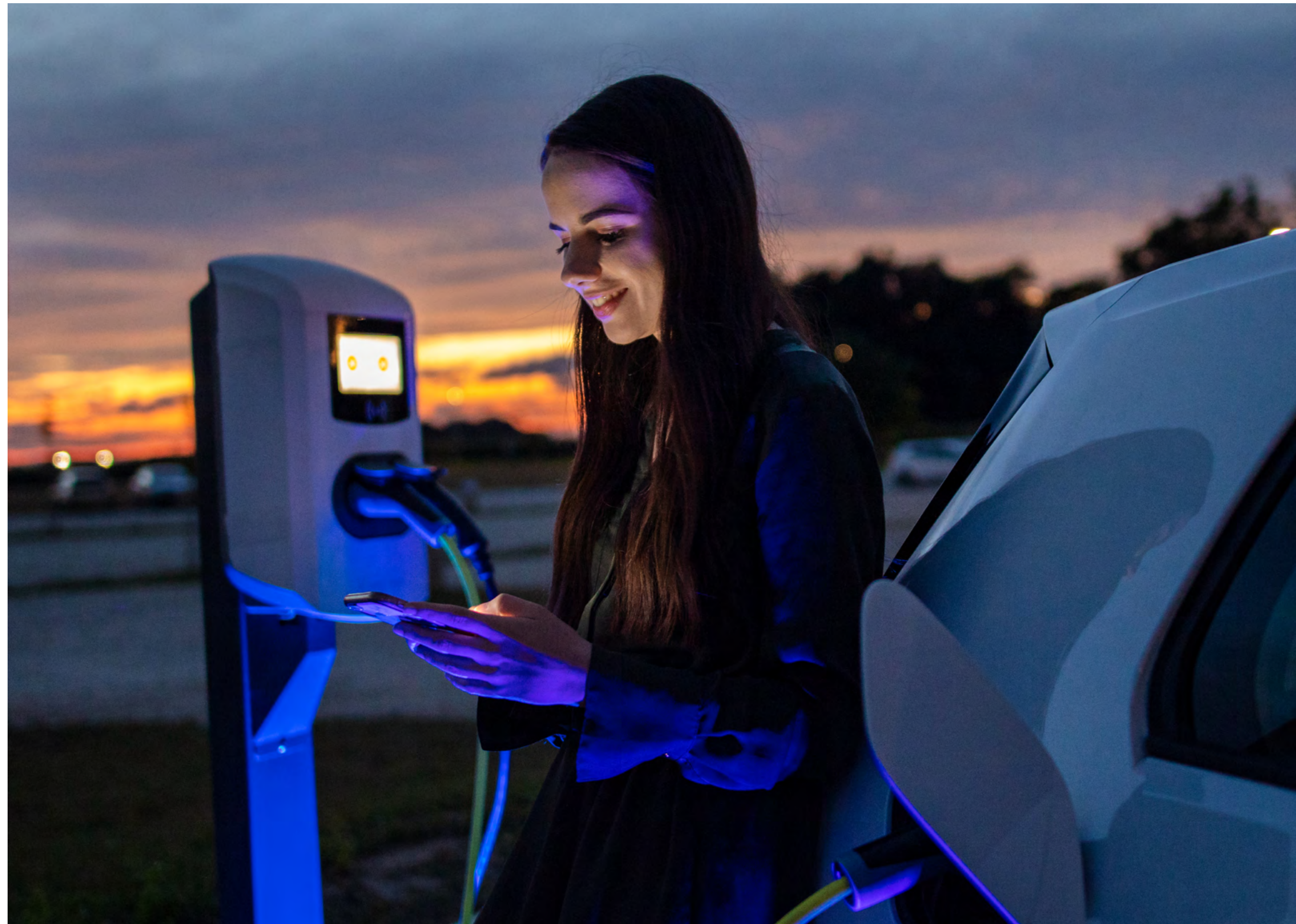


Second, our research indicates that most automotive executives lack a clear plan for **monetizing digital services**. This has more to do with the “whys and hows” of monetizing digital services. It’s about whether to build or buy services, and about pricing. Should those services be marketed through subscriptions, in bundles, or perhaps individually?

It’s also about answering questions such as: Which services will resonate with existing customers and with those the automaker wants to attract? Which sets of services will best meet customer needs at any given time, and overall? Which align best with the brand?

“My honest opinion is that there is no good [monetization] idea here yet.”

(Chief engineer and group lead for a major Asian automaker)



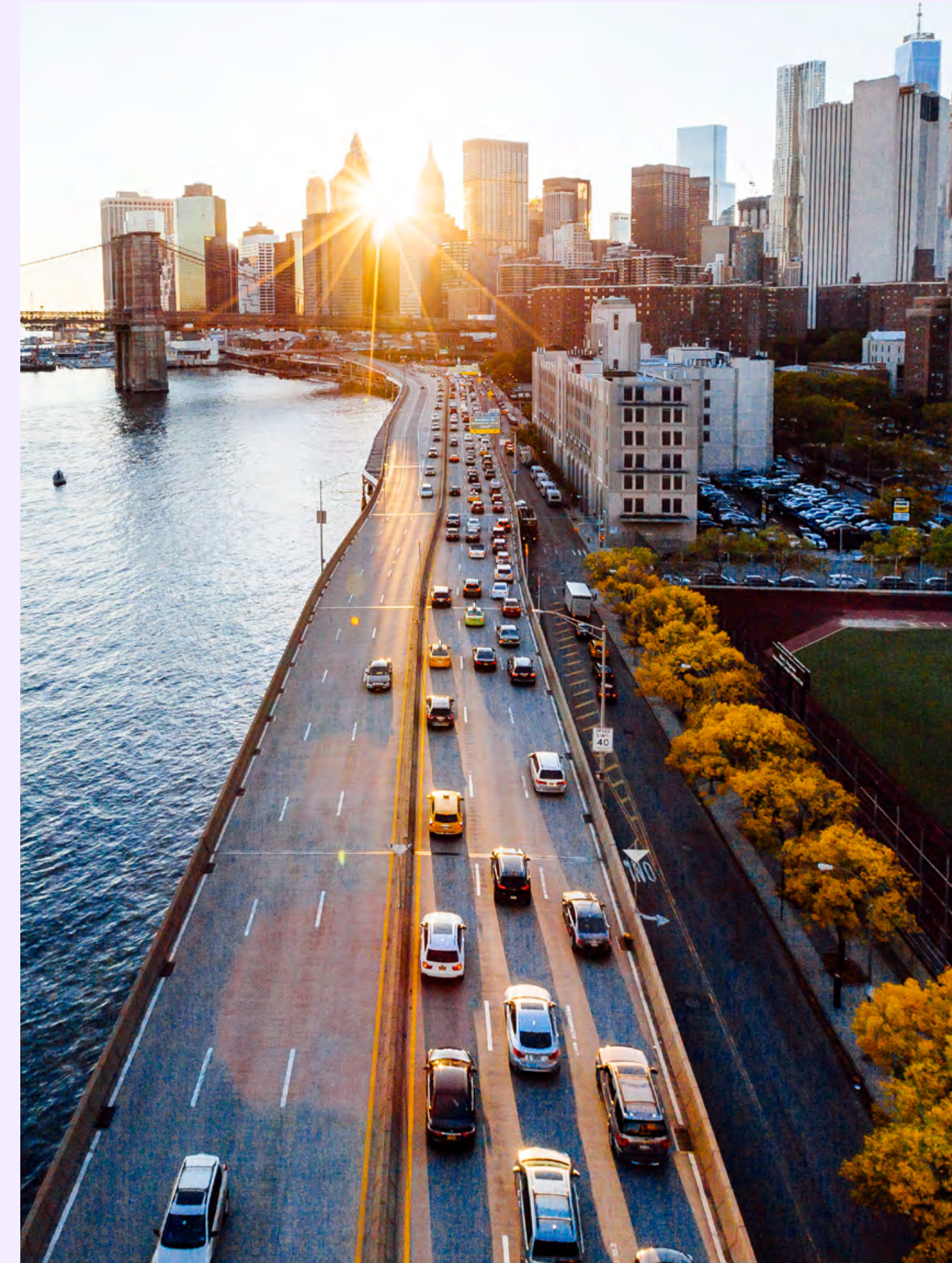
What are digital services?

In this report we use the term “digital services” to refer to a wide variety of services around a vehicle that are built on connected vehicle data and integrated seamlessly into an ecosystem of infrastructure providers (e.g., parking), service providers (e.g., gas stations, coffee shops), technology providers (e.g., smartphone companies), smart cities and more. These can be divided into three broad categories:

01 Connected services—such as entertainment and tolling services, where value is created by allowing devices and systems within a vehicle to connect with one another (e.g., smartphone, another vehicle).

02 Data services—such as predictive maintenance and data-powered insurance, where value is created through the processing and use of vehicle data.

03 Vehicle-based services—such as autonomous driving and digital keys, where value is created through interactions with the vehicle itself.



Chapter
03

The digital core



Enabling agility

Accenture research shows that nearly nine in 10 companies—86%—are what we call “Transformers.”¹⁴ Instead of viewing transformation as a continuous process that affects their entire business, they transform only select parts of their business and do so mostly through a linear series of finite programs.

Traditional automakers are no exception: Despite significant investments in advanced technologies, they continue to operate in more traditional ways. Their processes include annual forecasts, budgets in combination with clear deliverables, and a focus on being best-in-class in key performance indicators (KPIs) like component gap size. Most have retained their mindset of holding production on a new vehicle until the design and testing of every aspect of the car—including digital services—is completed and perfected.

That approach is no longer effective; today’s customers expect regular and shorter updates/upgrades of digital experiences. Moreover, many automakers still retain internal silos—with engineering, design, sales, marketing, finance and other departments operating somewhat independently. They often don’t work toward the same goals or share consumer information, making them unable to pool consumer data and create value from connecting all the information, let alone doing so in real-time.

“The readiness of the OEMs right now to see the business model, to understand the business model, to build it, to make it happen, is quite low because they are just not used to it. They have never seen anything like this before.”

(Head of infotainment development at a major European OEM)



To create value through digital experiences, most automakers will need both cultural and process changes. This begins with a strong digital core.

A strong digital core enables companies to extract more timely, relevant information from consumers and turn that information into competitive advantage.¹⁵ It does so by using cloud, data and artificial intelligence (AI) across the enterprise through an interconnected set of systems.

With systems that work together, data that was formerly “trapped” in one or another part of the organization is now available, at scale. Domain-specific, AI-enabled applications and platforms can then generate insights on evolving and contextual consumer needs. (For more detail, see Accenture’s [Total Enterprise Reinvention](#) report).

For instance, Porsche’s car configurator uses machine-learning specific models trained for markets and other unique criteria to provide consumers with tailored car configurations.¹⁶

To support the core, automakers will need to establish corporate data lakes to ingest and analyze data from every system that generates information, such as the vehicle itself, as well as sales accounts, finance and marketing, among other areas. This shouldn’t be limited to sources just within the organization, but also include initiatives in industry-wide organizational setups where automakers connect with partners, suppliers and other third parties. One example is for automakers to engage is Catena X, which is designed to link global players in the automotive industry through an open data ecosystem.¹⁷

Currently, automotive executives don’t have a lot of confidence in their ability to develop the right capabilities to turn data into value for third-party firms willing to pay for such data. One way to overcome this challenge—preferred by nearly two in three executives (64%) we surveyed—is for automakers to share consumer data (on driving profiles, etc.) with partnering firms in a powerful ecosystem in exchange for another service like analytics or data hosting.

Another key consideration is governance. Establishing proficient data governance policies is critical to ensuring the proper access to and handling of all data gathered—from in-vehicle data to resources for third-party providers within the ecosystem of software-defined mobility.

Automakers do not need to do this by themselves, however, as many governments at various levels have established data-protection regulations. Examples include initiatives such as the EU's Global Data Protection Regulation, commonly known as GDPR, which defines who can access and use data and under which conditions.

Automakers will also need to create an agile, flexible culture, with supporting processes that explicitly foster collaboration between all divisions, integrates the business model with the technology roadmap and the customer experience, and shortens decision and development cycles. (See sidebar on next page.)

Developing and testing features and other services related to vehicle driving and safety cannot and should never be rushed; shortening decision and development cycles must never come at the expense of safety.



Culture and collaborative processes → Innovation and speed

To enable the kind of collaboration that can propel an automaker to a leadership position in the industry, team members from the C-suite to the frontline staff will need to develop new capabilities in software, design and innovation. One approach will be through upskilling existing talent; another will be through hiring new talent typically more attracted to big tech firms and start-ups. Creative partnerships will also play a role. For example, under the label “42 Wolfsburg,” Volkswagen partners with tech giants like Microsoft and Google to educate the next generation of computer programmers in tuition-free software engineering school.¹⁸ In a three-year highly project-based peer-to-peer learning program, students—including those without any previous degree—learn competencies around artificial intelligence, data security and visual programming, among many others. In all cases, the talent then needs to be given work that they find meaningful. Automation of routine tasks can help to free up value-creating teams for more complex, human-centered work.¹⁹

One under-tapped resource in these efforts: the chief human resources officer (CHRO). With a view across the entire enterprise and the inner track on talent, CHROs are uniquely positioned to assess “what is” versus “what might and can be.” This includes siloes that need to be broken down and areas where cross-functional roles can spark new innovative connections. Automotive start-ups are making use of scrum-teams working self-managed and in cross-functional roles not only in IT domains, but across product engineering. Accenture’s 2023 report on activating the combined power of data, tech and people to fuel boundaryless collaboration offers more insights.²⁰



But for features where experience is evaluated in terms of less-critical dimensions such as entertainment or convenience, speed is important. In these instances, consumers might be willing to accept a “good enough” initial quality of services, especially if the service can be easily and quickly updated or fixed through over-the-air updates. Taking that approach can also provide the automaker with the benefit of being the first to market with a novel service that consumers enjoy.

An example is the Chinese automakers—including Nio, Xpeng, and BYD²¹—that added karaoke capabilities to their in-vehicle infotainment systems. Consumers enjoyed the service even though the interface, initially, wasn't very good. With over-the-air updates, the automakers were able to improve the interface and the overall user experience.

Finally, to ensure that consumers have a seamless experience using digital services, automakers will need to develop a new set of strategic partnerships. Specifically, they will need to bring together their data pools with those of external players like insurers, mobility providers, infrastructure providers (e.g., parking, tolling), fueling stations, and many others.

Of course, as digital services and their integration into public ecosystems become more popular, consumers will need convenient ways to pay for these services. One option is what's known as in-car-payment, or in-car-commerce, in which drivers and passengers can use the car's infotainment screen to make purchases at fuel stations, drive-ins, or coffee shops.²² While this is a new business in its early stages, the global market is expected to more than triple by 2030, to more than US\$12 billion.²³ That's why automakers should

start experimenting with in-car payment services now, either on their own or in collaboration with major payment providers such as Visa, Mastercard and others.

To succeed in the in-car payment market, automakers will need to build a comprehensive ecosystem of places where consumers can securely and seamlessly pay in one click on the car screen. Such a system would likely require not only advanced technologies, such as cloud, to integrate seamlessly with the vehicle's infotainment system, but also a value proposition that provides a win-win situation for all ecosystem partners. One first mover in this area is Mercedes-Benz, which launched its “Fuel & Pay Service” in 2021. The service enables drivers to use their in-car screens and Mercedes' propriety “Mercedes pay” ePayment platform to pay for gas and other products at 900 fueling stations throughout Germany.²⁴

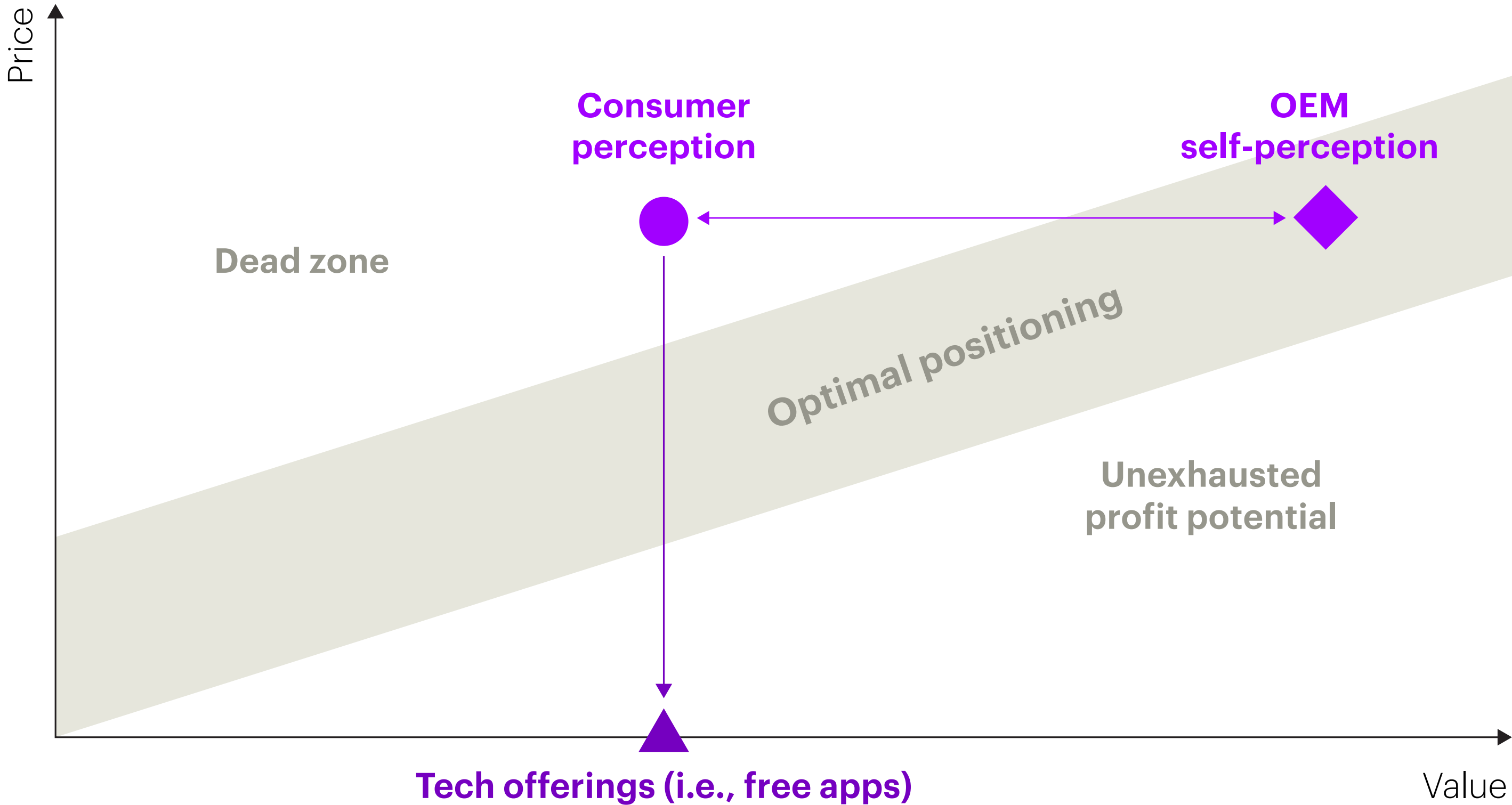
Leveraging data to develop compelling and relevant services

Our research identified a significant disconnect between what automakers think consumers are willing to pay for a service and what consumers believe the service is worth. (Figure 1 illustrates this concept.)

This gap can be attributed partly to automakers' inability (or lack of commitment) to extract valuable insights from consumer (i.e., driver) data.

Basic map services are a good example. Some automakers today charge an annual fee for map updates and also offer subscription options for heated seats and heated steering wheels, among other features. But the current renewal rates for these types of subscriptions is less than 10%,²⁵ indicating that consumers don't value these services as much as automakers expected.

Figure 1.
Price-value-perceptions for digital services in automotive



This is particularly true when these services—such as navigation—are available for free from other players (like Apple and Google).

The issue is particularly severe among high-volume automakers, which struggle more than premium businesses when it comes to monetizing digital services because their consumers are more price-sensitive.

With better data, automakers could learn more about consumers' driving habits and preferences, enabling them to build services targeted more closely to consumers' life-centric desires. Such data might include everything from driving profiles to payment preferences to services used; the key is gathering it with intent and developing a way to analyze it, share it, and access it with ease across the organization.

Consumers can be great allies in this effort, as many don't have a problem sharing their data with others. Users of smartphones and other mobile devices, for example, provide tech companies with extensive amounts of personal data: phone numbers, location, even bank and credit-card account information. So too do drivers when leasing a vehicle or using mobility offerings.

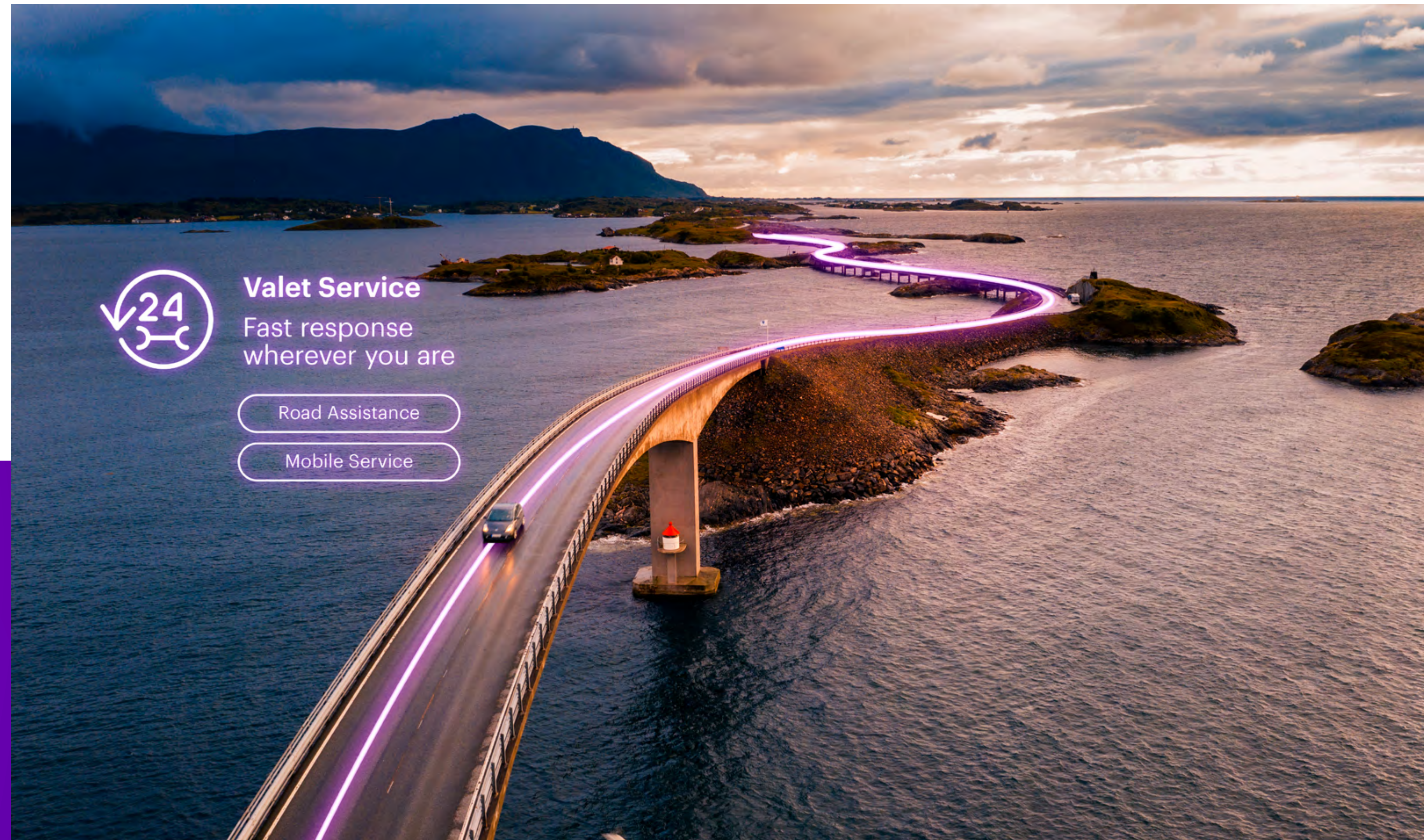
However, automakers increasingly understand that consumer data does not come for free; consumers expect something in return. That's why some automakers have started incentivizing their consumers to share their data. For instance, Jaguar Land Rover partners with the IOTA foundation to offer its drivers the ability to earn cryptocurrency when enabling data reporting such as traffic congestions and offering their car in Jaguar's ride-sharing program.²⁶

Importantly, consumers expect a more personalized experience in exchange for sharing data. Yet automotive consumers feel that they received little value in return for sharing their data in the past or, even worse, were inconvenienced, for example by having their music streaming interrupted or their mobility preferences go unrecognized.



Chapter 04

Monetizing digital services: **Value**



Valet Service

Fast response
wherever you are

Road Assistance

Mobile Service

Value comes in different forms for consumers. The concept is wrapped up in the promise of the brand, and it turns on the strength of the connection the company establishes with its customers and a host of other attributes. These include the types of features offered, the choice of feature packages and the price.

For example, take vehicle-based features—offerings that have high potential to create new value but require the car to do so.

Automakers know how to engineer and build vehicles, so consumers are more likely to trust them when they offer proprietary services that relate to the vehicle and interact with the hardware—such as performance upgrades or autonomous driving functions—rather than services such as music streaming or gaming platforms, which are not necessarily automakers' strength. For instance, Mercedes announced plans to offer its EQ electric

vehicle owners the opportunity to increase the vehicle's acceleration via the Mercedes me connect store for an annual fee of US\$1,200.²⁷ Similarly, Polestar 2 drivers can unlock an additional 68 horsepower with an over-the-air performance upgrade for a one-time fee of US\$1,195.²⁸

New hardware technology will lead the way into a future of differentiating services. As an example, thanks to E-ink technology, BMW's new "i Vision Dee" concept car will enable owners to change the color of the car's exterior whenever and however

they prefer. It could also turn the exterior into a marketing space, showing different advertisements depending on the car's location, thereby bringing new revenues to the carmaker as well as the driver.²⁹ Value could also be created by turning the car's cameras into security cameras with remote access. Tesla has already launched this capability; its Sentry Mode monitors the surroundings of a car and records suspicious activities, addressing consumers' security needs.³⁰

It's also important to consider the value of a bundle of services, versus the value of each service individually. Think of most smartphones, which integrate apps for web browsing, email, fitness, navigation and many other functions. While in isolation none of these might be best-in-class, bundled as a portfolio they provide superior value to many consumers.

Value also comes with frequency of use—i.e., the more often people use a service, the more they value it. One challenge here is that drivers only spend about 50 minutes a day in their car, on average.³¹ So one solution to increase adoption of the services is by integrating digital services from the car into other parts of consumers' lives and vice versa—thereby creating additional value in consumers' minds.

The area of energy management offers one such potential opportunity. By teaming in a convergence play with utilities and energy service providers, automakers could help develop a capability that would enable vehicle owners to transfer energy from the car battery to the house during times of peak energy demand when the car isn't in use. At night, and during other times of low energy use in the home—when energy costs are lowest—energy could be transferred back to the vehicle's battery.

At the same time, bringing the external world into the car can similarly create value for which consumers are willing to pay. For instance, Geely's Lynk & Co. brand recently introduced into its vehicles a new meeting app that enables drivers to join Microsoft Teams calls in the car with one

click on the infotainment screen, eliminating the need to use a smartphone or a car-play solution for conference calls.³²

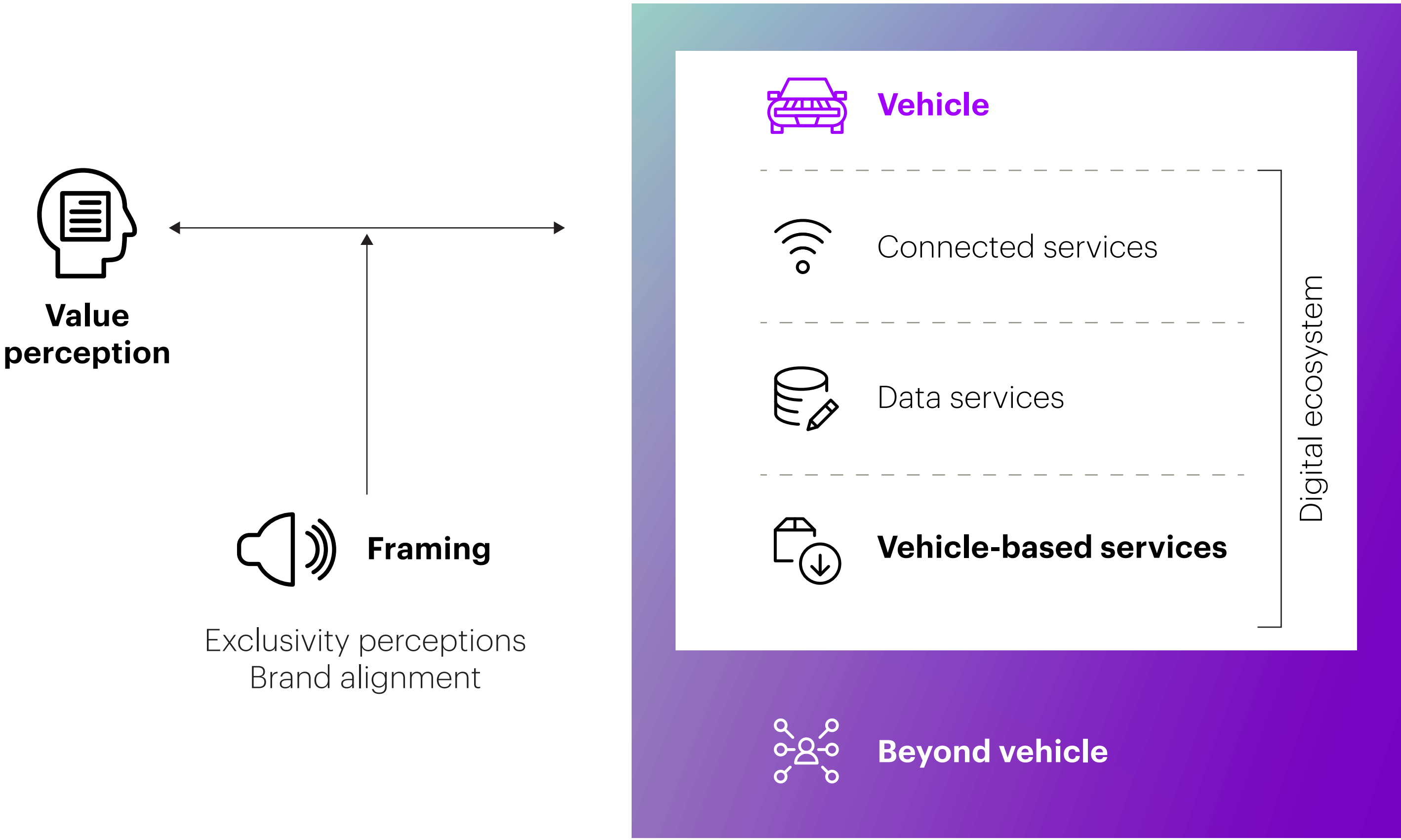
In both cases, the value comes from easy transfer of in-car experiences to outside the car and vice versa, merging different areas of consumers' lives and their associated needs and wants. In fact, most auto executives we surveyed—82%—said that offering digital services that go beyond the pure car experience will enable them to generate additional revenues.

Another consideration is exclusivity and brand alignment. Marketing tactics such as offering limited editions and/or waiting lists for certain models or features are proven instruments that can be effectively applied in the realm of digital services.

Exclusivity plays a larger role in premium and luxury segments, where consumers are willing to pay extra for the opportunity to express individuality and belonging to an elite community. Meanwhile, a sense of community—already well established by some automakers—has become more relevant in the wake of the COVID-19 pandemic,³³ especially in Eastern cultures. For example, Chinese car start-up Nio already builds a business model around this community need. The company offers people the option to connect through an app and then meet in NIO Spaces and NIO houses, destinations where some even have wanted to get married.³⁴

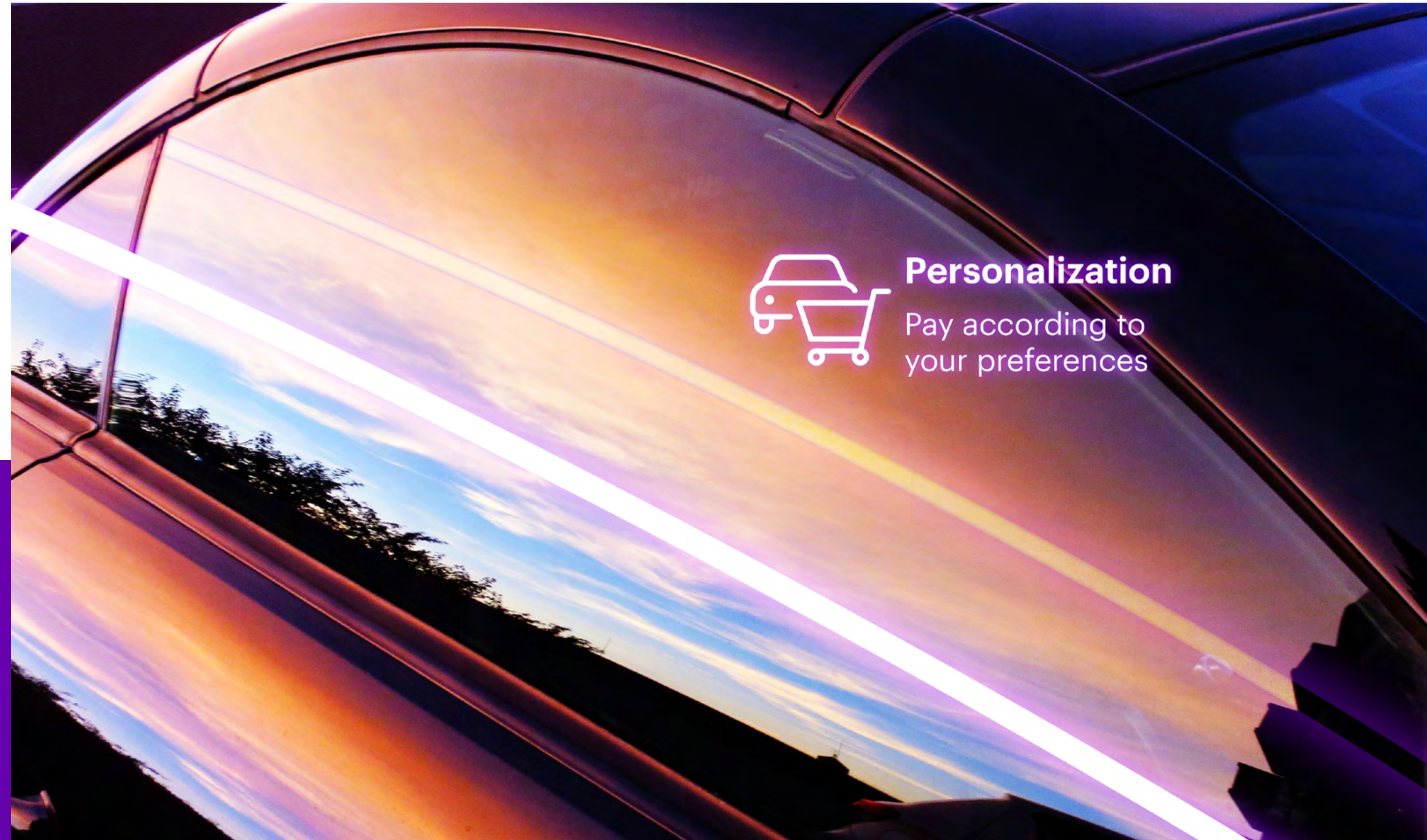
Figure 2 provides an overview of the ways in which an automaker can create value through digital services.

Figure 2.
Instruments to increase perceived value of digital services



Chapter 05

Monetizing digital services: **Methods**



Personalization

Pay according to
your preferences

To learn how automakers are thinking about making money through digital services, we asked our survey participants to follow a decision tree (shown in Figure 3 on page 27). Our goal was to explore the major emerging models, with a focus on assessing the risks and rewards of each.

For example, knowing that consumers already pay a significant price for a vehicle and are often hesitant to pay for additional services, we sought to understand and analyze the rationale for various approaches to pricing.

We also sought to assess automakers' views on the ways in which they could generate revenue beyond consumer sales, such as cross-subsidization, selling driving data, and charging developers a commission fee (see sidebar on page 26).

From the survey responses, five major criteria seem to have guided automakers' choices along the decision tree. These criteria can provide direction for automakers that are in the process of defining their own monetization approach:



01 Consumer price sensitivity: How price-sensitive are the relevant consumer segments? Our research has indicated that when consumers are likely to base their purchase decision primarily on price, charging additional fees for digital services, over and above the price of the vehicle, is risky, as consumers may favor a competitor that can offer at least some standard features for free or charge only a nominal price.

02 Control over the end-to-end (E2E) experience: Today's car experiences are no longer limited to the vehicle but can extend to include interfaces to external infrastructure and ecosystems.³⁵ To create individual experiences for target consumer segments, automakers may need to own the relevant control points. For instance, owning the user interface is crucial to manage the user experience around digital services.

03 Competitive intensity: Consumers will determine whether a digital service is attractive based on other available options. In highly competitive markets, many players vie for the same consumer segments, often resulting in price wars that can quickly limit automakers' options for charging extra fees for digital services.

04 Size of user base: Companies with large customer bases are better able to negotiate preferential deals with third parties, as they provide greater profit potential. Having a greater number of customers also increases the opportunity to upsell, drawing consumers from free services they have access to initially, to pay for other features.

05 Attractiveness of hardware: Negotiation power increases when automakers offer third-party firms an attractive environment for their digital services. Following a key rationale of quality perceptions, consumers rate the quality of services through interaction with the physical aspects of its delivery. For example, the quality of a music streaming experience in an automobile is greatly affected by the quality of the vehicle's speakers. Automakers that can offer an attractive hardware environment—including dimensions such as look and feel—will be better positioned to negotiate higher fees with the external providers of digital services.

Ultimately, we formulated four major models—pure revenue sharing; full indirect charge; full direct charge; and a hybrid approach.

Third-party monetization options

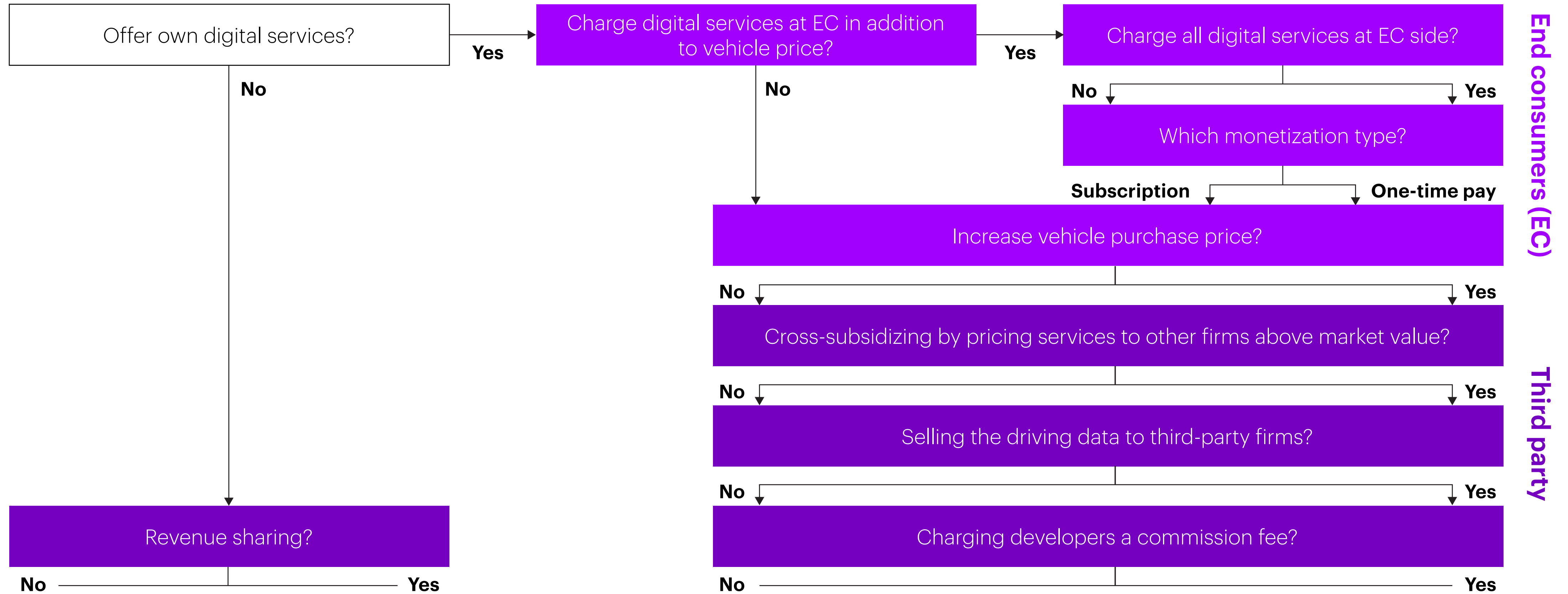
Cross-subsidization: When a company offers some services below cost (or even for free) to one group of customers, it could cover those costs through higher profits from other customers.³⁶ This strategy could work well with automakers that have a high share of B2B customers—such as car-rental companies and company car fleets—that purchase high volumes of vehicles and might be less price-sensitive than individual car buyers.

Selling driving data: Connected vehicles can provide automakers with access to a variety of information that other companies and groups might find valuable—such as driver profiles, telematics data, car conditions and more. For instance, insurers would likely be interested in leveraging shared data to offer usage-based insurance that provides flexible and personalized pricing options based on the driver's safety and overall driving record. However, the raw data itself is mostly not of high value, as many of the third-party organizations might not have the technical and analytical capacities to analyze the data on their own. Therefore, they'll look to the automakers to process the data in a way that provides the insights specifically targeted to their needs.

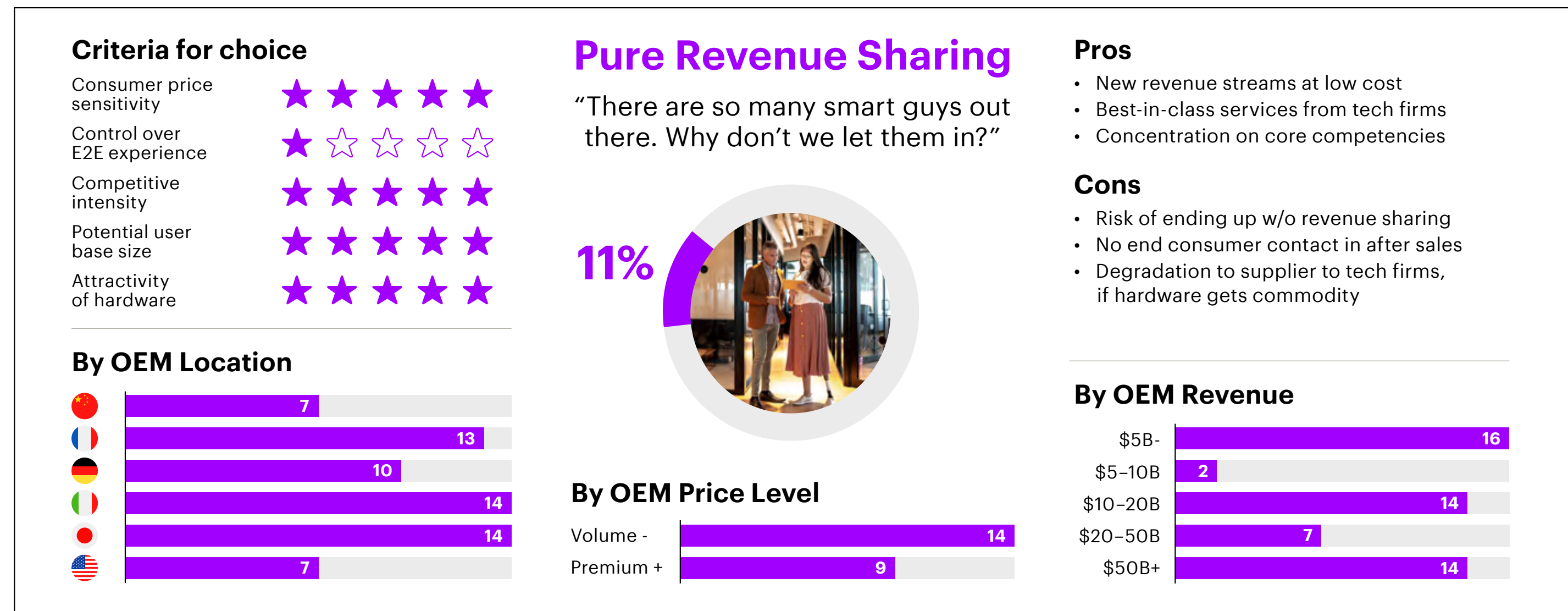
Charging developers a commission fee: The smartphone industry has taught us that who owns the platform can charge developers high commission fees to offer their digital applications and services. More than three-quarters (77%) of the executives surveyed expect a similar consolidation of platforms. In fact, Renault, Volvo and Polestar use Android Automotive OS, Google's operating system that has been optimized for use in automotive infotainment systems.³⁷ Rather than competing with the external tech players, these automakers are teaming with them to leverage their operating systems.

Figure 3.

The decision tree: Questions we used to formulate monetization models for digital services



Model #1: Pure revenue sharing



One in nine (11%) of the automotive executives surveyed believe that their company would likely adopt a “pure revenue sharing” monetization model. These automakers typically have limited resources to develop the necessary capabilities to offer their own digital services, but they do have an attractive consumer base that can provide them with significant negotiating power in collaboration with an external platform provider. This negotiating power

should help them avoid ending up as simply a hardware supplier to tech companies, which would preclude them from sharing in the future revenue pools from digital services. The automakers most likely to choose this monetization model are those with high volumes in the entry-level price segments, where consumers are highly price-sensitive and attracted by standard digital services.

Key

Criteria for Choice: The number of stars represents the recommended level of characteristics that an OEM should have to be successful with the respective monetization model. It ranges from 1 (low) to 5 (high).

By OEM Location: Percentage of automakers from the respective location that favored this model over others

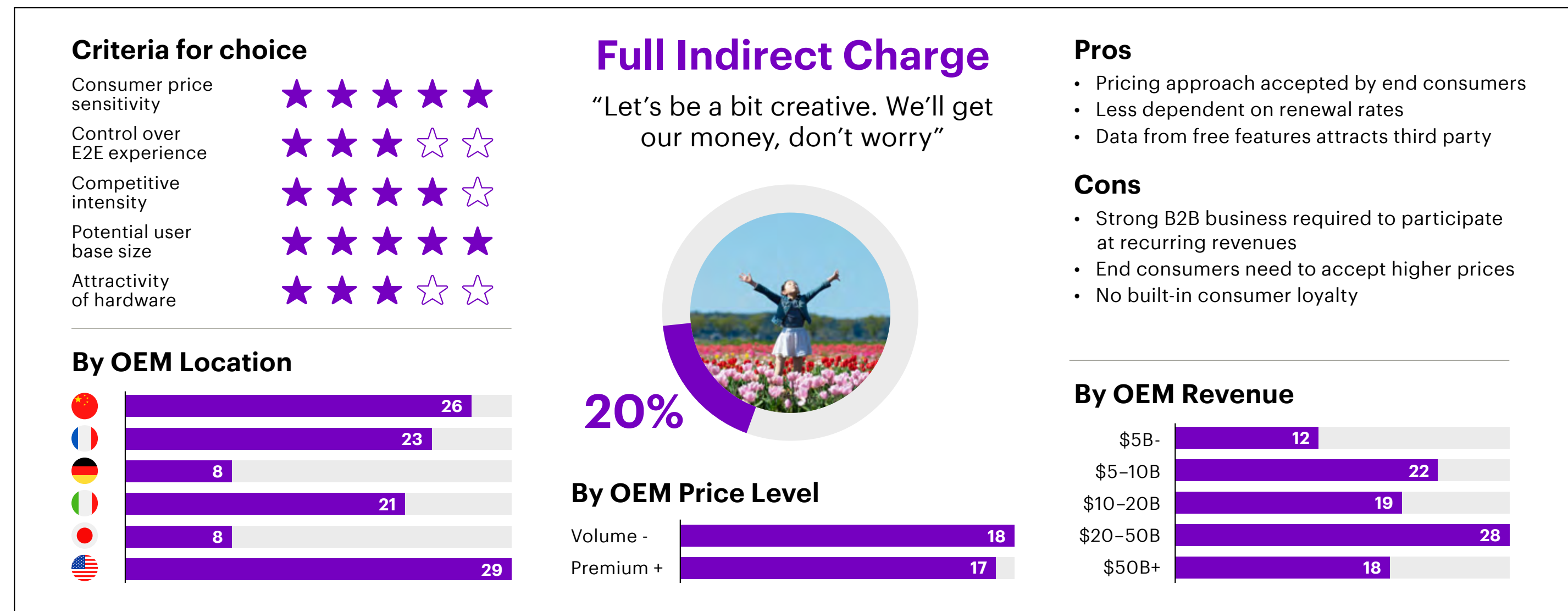
By OEM Price Level: Percentage of automakers in the volume (and below) versus premium (and above) price level favoring this model

Pros: Primary benefits to this approach

Cons: Primary risks or downsides to this approach

By OEM Revenue: Percentage of automakers in the respective revenue category favoring this model

Model #2: Full indirect charge



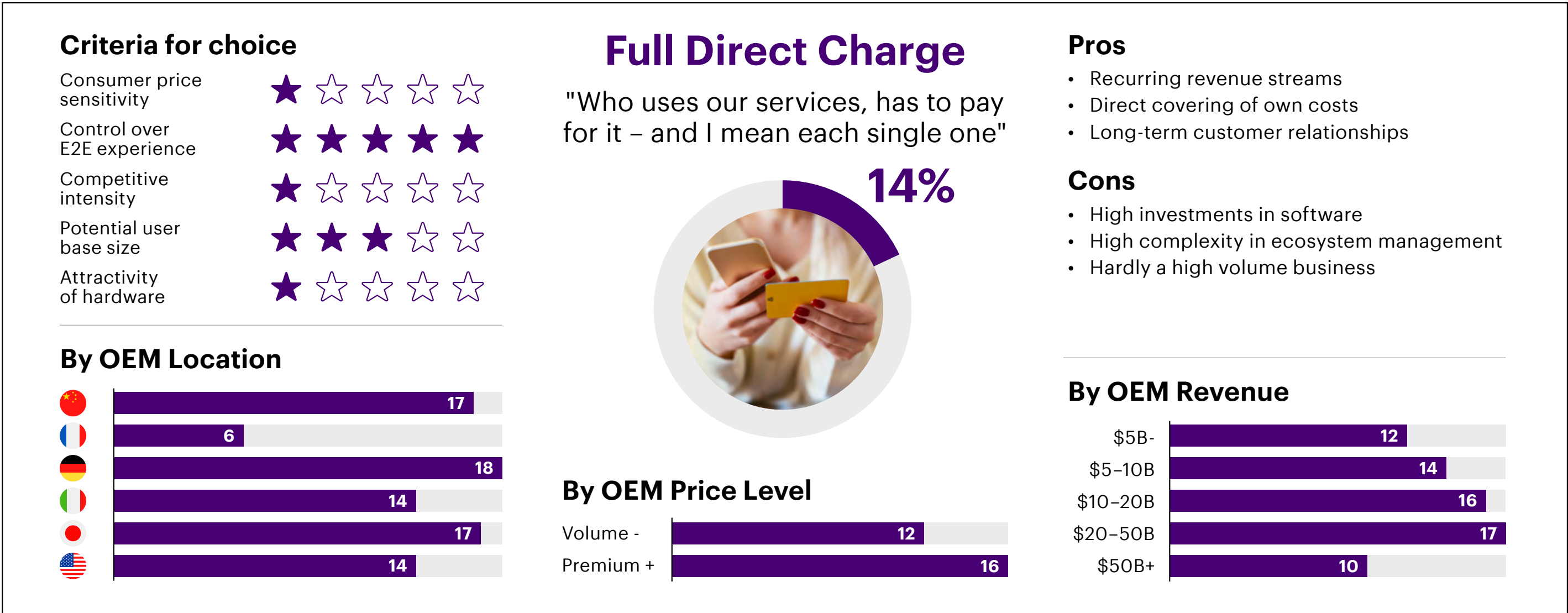
Two in 10 surveyed executives (20%) said that they would likely end up adopting a “full indirect charge” monetization model, in which they offer and bundle the cost of the digital services as part of the vehicle purchase price. To cover the costs that they don’t recoup directly from consumers and to generate recurring revenues, they plan to use several options: increase the vehicle purchase price; cross-subsidize through

higher costs from select B2B customers; sell the driving-profile data to third parties; and charge developers a commission fee.

Automakers most likely to adopt this approach are those whose consumers expect digital services to be included in the sales price of the vehicle and don’t want to have to pay extra (“I pay for what I get”)—i.e., for whom

price-value considerations are a top priority. Overall, this model would likely appeal to volume legacy automakers—i.e., long-established car companies that sell high volumes of vehicles to the mass market, where the hardware is easily commoditized and not highly differentiated from competitors.

Model #3: Full direct charge



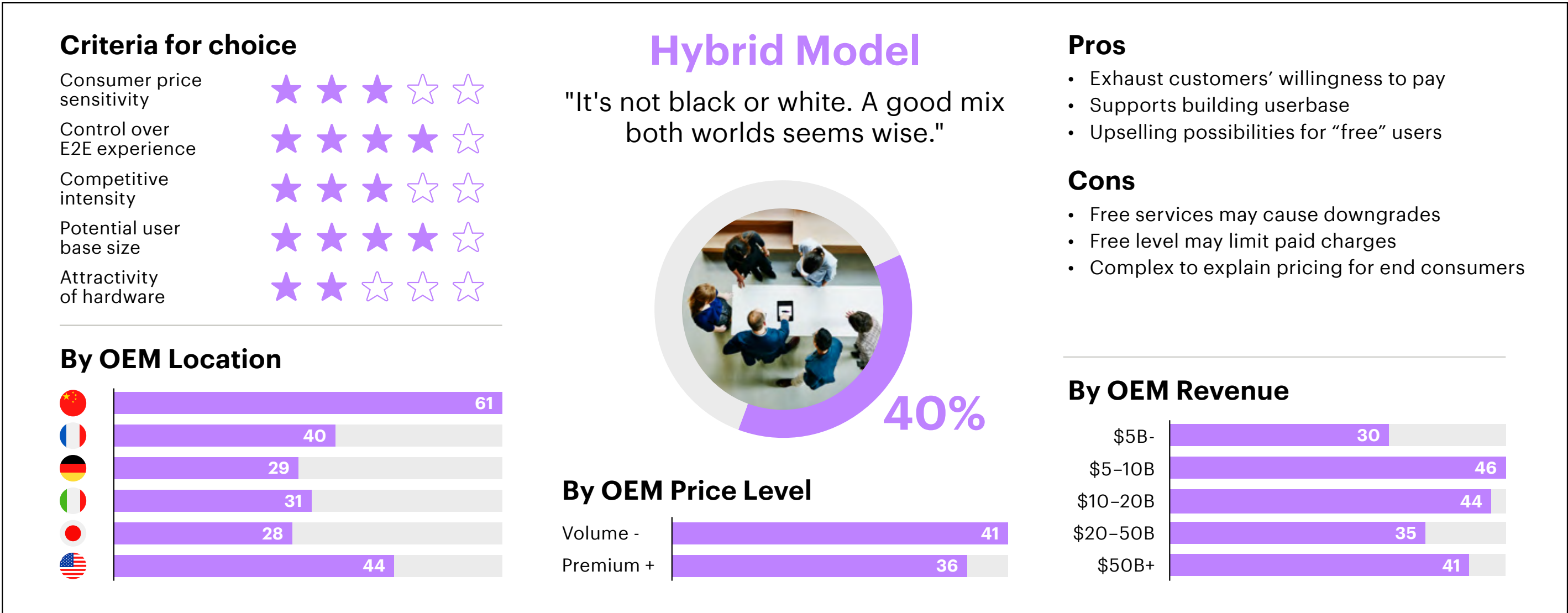
One in seven (14%) of the executives we surveyed said they would try to charge consumers separately (i.e., above and beyond the vehicle purchase price) for all digital services in a “full direct charge” model. Charging for the digital services via a subscription arrangement would give them a recurring revenue stream throughout the vehicle’s lifecycle while avoiding the need to

increase the vehicle purchase price, which might scare away price-sensitive consumers.

The automakers most likely to adopt this approach are higher-end and luxury brands, whose smaller but loyal consumer base is willing to pay for exclusivity in this price segment. With the high margins generated from their existing consumer base, these

automakers have the financial resources to cover the additional investments needed to develop and maintain end-to-end control of the technology stacks.

Model #4: Hybrid approach



The monetization model most likely to be adopted by the greatest number of automakers—cited by 40% of respondents—is one that combines elements of both the fully indirect and the fully direct models. In this model, automakers include most of the basic digital services in the vehicle price and then charge separately on a subscription basis for a few “premium” digital services with the hope of upscaling to the larger user base.

The add-on premium features should be capable of helping differentiate the automaker from the crowd, potentially heavily interlinked with its hardware. Automakers can further monetize this model by selling processed consumer data to third-party companies.

The automakers most likely to adopt this approach are those whose potential consumer base would be willing to move from free

digital services to paying for premium digital services—and that sell enough vehicles to partly scale the cost of all the digital services they offer, both free and premium. This includes higher-price volume automakers as well as those in the premium price levels.

Conclusion: The race to capture value is on

The race is on as well-established automakers and new entrants alike—including tech giants and new automakers—are competing to capture a large share of the revenues from new digitally enabled revenue pools.

Nearly two-thirds (65%) of automakers we surveyed believe that they have a mature strategy for developing a successful digital business. Yet the revenues they're currently generating from digital services thus far tell a different story.

Each of the four emerging models outlined in this report—pure revenue sharing, full indirect charge, full direct charge, and the hybrid approach—may accelerate returns. But in order to compete in the coming years, automakers will need to embrace change, or stall out. Using the criteria outlined in this report, and the decision tree, it's time to assess your plan. Is it positioned to maximize digital services to their potential

for your company? View more information on Accenture's automotive capabilities. [Accenture's automotive capabilities.](#)

Those that define the new performance frontier will use digital services to create a unique purpose that suits their brands. They will account for consumers' ever-changing and individual priorities through the digital services they offer. And they will play to their strengths by determining the optimal method for delivering those services.

In this way, they will differentiate themselves, capture the market they seek, and harness continuous opportunities to grow.

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Research methodology

This study is based on primary and secondary research, both qualitative and quantitative. The first part of the research included **interviews** conducted in February and March 2022 with 15 senior executives from the automotive and other related industries in which digital services are a significant component of revenues. The executives we interviewed belonged to one of the following categories:

Traditional automakers with a long history (35+ years) in the automotive business and annual revenues of at least US\$15 billion in 2021. Automakers represented are headquartered in Europe and Asia.

New automotive start-ups with a relatively short history in the automotive business, each with valuations of at least US\$500 million. Start-ups are headquartered in Asia.

Tier-1 suppliers with a long history supplying parts to automakers, each with annual revenues of at least US\$15 billion. Suppliers represented are headquartered in Europe.

Tech giants with revenues of more than US\$125 billion in 2021 and having some footprint in the automotive industry. Tech players represented are headquartered in North America and Asia.

Telecommunication companies with significant end consumer business and revenues of more than US\$130 billion in 2021. Companies represented are headquartered in North America.

The executives were asked to share their points of view on the ongoing transformation toward digitalization and what it means for management practices in the automotive industry.

These interviews formed the basis for the second part of our research: a large-scale **online survey** conducted with 305 automotive industry executives across six major auto markets between July and October 2022. The executives represent automakers headquartered in China (n=54), France (n=54), Germany (n=52), Italy (n=51), Japan (n=35), and the

United States (n=59), each with at least US\$1 billion in annual revenues. The participants were at the manager level and above, have an average of more than 15 years of experience in the automotive industry, and serve mostly in strategy-related positions (e.g. corporate strategy, product management, etc.). The survey addressed a variety of topics, including potential future developments in the automotive industry, consumer behaviors, automaker capabilities, future business models, data management, and monetization approaches.

We supplemented the primary research with extensive **secondary research**, including reviewing annual and investor reports, company announcements, case studies, and consumer forums and external surveys.

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