Global Automotive Executive Survey
22. utgave
Europeiske perspektiver

Bransjelederne forventer dramatiske endringer

...og ser nye muligheter

kpmg.no/bilundersøkelse2022

Forord

KPMGs årlige bilundersøkelse, Global Automotive Executive Survey (GAES), gir et tydelig perspektiv på bransjens fremtid. I 2021-utgaven forteller mer enn 1100 ledere i 31 land at de forventer en gjennomgripende transformasjon av sektoren i løpet av de neste fem til ti årene. I undersøkelsen bidrar lederne med innsikt om hvordan de store kreftene vil forme industrien gjennom utfordringer i forsyningskjeden og drivlinjer, til endringer i forbrukeratferd og nye teknologiske aktører.

Forbrukeratferden endres
De fleste europeiske ledere forutser at innen 2030 vil et flertall av kjøpene av nye kjøretøy bli fullført online. I tillegg vil minst 40 % av nye kjøretøyer bli solgt direkte fra bilprodusenter til sluttkunden. Mens bilprodusenter trenger å tilegne seg betydelig ny kapasitet innenfor digitalt salg, markedsføring, prissetting og transaksjonsbehandling for å muliggjøre direktesalg til sluttkunden, kan en betydelig restrukturering av forhandlernettverk skape ekstra utfordringer for tradisjonelle forhandlere.

Basert på GAES-undersøkelsen forventer KPMG å se stort omfang av nye abonnementsløsninger og nettsalg. I perioden frem til 2030 vil sannsynligvis bilprodusentene søke å skape verdi fra oppstrømsgenererte data fra kundens bilbruk. Bilprodusenter må også styrke forbrukernes tillit til personvern ved å investere tungt i GDPR- og cybersikkerhetsløsninger.

Forsyningskjeden påvirkes
Fra et globalt perspektiv er lederne bekymret for en rekke utfordringer som påvirker forsyningskjeden, som prisvolatilitet og tilgjengelighet av halvledere og råvarer, mangel på arbeidskraft og forventede lønnsøkninger, samt økte kostnader og kompleksitet fra reguleringer. Gitt disse utfordringene i forsyningskjeden, må bilprodusenter og leverandører fokusere og jobbe sammen for å styrke samarbeid og risikodeling når man nå re-designer verdikjeden. En forventet restrukturering av forsyningskjeden vil gi muligheter for nye oppkjøp og sammenslåinger, samt en unik mulighet til tydelig å innlemme bærekraftsmandatet tvers igjennom verdikjeden.

Nye aktører
KPMG ser for seg både intens konkurranse og økt samarbeid mellom tradisjonelle bilaktører og tech-selskaper. Vi forventer å se høyere investeringer innenfor autonome kjøretøy og avanserte digitale teknologier. Bærekraft vil få prioritet gjennom økt gjenbruk og resirkulering av batterier. Mange mener nå at kontraktsproduksjon vil fungere også innenfor bilproduksjon. Gitt denne forestående inntreden av nye bilprodusenter og oppstartsbedrifter, hvordan vil tradisjonelle OEM-er og deres leverandører konkurrere? Et sannsynlig utfall vil være salg av ikke-strategiske eiendeler, samt å tiltrekke seg kapital for å investere i ny teknologi og M&A-aktivitet de neste tre årene.

Drivlinjer
Fra et europeisk perspektiv tvinger det politiske presset fra ESG-utfordringer (og kappløpet mot en lavkarbonøkonomi) europeiske bilprodusenter til å gjøre vesentlige endringer i forretningsmodellene sine. Samtidig er ESG-utfordringen en mulighet for bilprodusentene til å teste ut og utvikle nye og mer bærekraftige mobilitetsløsninger.

Til tross for at lederne tror at andelen av batteridrevne elektriske kjøretøy (BEV) i Europa vil være nær 50 prosent (av salget av nye kjøretøy) innen 2030, er tilgangen på offentlig tilgjengelig ladeinfrastruktur den største bekymringen for videre utbredelse av elektriske kjøretøy. Nøkkelen til elbilens europeiske suksess vil gå gjennom ulike partnerskap som muliggjør raskere distribusjon av avansert batteriladingsteknologi og infrastruktur. Utover statens subsidiering av elbilsalget har veksten i Norge vært helt avhengig av dette. Dersom salget i Europa innen 2030 tar seg betydelig opp, vil dette kunne redusere prioriteten i leveranser av elbiler til det norske markedet.

Norge i tet

Mens salg av elektriske kjøretøy og utvikling av ladeinfrastruktur i Norge når nye høyder, ser man også at utfordringene og mulighetene som den globale bilbransjen står ovenfor trolig vil påvirke det norske markedet på sikt. Økt salg av elektriske biler globalt vil kunne påvirke tilgangen på biler i det norske markedet på kort og mellomlang sikt, særlig dersom utfordringene med halvledere og forsyningskjeden vedvarer. Inntoget av nye merker, særlig fra Kina, gir muligheter for nye mandater og konstellasjoner i forhandlerkjedene. Samtidig ser man tydelige tegn på at det rokkes ved etablerte samarbeidskonstellasjoner av produsenter og forhandlere. Produsentenes iver etter å overta den direkte kunderelasjonen fører til økt grad av konsolidering blant forhandlerne og et stadig fokus på bruktbilsalg, utlevering og ettermarked. Dette muliggjør også nye forretningsmodeller og bransjesamarbeid på tvers.

Hele tre av fire spurte nordiske ledere i undersøkelsen tror at majoriteten av nye biler vil bli solgt online innen 2030. KPMG mener at dette baner vei for økt bruk av agentmodellen fra produsentene fremover. Forhandlerne derimot sitter fortsatt på en sentral del av infrastrukturen som produsentene er og vil være helt avhengig av også i fremtiden, der forhandleren tross alt har den beste kompetansen på utlevering, handling og salg av biler. Vi ser fortsatt en høy grad av merkelojalitet hos forbrukerne. Dette er likevel kapasiteter som andre bransjeaktører i høy grad vil være opptatt av å true og utfordre i perioden frem mot 2030.

Videre er både de globale og nordiske lederne klokkeklare i troen på at bilabonnementer innen 2030 vil konkurrere jevnbyrdig med tradisjonelt salg. Nye salgskanaler og -modeller vil kunne vri det tradisjonelle bilsalget over fra B2C til B2B gjennom ulike abonnementsløsninger, særlig i de store byene.

Vår konklusjon

Mange av lederne er optimistiske med tanke på markedsmulighetene i fremtiden, men det er store variasjoner om hvordan den faktisk vil komme til å se ut, hvor raskt ting vil endre seg og hvem nøkkelaktørene vil være.

Lesere kan gå til nettstedet vårt (https://experience.kpmg.com/gaes-2021) for å analysere dataene i undersøkelsen og sortere resultater etter region, land, firmatype og -størrelse, og respondenttittel mv. KPMG mener at bilprodusentene må fokusere på å bygge konkurransefortrinn innenfor områder som digital kundetransformasjon,kundelojalitet, forsyningskjede, bærekraft og autonome/tilkoblede kjøretøy. Selv om mye av optimismen blant ledere om fremtiden kan være velbegrunnet, vil endringene utvilsomt produsere både vinnere og tapere, og gjøre ledernes valg i dag kritiske for fremtidens suksess.

John Thomas Sørhaug
Partner
Head of Automotive Norge
KPMG AS

Andreas Loga
Director
Automotive Norge
KPMG AS

Executive summary

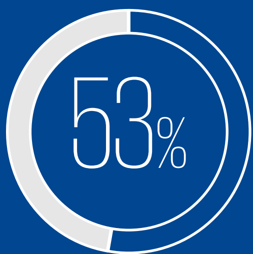
Car manufacturers have rarely faced such an array of technological and business-model changes since the dawn of the automotive industry 130 years ago. Flying taxis, cars by subscription, ubiquitous and fast EV charging stations, big-tech car entrants – these are some of the developments we can expect in the next 10 years, according to our 2021 annual survey of more than 1,000 executives in the global automotive industry.

Yet there are urgent questions executives need to answer right now: Have they learned recent lessons needed to build more resilient supply chains? How will the industry navigate multiple fundamental changes, ranging from new powertrains and autonomous vehicles to new business models, and do so simultaneously? What impact will the new and well-funded entrants have on the industry? How will the established automakers respond?

These are among the issues laid bare by the findings from the KPMG 22nd Annual Global Automotive Executive Survey. The study looks further into the future than in previous annual reports and reveals that automakers are expecting the remainder of this decade to lead to immense changes in every facet of the industry. The survey also shows that in the near-term, executives are very concerned about issues affecting the supply chain. A summary of the key findings can be found on the following page. We encourage readers to go to our website at experience.kpmg.com/gaes-2021 for an interactive experience.

Main findings

The global outlook



of respondents are confident that the auto industry will witness more profitable growth in the next five years. This compares with only 38 percent who are concerned about the outlook for profits.

A higher percentage of European executives (50%) are concerned about automotive industry's profitability in the next five years than their global (38%) counterparts. In the light of continuing decline in EU passenger car registrations (which shrank by 23% in September 2021[1]), this may not be surprising.

Less than 5 in 10 European automotive companies (48%) are very or extremely prepared for the next crisis or disruption. This contrasts heavily with how much Chinese companies are prepared (29%) at the lower end, and North American companies (67%) at the higher end.

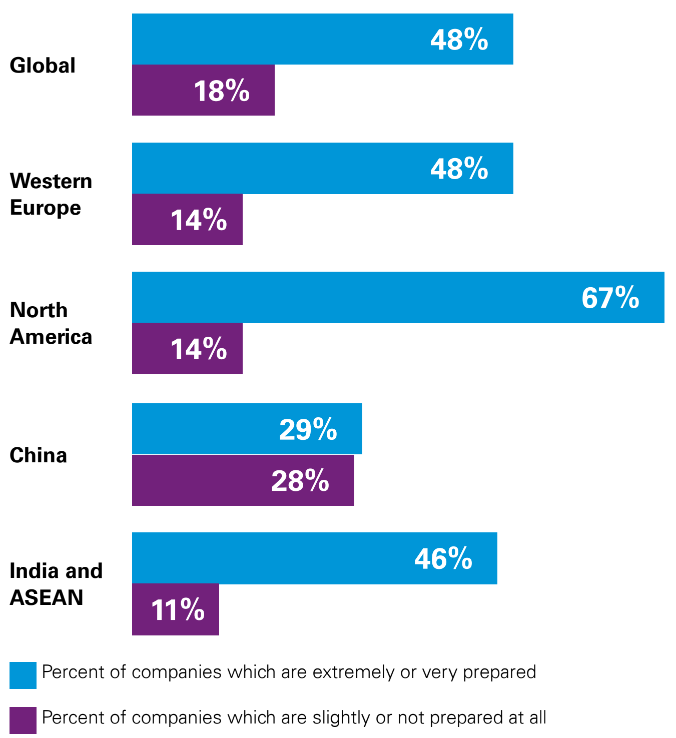
Apart from the semiconductor chip shortage (an aftermath of the pandemic), the political pressure from ESG challenges (and the race to a low-carbon economy) is also somewhat constraining European carmakers' business models and making them a little less optimistic about the future.

However, the current situation offers **fantastic opportunities to test new mobility offerings**. While it may seem that automakers have lost control of their technological agendas, KPMG believes that they need to rebuild their competitive advantages in areas of **digital customer transformation, supply chain, sustainability, and autonomous/ connected vehicles.**

The European story - with its pioneering experiment on **new mobility business models and enabling ecosystems** - will likely be the harbinger of hope for struggling automakers in other regions.

Percent of executives who are confident or concerned that the industry will achieve more profitable growth over the next 5 years vs. today

Percent of companies which are prepared for the next crisis or disruption



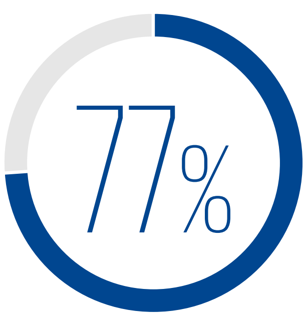
[1] ACEA, "Passenger car registrations: +6.6% nine months into 2021; -23.1% in September", 15 October 2021.

Future of powertrains

Global executives expect **more than 50 percent of new vehicle sales in the US, China and Japan to be battery electric vehicles by 2030**. In Western Europe, this expected share of BEVs by 2030 is slightly lower (49%). Again, this may not be surprising as sales of battery electric and plug-in hybrid vehicles rose significantly in 3Q 2021 across the EU and contributed to ~ 19% of all new vehicle sales.[2]

However, in Europe, the biggest concern impeding the further rapid adoption of electric vehicles **remains insufficient publicly available charging infrastructure**. In a recent paper, it was highlighted that *"the EU is still a long way off its Green Deal target of 1 million charging points by 2025, and it lacks an overall strategic roadmap for electro-mobility."*[4]

77 percent of global executives expect **consumers to require charge times under 30 minutes when traveling**. And thus, considerable investments will be needed to build charging stations and to develop cars that can be recharged quickly and seamlessly.



Most global executives believe (77%) that BEVs can be widely adopted without government subsidies, but an overwhelming majority (91%) still supports such programs.

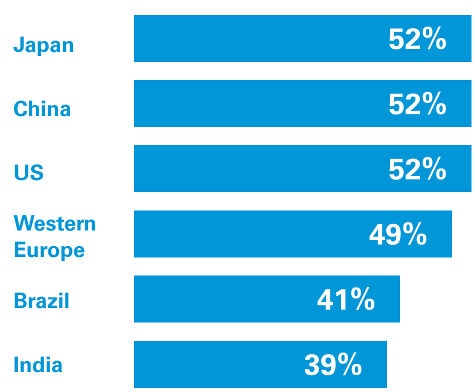
Unlike other markets, electric vehicle sales in Europe are boosted by aggressive government policy push which positively affects both carmakers and consumers through various incentives and subsidies. With EU aiming to be carbon-neutral by 2050[3], it is not surprising that **uptake of electric vehicles has been heavily incentivized through a slew of policy measures (including the European Green Deal)**.

In Europe, there is also a considerable policy push towards adoption of hydrogen-powered vehicles, especially for long-haul transportation. It remains to be seen how European vehicle manufacturers tackle the issues related to the cost of fuel cell technology, and the scarce hydrogen refueling infrastructure.[5]

Percent of executives who believe in widespread BEV adoption with and without government support

In fact, many European carmakers have already inked JVs with leading energy and tech players (to hedge risk) in this regard. The next step is to make successes out of these partnerships by enabling rapid deployment of advanced battery charging tech and infrastructure.

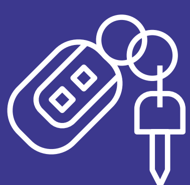
Percent of new vehicle sales to be battery-electric (excluding hybrids) by 2030 in each key market (global average based on survey responses)



[2]Reuters, "Electrified cars hit almost a fifth of EU Q3 vehicle sales", 22 October 2021.
[3]European Commission, "2050 long-term strategy".
[4]European Court of Auditors, "Infrastructure for charging electric vehicles: more charging stations but uneven deployment makes travel across the EU complicated", 2021.
[5]Reuters, "German auto giants place their bets on hydrogen cars", 22 September 2021.

Digital consumers

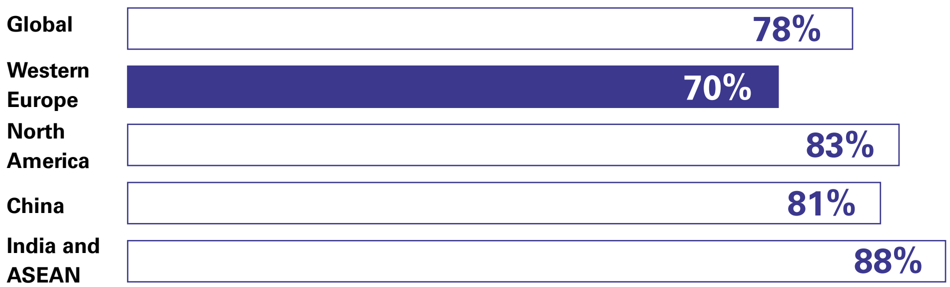
Most Global and European executives (> 70%) foresee that by 2030, a **majority of new vehicle purchases will be completed online**. 3 in 4 European executives also foresee that **at least 40% of new vehicles will be sold directly by automakers** in their home markets by 2030, bypassing traditional dealers.



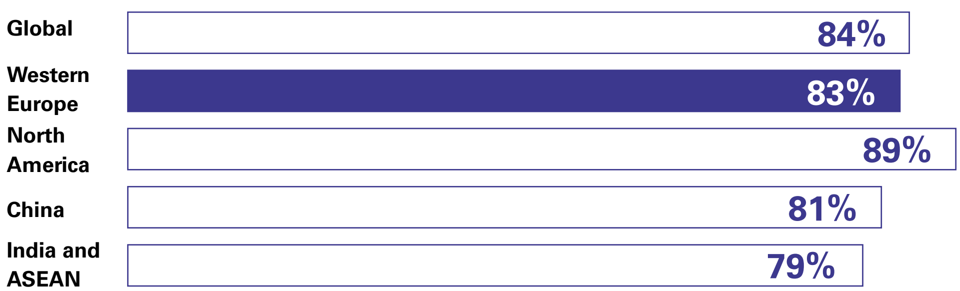
They expect a **seamless purchase and ownership experience** will be even more important than vehicle performance in consumers' buying decisions.

The reduced volumes through traditional dealers may require **significant restructuring of dealer networks** which are already facing long-term challenges to their profitability. For the automakers, direct sales will require significant new capabilities in digital sales, marketing, pricing, and transaction processing.

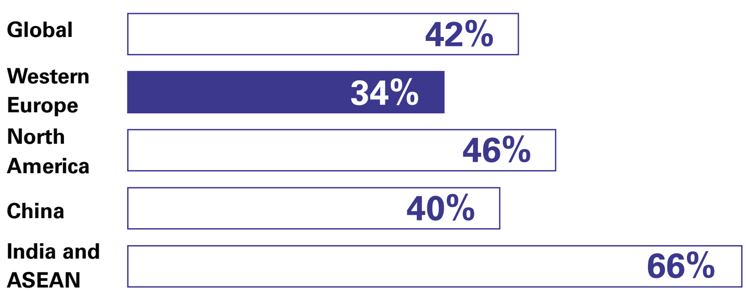
Percent of executives who believe that majority of new vehicle purchases will be completed online by 2030



Percent of executives who think that vehicle subscriptions will be a competitive offering to traditional purchases and leases



Percent of executives who think that consumers will trust OEMs the most to safeguard their vehicle data

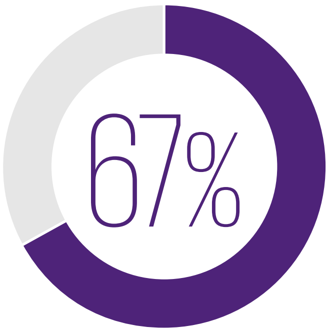


With more than 8 in 10 Global and European executives believing that vehicle subscriptions will be a competitive offering (to traditional leases and purchases) by 2030, **automakers will need to balance customer needs for flexibility and convenience against profitable fleet economics**.

With new vehicle subscriptions and online sales, automobiles will likely generate vast amounts of data that automakers may be able to monetize. 1 in 3 European executives (vs. 2 in 3 executives in India & ASEAN) believe that consumers will trust automakers the most to safeguard their vehicle data. To become the custodians of automotive data, **automakers will need to ensure that consumers' trust in data privacy won't be abused**. This is an opportunity to create a new relationship with customers based on trust, by being careful guardians of their data.

New technologies and new entrants

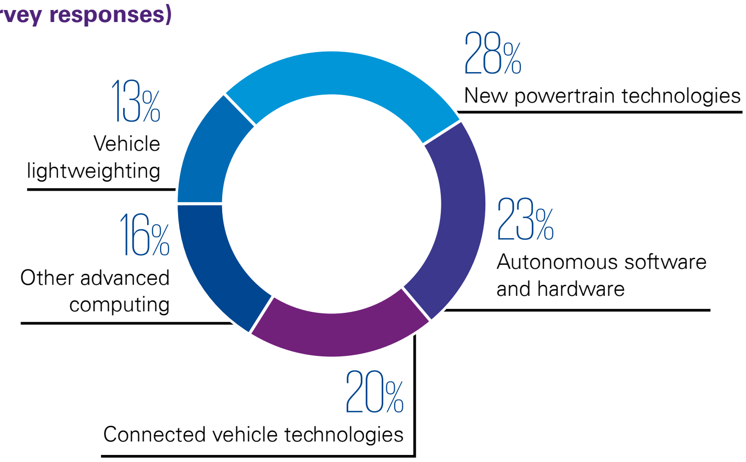
KPMG foresees intense competition and cooperation between traditional automotive players and new entrants as well as higher investments in areas of autonomous/connected vehicles, advanced digital technologies, battery reuse/recycle, and contract manufacturing.



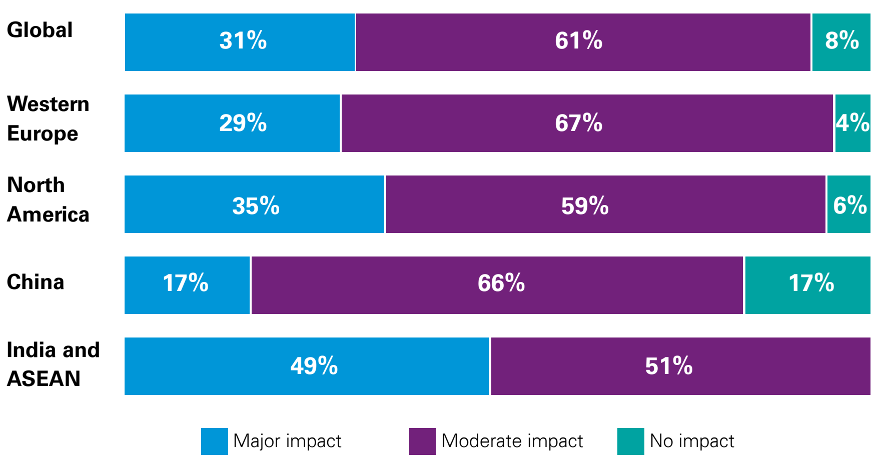
67 percent European executives (vs. 61% global executives) foresee **a moderate impact made by auto startups**, in the sense that while some of these new entrants will find success, they will likely be bought off by traditional automakers or play in niche areas.

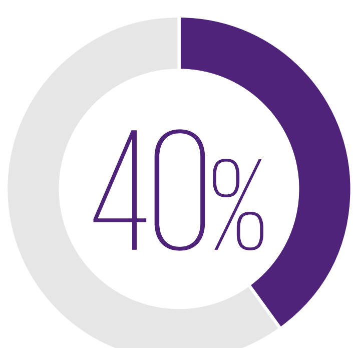
R&D investment in advanced batteries is another focus area for European executives. From a manufacturing perspective, there are enormous investments announced already in new battery production capacity by European and global automakers. However, eventual saturation of battery capacity (given the projected EV demand), fluctuations in battery raw material prices and policy focus on sustainability might make the case more attractive for re-use and recycle of EV batteries. Hence, automakers should not only strategize to expand R&D and manufacturing of advanced batteries, but also **look at ways to have a closed loop circular value chain to enable monetization of used batteries in a sustainable manner**.

Allocations of additional R&D funding in the vehicle technologies (global average based on survey responses)



Percent of executives who think that auto startups will have impact on the industry





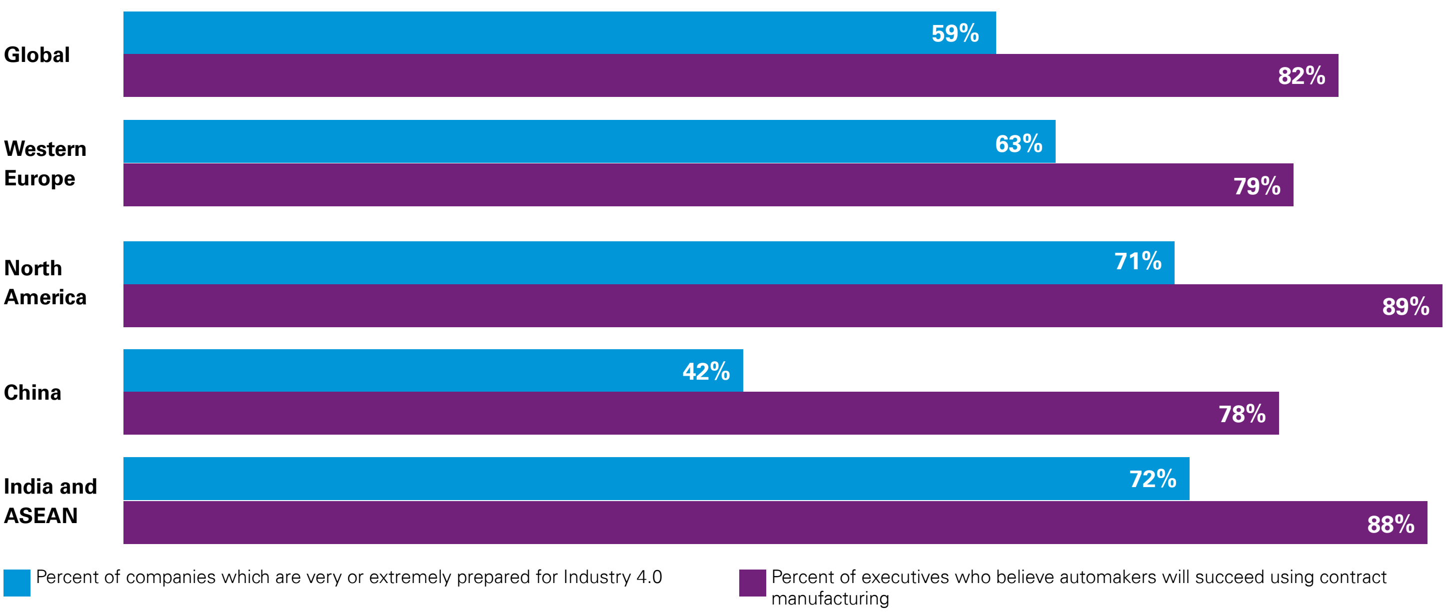
When asked about deploying additional R&D funding, Global and European executives agreed that they will deploy more than 40% of this additional funding in autonomous hardware & software and connected vehicle technologies. The technology of autonomous driving is already in the starting blocks. However, the safety has still to be guaranteed and there are some legal challenges to tackle. And if traditional automakers are to rise to the challenge of new entrants and rapid commercialization of autonomous vehicles, they **will likely need to accelerate their digitalization efforts**.

New technologies and new entrants (contd.)

8 in 10 European (and global) executives believe that new automakers can succeed in pursuing asset-light strategies through contract manufacturing. However, KPMG believes that it's simply not a matter of manufacturing cars through third parties – these new automakers **will likely have to build an entire after-market sales organization and structure to be successful**.

63 percent of European executives (vs. > 70% executives in North America and India & ASEAN) state that their companies are **very much prepared for Industry 4.0 technologies**. European executives would like to deploy only 15% of the additional R&D funding in advanced computing technologies. Advanced manufacturing that leverages machine learning and other forms of AI will create competitive advantages from an output and quality perspective.

Opinions on preparedness for Industry 4.0 and contract manufacturing



Given this impending disruption from new automakers and start-ups, how will traditional OEMs and suppliers compete? KPMG believes that many automakers and suppliers will divest non-strategic assets, raise cash to invest in new technologies. Looking at the convergence of technology-driven disruption, the current supply and demand impact of the pandemic, and capital markets' spending power, we expect to see unprecedented M&A activity in the next three years.

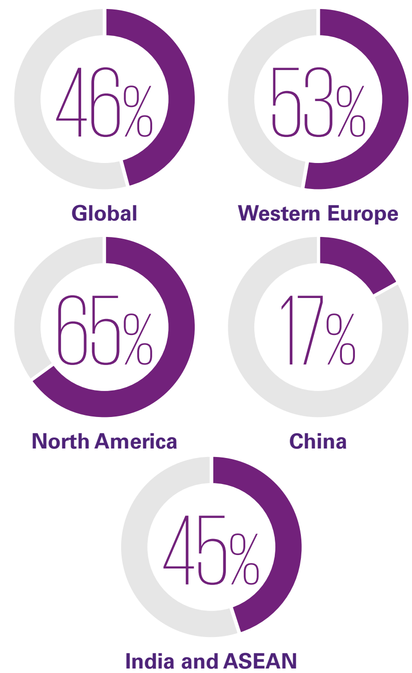
Vulnerable supply chains

53 percent European executives (vs. 46% global executives) are **very or extremely worried about a range of issues affecting the supply chain**, including the price volatility and availability of semiconductors, steel, rare earth elements and other exotic materials.

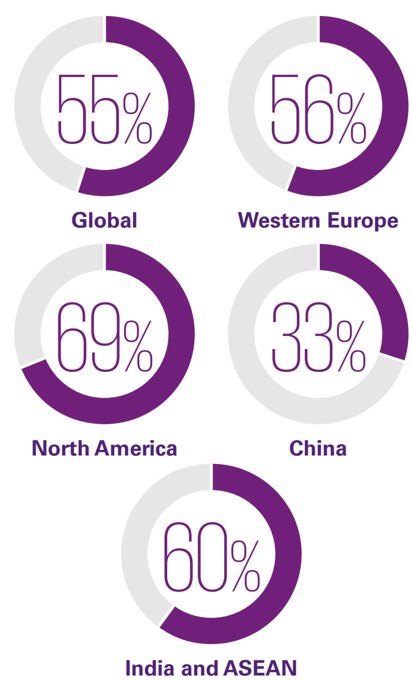
More than 5 in 10 European (and global) executives are very or extremely concerned about labor shortages or wage increases affecting their business in the short-term. This is a concern to a higher degree in North America and India & ASEAN.

Almost 6 in 10 European (and global) executives also believe that **cost and complexity of tariffs, trade rules and regulations will increase** in the next 5 years.

Percent of companies which are very or extremely concerned about recent comodity price volatility adversely impacting their business in the next 12 months



Percent of companies which are very or extremely concerned about labor shortages or wage increases adversely impacting their business in the next 12 months



These concerns are founded on the basis of current issues afflicting the automotive supply chain globally. Apart from the semiconductor chip shortage, price volatility and supply of basic commodities have also become an issue. While most of these issues are related to pandemic shutdowns, "global transportation woes, weather disruptions and misguided tariffs" have made the problem even worse.[6] In fact, **automakers globally can lose $210 billion in potential revenues** this year due to supply chain disruptions.[7]

Many suppliers are already **facing issues related to supply forecasting, inventory management, and unpredictable costs** due to fluctuating commodity prices and higher labor wages. If the pandemic continues to play havoc, then many of these suppliers will be at the risk of bankruptcy.

The automotive supply chain is in need for a major restructuring exercise. **We may witness some of the smaller suppliers getting acquired by larger suppliers (or even OEMs themselves)** and OEMs inking JVs with new suppliers to protect future production. Companies need to carefully consider any changes in tax laws also as they redesign their value chains. The **transition to new business models can also create further tax complexity** for automakers.

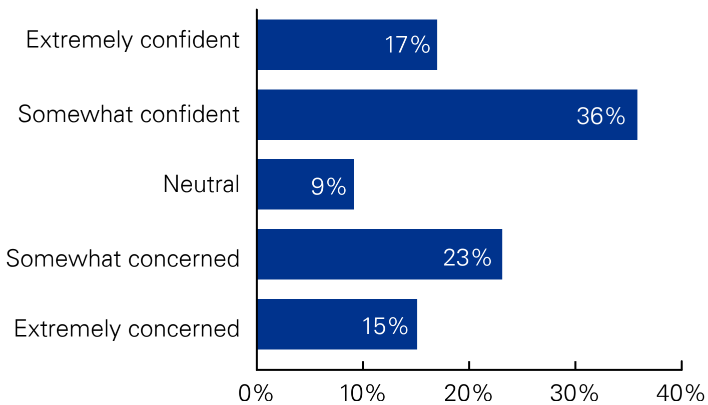
Automotive OEMs and suppliers need to focus and work together on enhancing cooperation, enabling risk-sharing and increasing visibility and flexibility of their supply chains. And with climate change and decarbonization rearing its head, both automotive OEMs and suppliers also need to make their supply chains more sustainable.[8]

[6] Forbes, "Overcoming Supply Chain Issues: Automotive OEMs And Suppliers Must Work Together", 22 September 2021.
[7] Reuters, "Supply chain snarls could cost automakers $210 billion this year, forecast finds", 23 September 2021.
[8] MIT Center for Transportation & Logistics and Council of Supply Chain Management Professionals, "State of Supply Chain Sustainability 2021", 2021.

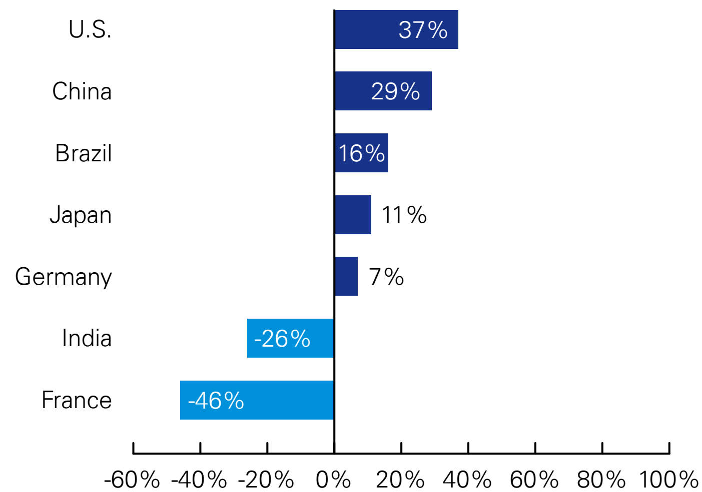
The global outlook

Respondents' long-term expectations are fueled by bullish views about the future, buoyed by their ability to withstand the whiplash effects of the pandemic. The global car industry has managed to weather the crisis without a major bankruptcy. As the world economy continues to recover, albeit haltingly, from the COVID-induced downturn, a majority of car executives believes corporate fortunes will improve.

How confident or concerned are you that the industry will achieve more profitable growth over the next five years versus today?



Net sentiment* by country



Source: GAES 2021, KPMG International

Note: In some charts, totals do not add up to 100 percent, due to rounding

*Number confident minus number concerned

More than half (53 percent) of respondents are somewhat or extremely confident that the industry will achieve more profitable growth over the next five years than today. This compares with only 38 percent who are somewhat or extremely concerned about the prospects for profitable growth, 15 percentage points less.

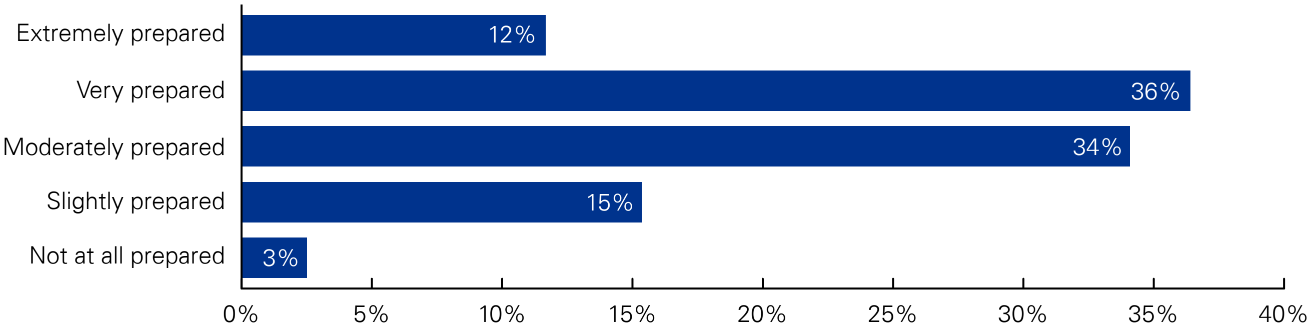
Beneath the bullishness, however, there are regional disparities in the level of confidence. Executives in the U.S. are more confident about the future and Europeans somewhat less, with Asian sentiment in between. In the U.S., 66 percent expressed confidence, compared with only 49 percent in Germany and 55 percent in China. At the opposite extreme, 70 percent of executives in France are somewhat or extremely concerned about the prospects for profitable growth.

There are also significant differences within segments. Tier 1 suppliers are less bullish than automakers and Tier 2 suppliers are more optimistic than either.

> *In Europe, the political pressure from ESG challenges and the race to a low-carbon economy are straining business models, but also offer fantastic opportunities to test new mobility offerings. OEMs seem to have lost control of their technological agendas, and they need to rebuild their competitive advantages. Yet Europe is a fascinating laboratory for new mobility, and success here means securing the future of these innovations.*
> – Laurent Des Places, Partner, KPMG in France

In line with the general optimism, nearly half (48 percent) say they're very or extremely well prepared for the next disruption, whatever it may be. This compares with only 18 percent who are not at all or only slightly well prepared. The U.S. is particularly confident, with a 58-point disparity between those who are well prepared and those who are not. This is almost double the percentage gap in Japan. In China, the pessimists and optimists are almost equal in number.

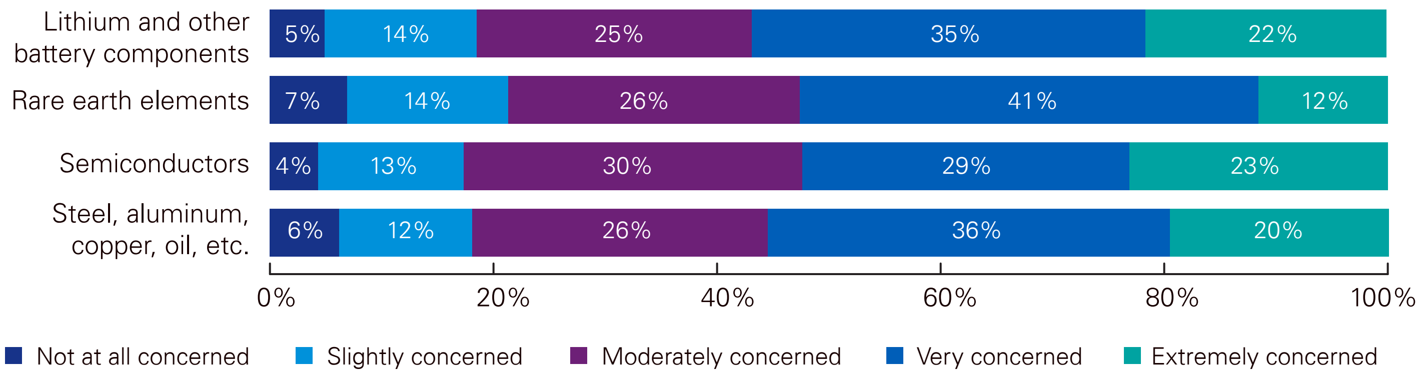
How prepared do you believe your company is for the next crisis and / or disruption?



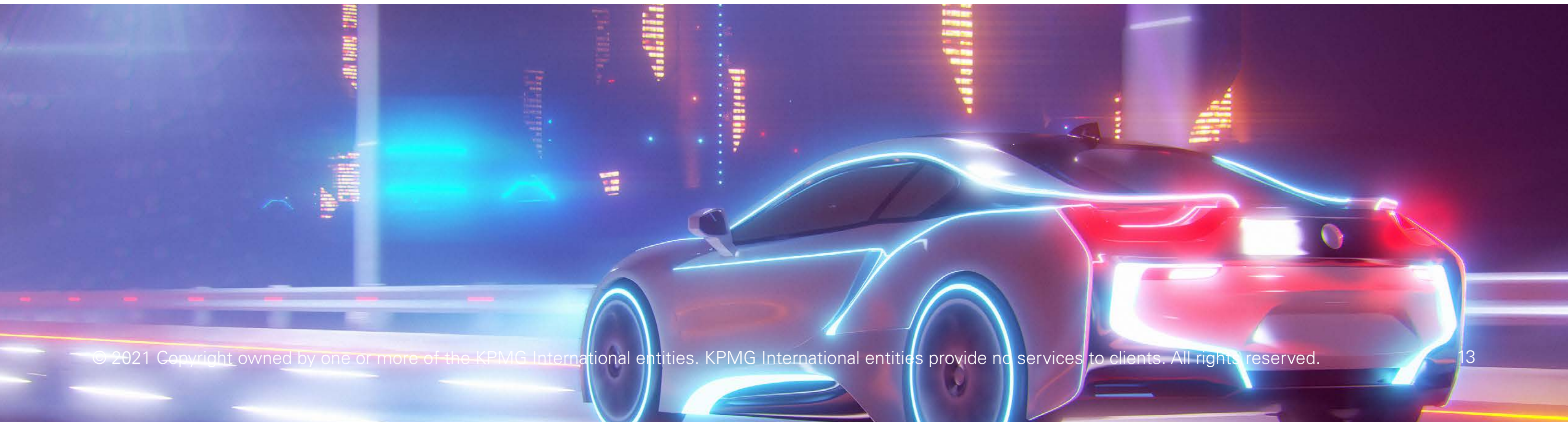
Source: GAES 2021, KPMG International

Amid the high confidence in the industry's prospects, there is considerable anxiety about key aspects of operations, both short and long term. More than half of respondents are very or extremely concerned about supplies of key elements—not just exotic commodities, such as rare earth elements and lithium, used in batteries, but also steel, aluminum, and copper. In addition, executives express a high degree of concern about labor shortages, especially in the U.S. These topics are covered in more detail in the following supply chain section.

How concerned are you about supply continuity for the following commodities / components?



Source: GAES 2021, KPMG International



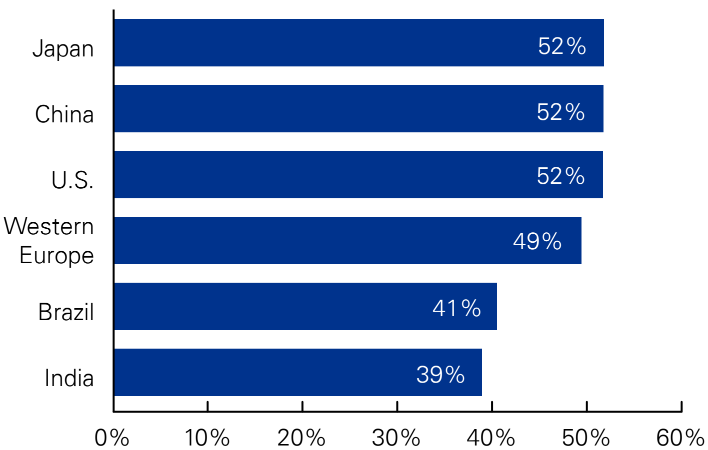
Powertrains

Auto executives believe that by 2030 EVs will achieve widespread adoption, but there is no consensus on what share of the market they will capture. Overall, though, the survey aligns with the many recent OEM commitments to EVs. When asked, executives are willing to make further investments in EV powertrains, if offered additional R&D funding.

On average, executives say they expect that EVs will take half the auto market in Japan, China, the U.S. and Western Europe by 2030 and around 40 percent in Brazil and India. However, a closer look at the data reveals a large spread in estimates for the future EV share in each market.

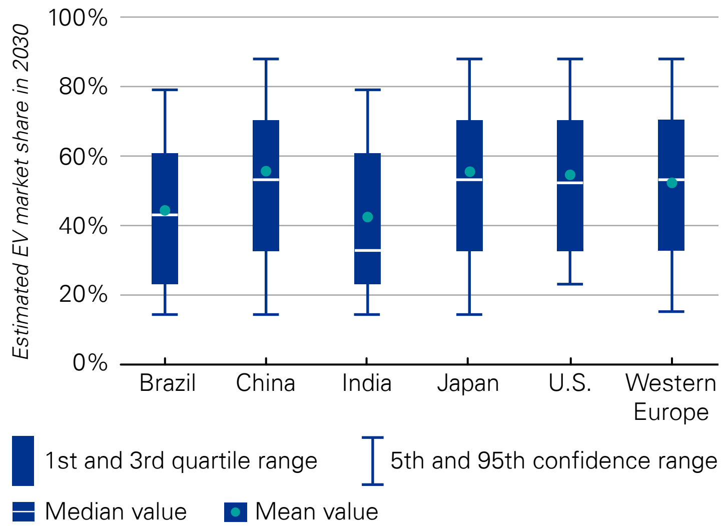
By 2030, what percentage of new vehicles sales do you believe will be battery powered (excluding hybrids) within each market?

Average by market



Source: GAES 2021, KPMG International

Distribution by market



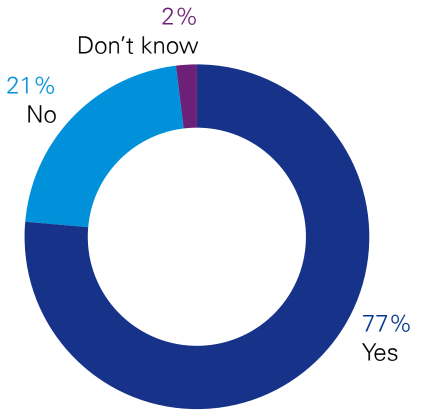
Perspectives from around the globe

> *We see enormous automaker investments in new battery production capacity. Some automakers are still working with JV partners, but others now have enough expertise to build and run the plants on their own.*
> – Andreas Ries, Partner, KPMG in Germany

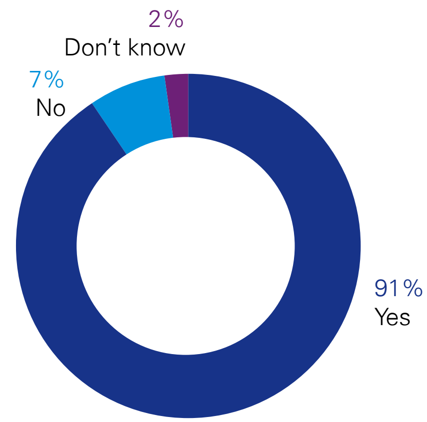
> *Among other factors, EV adoption in many markets has been constrained by the limited number of models available, especially in the larger vehicle segments. The strong pipeline of new EV model launches in the next 24 months will likely create more options for consumers.*
> – Megumu Komikado, Partner, KPMG in Japan

There are important economic assumptions behind these EV adoption expectations. Almost three-quarters (73 percent) of respondents expect that EVs will have reached cost parity with ICE vehicles by 2030. Seventy-seven percent of respondents believe that EVs will achieve widespread adoption without government subsidies. However, 91 percent support such subsidies.

Do you believe battery electric vehicles can achieve widespread adoption in the next 10 years without government intervention?



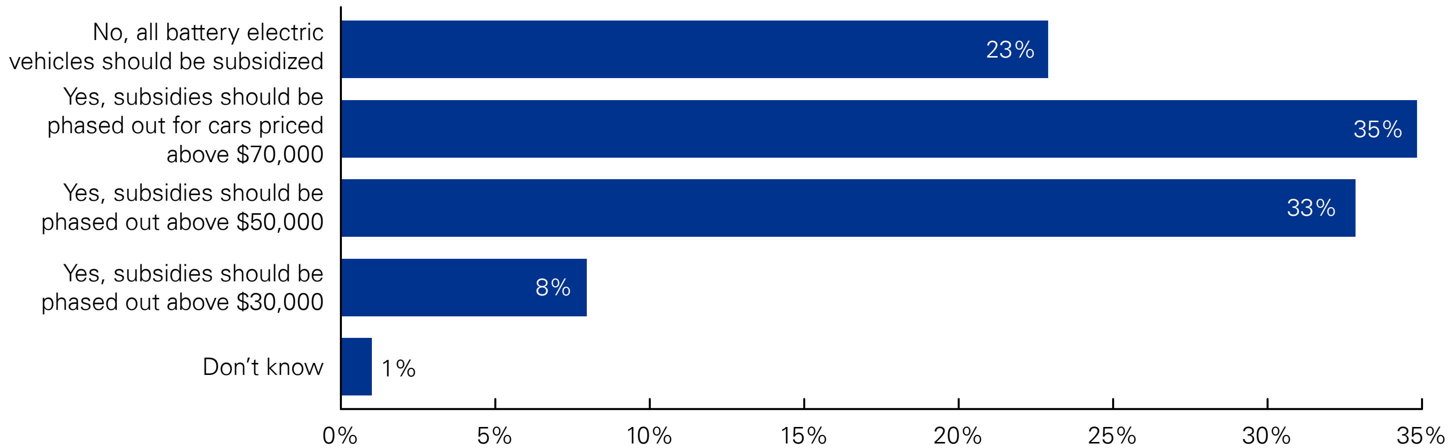
Some governments are providing direct consumer subsidies for battery electric vehicles. Do you agree with this policy?



Source: GAES 2021, KPMG International

Even those respondents who support subsidies believe there should be limits on government largesse. Sixty-eight percent of those in favor of government support believe it should be phased out for cars priced over $50,000.

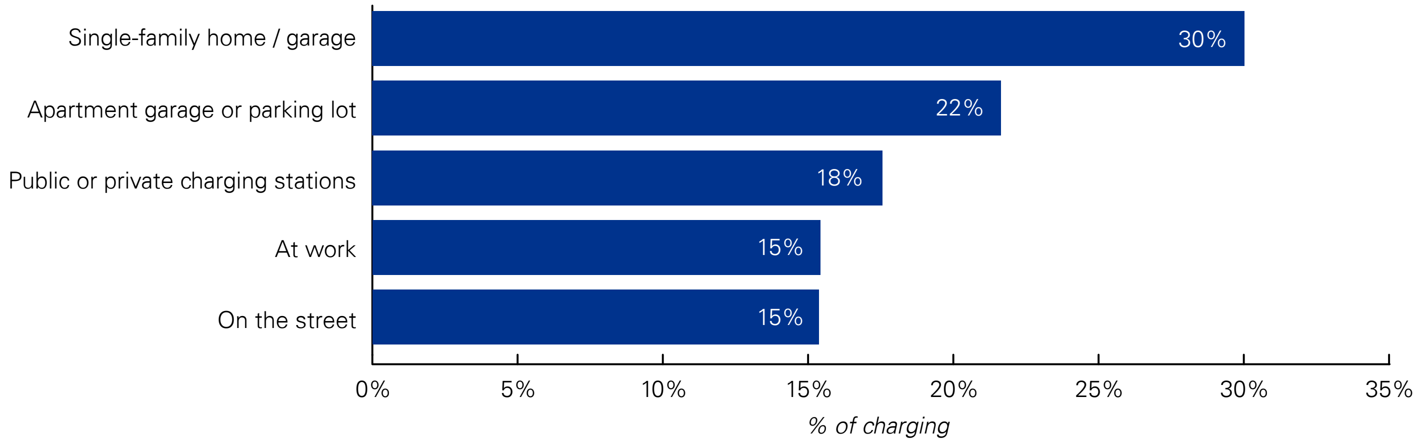
If yes, should the subsidies be phased out for vehicles above a certain vehicle price?



Source: GAES 2021, KPMG International

Infrastructure remains a major challenge for EVs. Respondents expect only slightly more than half of charging to take place at home. This implies a significant need for other charging options.

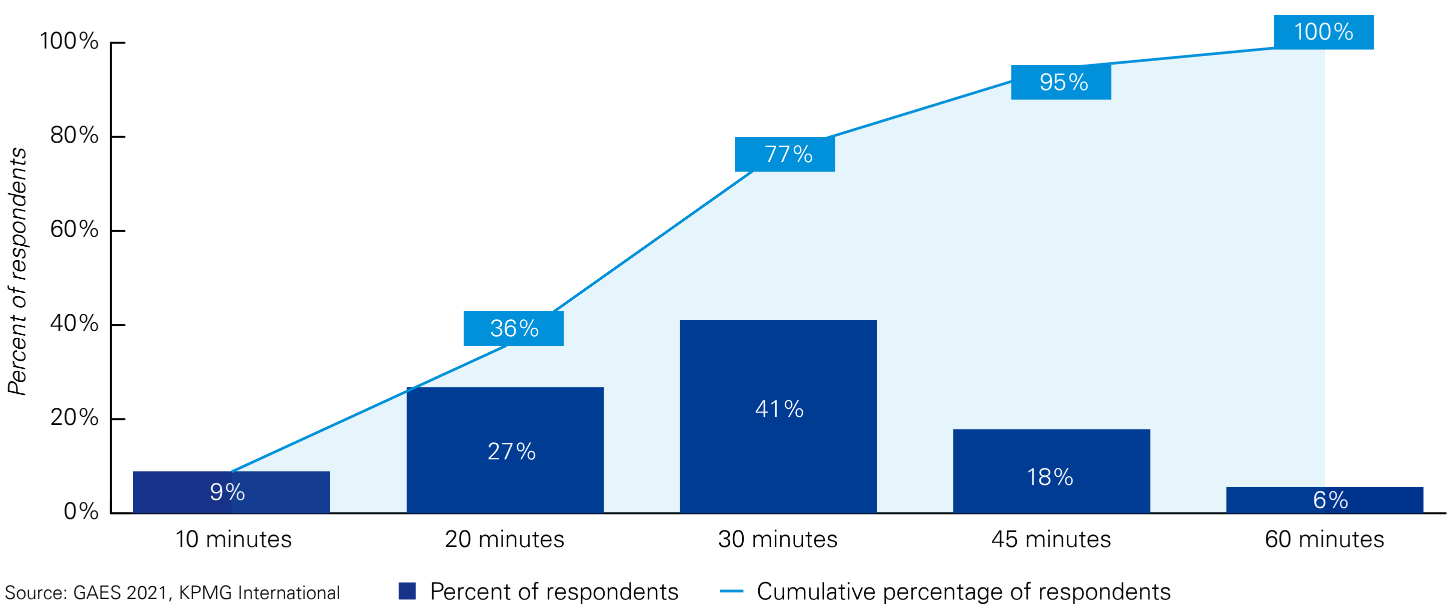
In your home country, where will owners charge their battery electric vehicles? (allocate 100%)



Source: GAES 2021, KPMG International

When asked how long they think consumers would be willing to wait for an 80 percent recharge, more than three-quarters (77 percent) of respondents say no more than 30 minutes.

While traveling and running low on battery charge, how long will the typical consumer be willing to wait for an 80 percent or greater recharge?



Source: GAES 2021, KPMG International

This requires DC fast-charging stations, which cost about $100,000 each. In the U.S., less than 20 percent of existing public EV charge points are DC fast chargers, and many of them are still not fast enough to achieve an 80 percent recharge in 30 minutes.

> *Availability of charging infrastructure will likely be critical for widespread EV adoption, especially in densely populated cities.*
> – Seung-Hoon Wi, Partner, KPMG in Korea

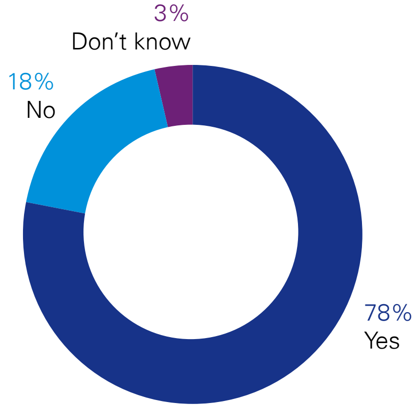
Digital consumers

Car sales

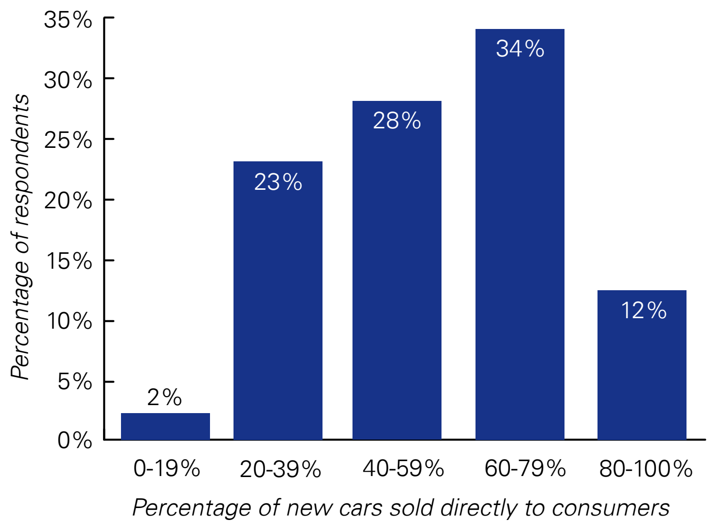
Auto executives are boldly predicting massive changes in the way that cars are purchased.

More than three quarters of respondents (78 percent) think that most new cars will be purchased online by 2030. Further, almost half (47 percent) believe that at least 60 percent of new cars will be sold directly by automakers to consumers by 2030. The shift toward an automaker-led online sales model will have widespread implications for the automotive sector.

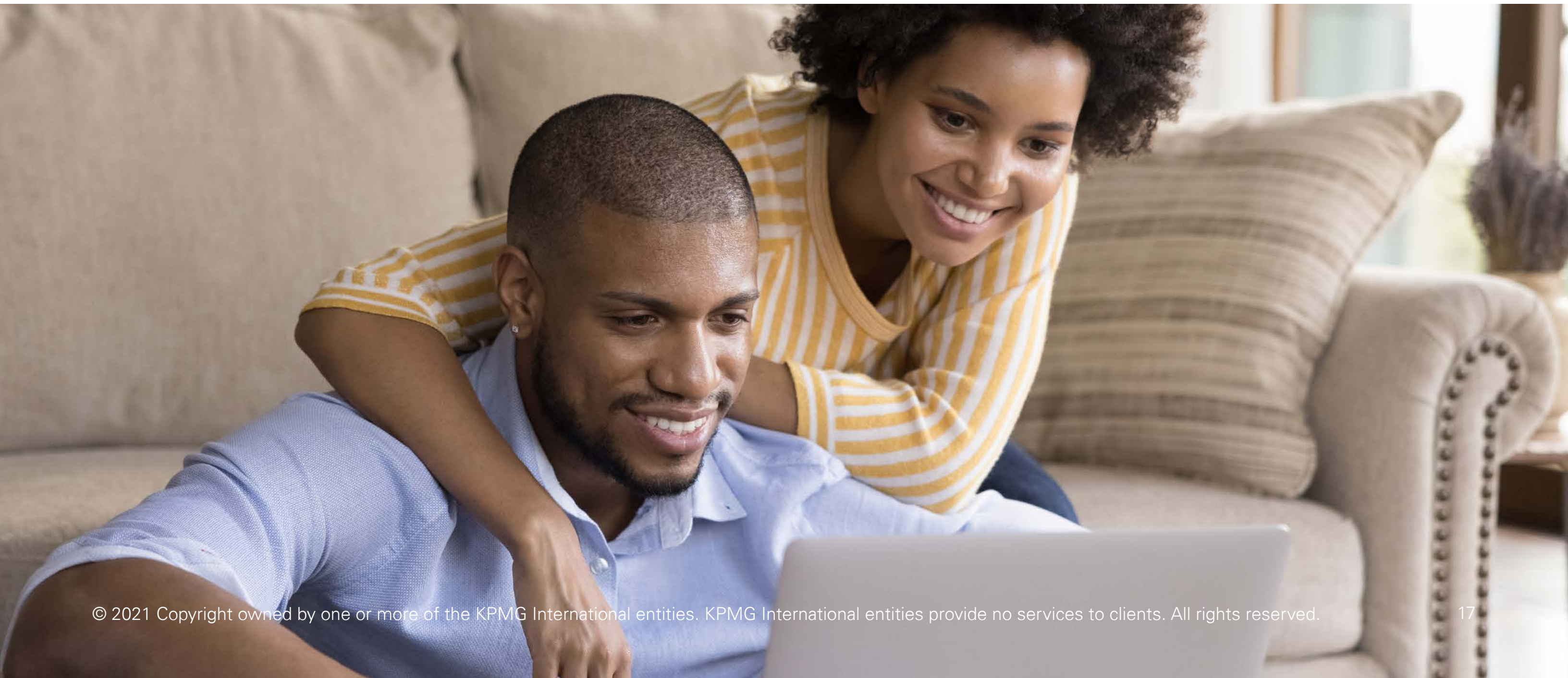
By 2030, do you believe the majority of new vehicle purchases will be completed online? (Excluding test drive)



By 2030, what proportion of new cars will be sold directly to consumers by automakers in your home market?



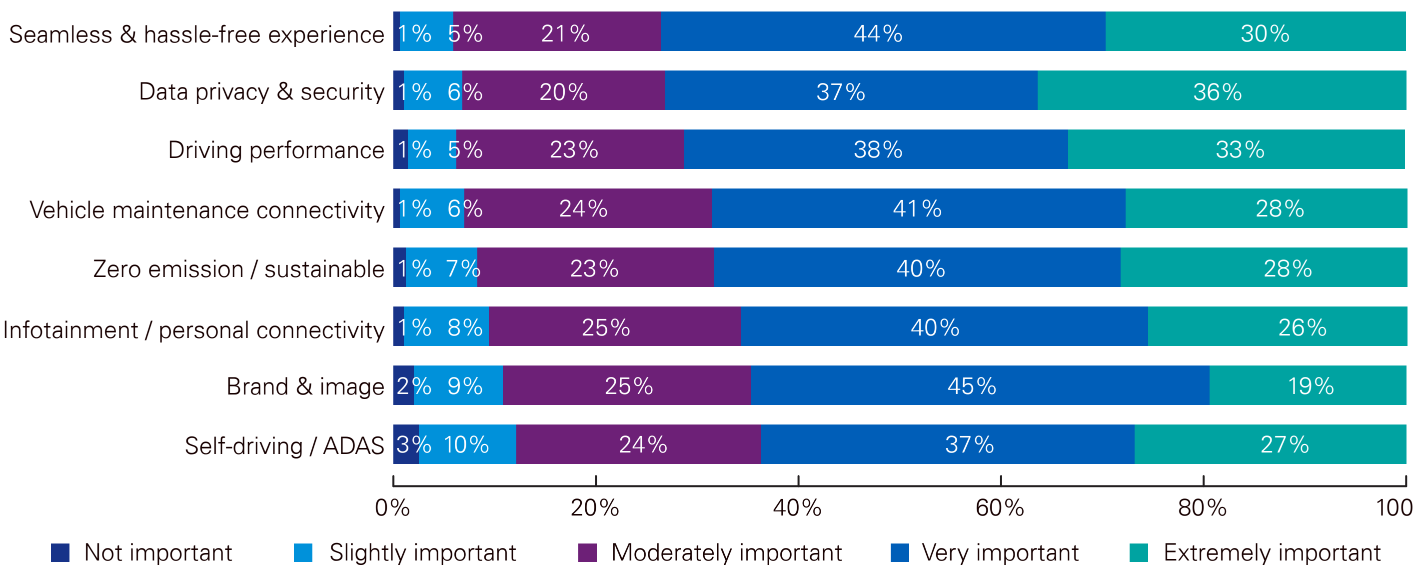
Source: GAES 2021, KPMG International



The reduced volumes through traditional dealers may require significant restructuring of dealer networks, which are already facing long-term challenges to their profitability. For the automakers, direct sales will likely require significant new capabilities in digital sales, marketing, pricing, and transaction processing.[1]

Further emphasizing the importance of this shift, executives believe that a “seamless and hassle-free experience” will be an even more import factor in consumer purchasing decisions than vehicle performance.

How important do you think the following features will be for consumers when deciding to purchase a car in the next 5 years?

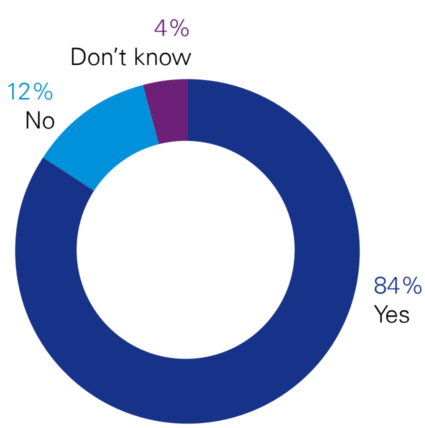


Source: GAES 2021, KPMG International

New business models

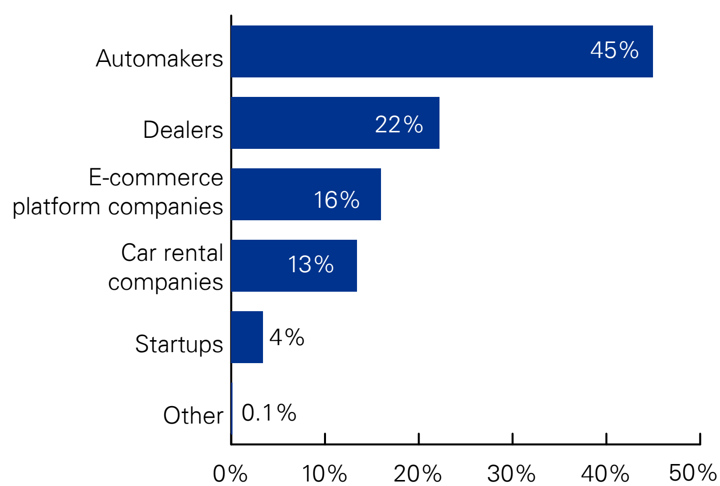
Executives expect big changes in modes of vehicle ownership. Eighty-four percent think car subscriptions will compete with sales and leases by 2030.

By 2030, do you think vehicle subscriptions will be a competitive offering to traditional purchases and leases?



Source: GAES 2021, KPMG International

Which type of company do you believe is best positioned to succeed in offering vehicle subscriptions?



[1] The future of automotive retail, KPMG LLP (U.S.)

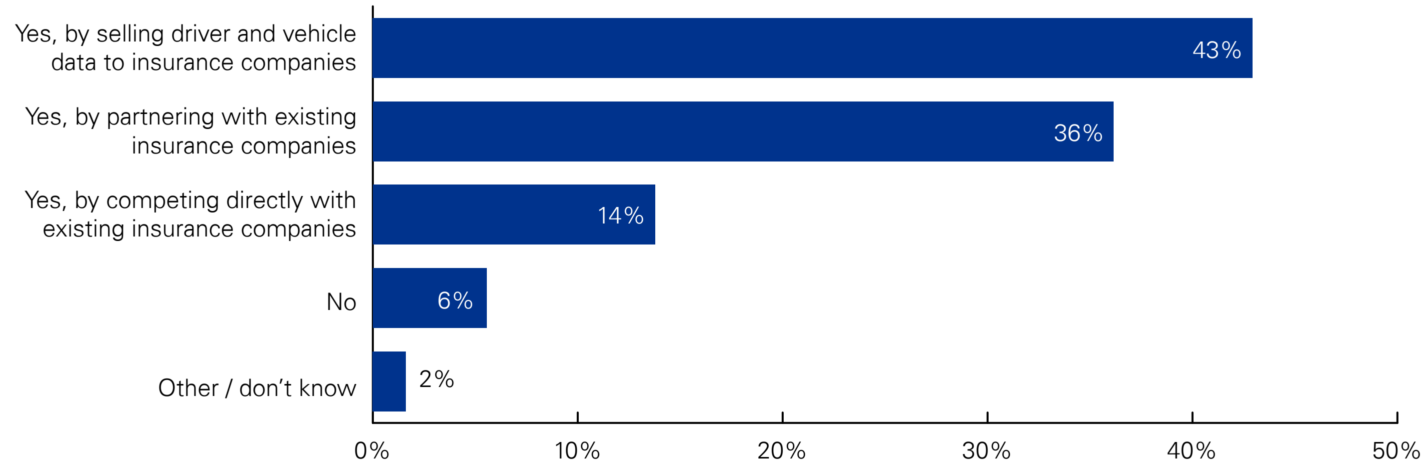
This is likely to provide another business opportunity to automakers: Almost half (45 percent) say auto manufacturers, rather than dealers or other players, will be best positioned to make a success of subscriptions. Sixty percent of automakers agree. By 2030, individual customers may be paying a subscription to an automaker that would enable them to switch periodically from one model to another in the product line-up.

> *Automakers are still trying to develop viable subscription models. It is difficult, as they need to balance customer needs for flexibility and convenience against profitable fleet economics.*
> – Richard Peberdy, Partner, KPMG in the U.K.

Car data

Automobiles will generate vast amounts of data that automakers may be able to monetize, especially related to car insurance. When asked how auto makers expect to participate in the insurance market, 43 percent say that car companies will sell driver and vehicle data to insurers.

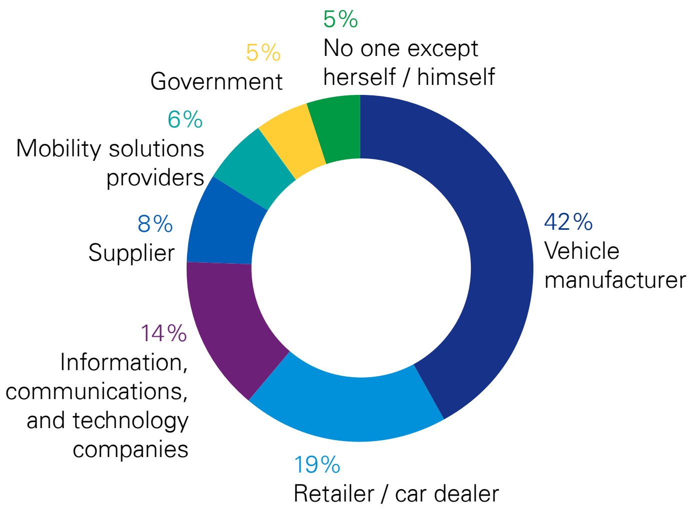
Do you think automakers will successfully participate in the insurance market? If so, how?



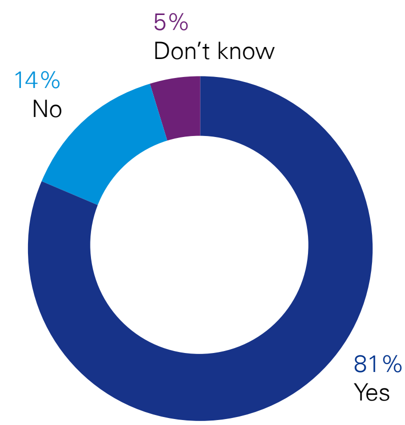
Source: GAES 2021, KPMG International

Given the sensitivity of car data, which type of organization will be most trusted to safeguard it? Vehicle makers again come out on top (42 percent say so). In addition, 81 percent are confident automakers have adequate cyber security and data privacy protections.

Whom do you think a consumer would trust most to safeguard the data generated by the vehicle?



Do you believe automakers have adequate cyber security and customer data privacy protection in place?



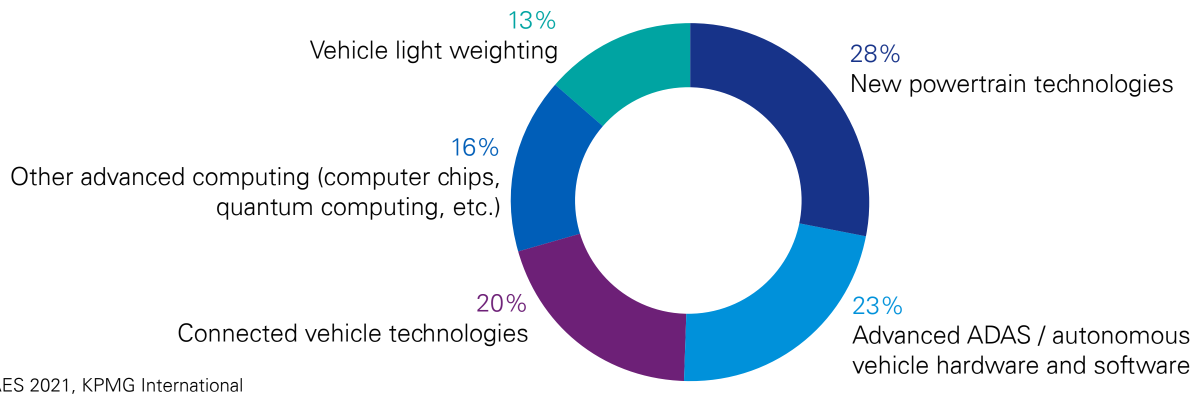
Source: GAES 2021, KPMG International

> *To become the custodians of automotive data, automakers will need to ensure that consumers' trust in data privacy won't be abused. This is an opportunity to create a new relationship with customers based on trust, by being careful guardians of their data.*
> – Vinodkumar Ramachandran, Partner, KPMG in India

New technologies and new entrants

As auto executives look toward the future, they face critical decisions on where and how to place their bets. When asked how they would allocate a doubling of their company's R&D budget, executives split their investments relatively evenly across a variety of technologies, with a moderate bias toward new powertrain technologies.

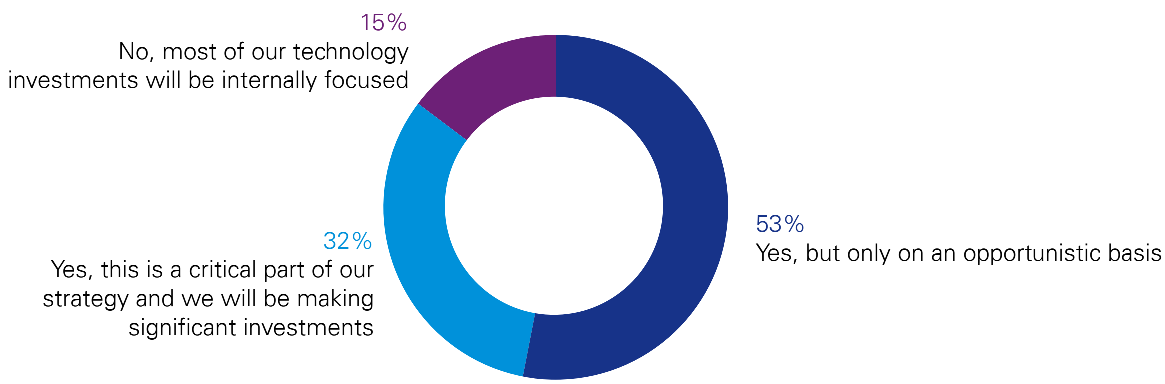
If you were given approval to double your existing R&D investment, how would you allocate the additional funding among the following technologies? (Allocate 100 percent)



Source: GAES 2021, KPMG International

Many automakers and suppliers say their companies will divest nonstrategic assets, raising cash to invest in new technology. Eighty-five percent of respondents are considering new investments, acquisitions and partnerships in new technology companies in the coming years. To generate cash, 75 percent say they are at least moderately likely to divest nonstrategic parts of their businesses in the next several years.

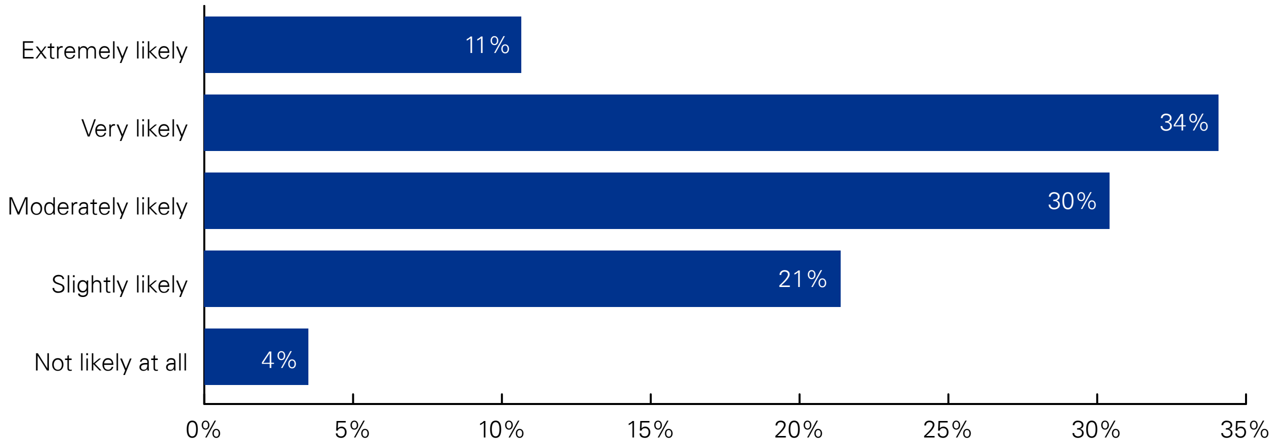
Are you considering making investments / acquisitions / partnerships in new technology companies in the next several years?



Source: GAES 2021, KPMG International

> *Looking at the convergence of technology-driven disruption, the current supply and demand impact of the pandemic, and capital markets spending power, we expect to see unprecedented M&A activity in the next three years.*
> – Per Edin, Principal, KPMG in the U.S.

How likely are you to divest nonstrategic parts of your businesses in the next several years?

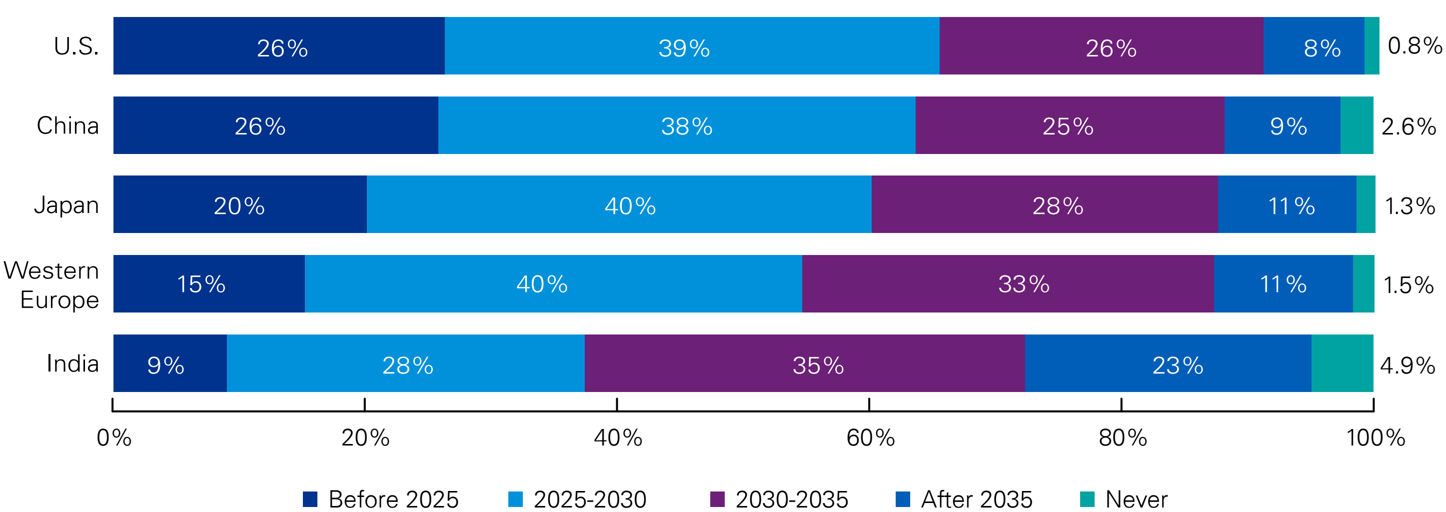


Source: GAES 2021, KPMG International

> *Companies often wait too long to sell a business and value declines in the interim. Auto companies with legacy technologies should quickly come to a decision to hold or sell.*
> –Todd Dubner, Principal, KPMG in the U.S.

Autonomous vehicles are likely to enter the market in the coming decade in the form of ride-hailing or delivery cars and vans. A majority of automotive executives predict that they will be available within major cities in the U.S., China, Japan, and Western Europe by 2030.

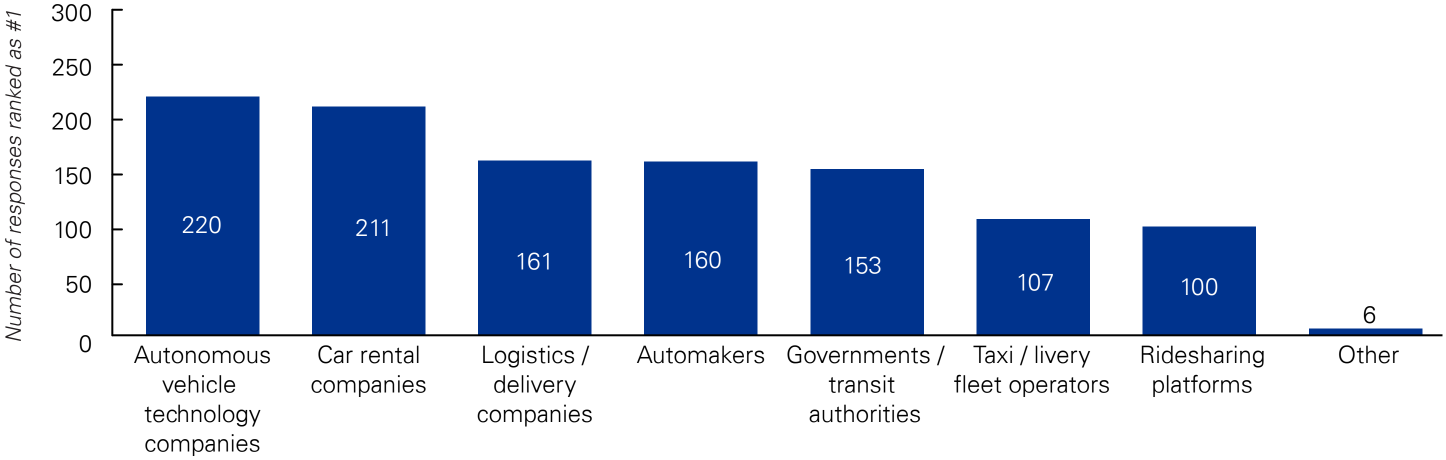
When do you believe autonomous ride hailing and / or delivery will be commercially available within major cities in the following markets?



Source: GAES 2021, KPMG International

However, executives have differing views on what type of companies are most likely to operate these fleets. While AV tech companies were the most common answer, automakers, car rental companies, logistics / delivery companies, and public transit authorities all received a significant number of responses. This appears to be a market that is wide open.

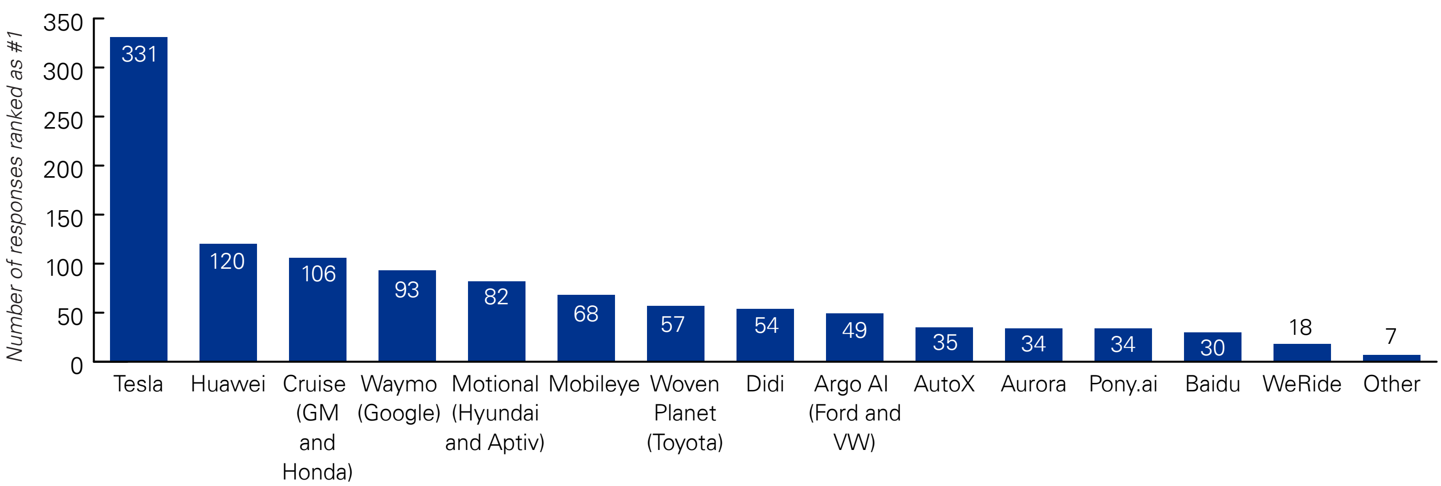
Who do you believe will own / operate autonomous mobility-as-a-service fleets?



Source: GAES 2021, KPMG International

When asked which company will lead in autonomous vehicles, Tesla is viewed as the leader and Huawei is second, but the picture varies by geographical area.

Which company do you think will be the leader in autonomous vehicle solutions?



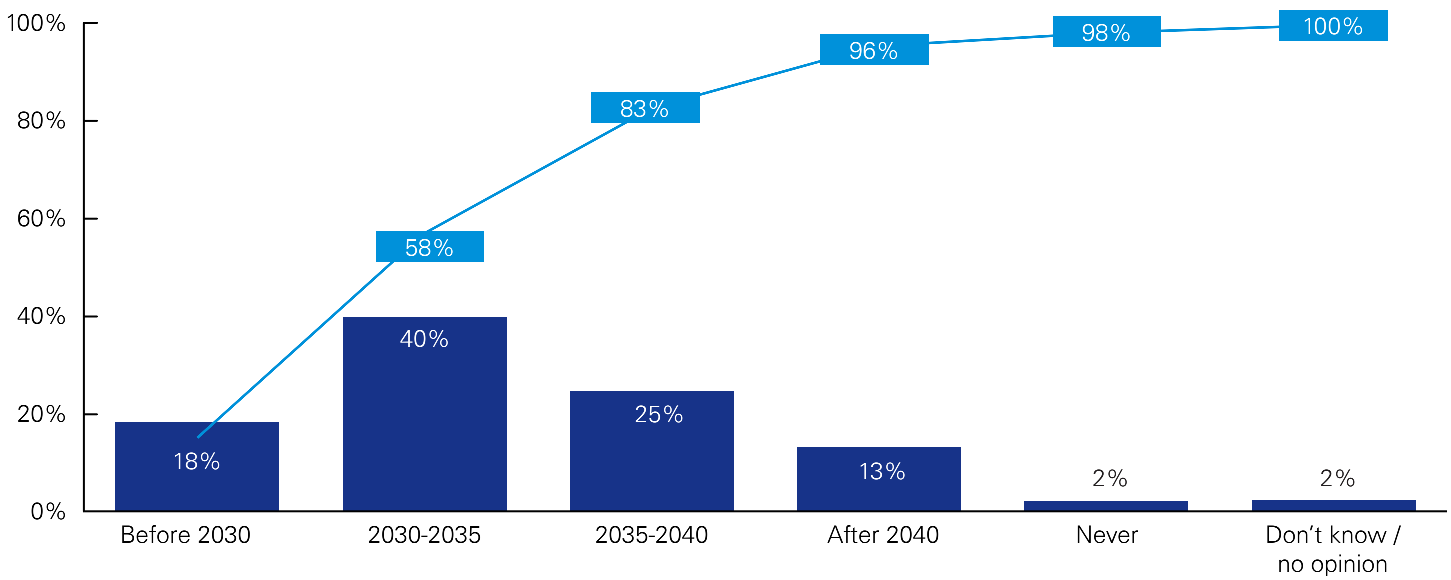
Source: GAES 2021, KPMG International

Ranking by respondent location

Rank	All Respondents	U.S.	China	Europe	Japan
1	**Tesla**	Tesla	Huawei	Tesla	Waymo (Google)
2	**Huawei**	Cruise (GM and Honda)	Tie: Tesla, Cruise (GM and Honda)	Waymo (Google)	Tesla
3	**Cruise (GM and Honda)**	Woven Planet (Toyota)		Huawei	Woven Planet (Toyota)

The survey did not focus solely on terrestrial vehicles. Flying cars, known as electrical vertical takeoff and landing aircraft, have received significant investments by automakers and start-ups. More than half (58 percent) of executives expect they will be available in most major cities by 2035.

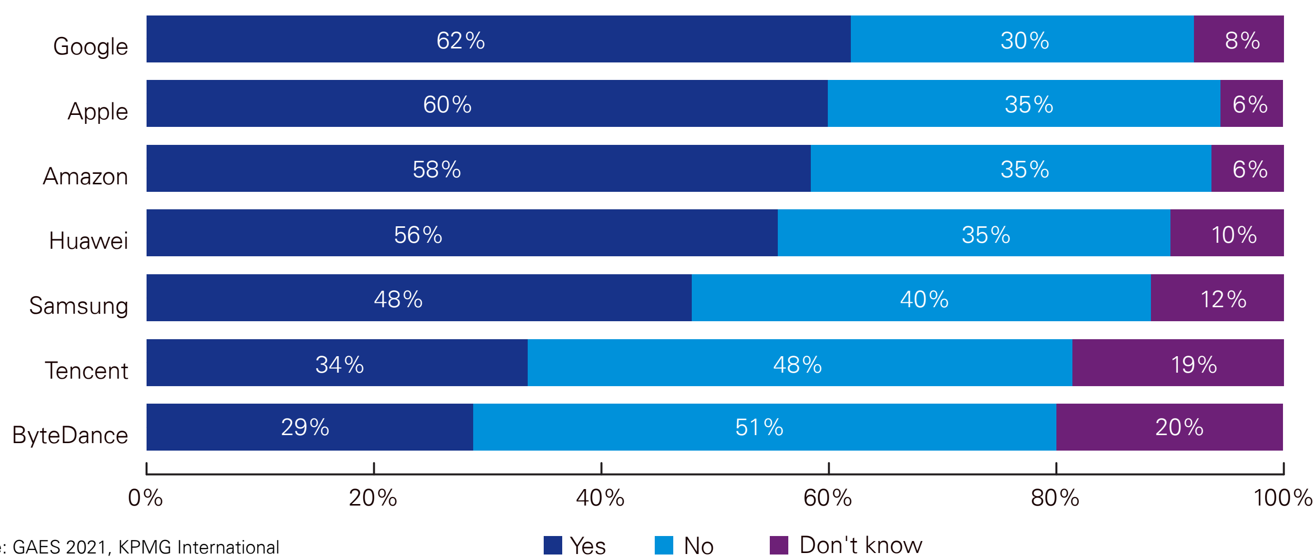
Flying cars, known as electric vertical takeoff and landing aircraft (eVTOLs), have received significant investments by many automakers. When, if ever, do you believe eVTOLS will be available in most major cities?



Source: GAES 2021, KPMG International

There has been much discussion about tech giants entering the auto industry. A majority of executives in the survey expect Google, Apple, Amazon and Huawei to enter the car market.

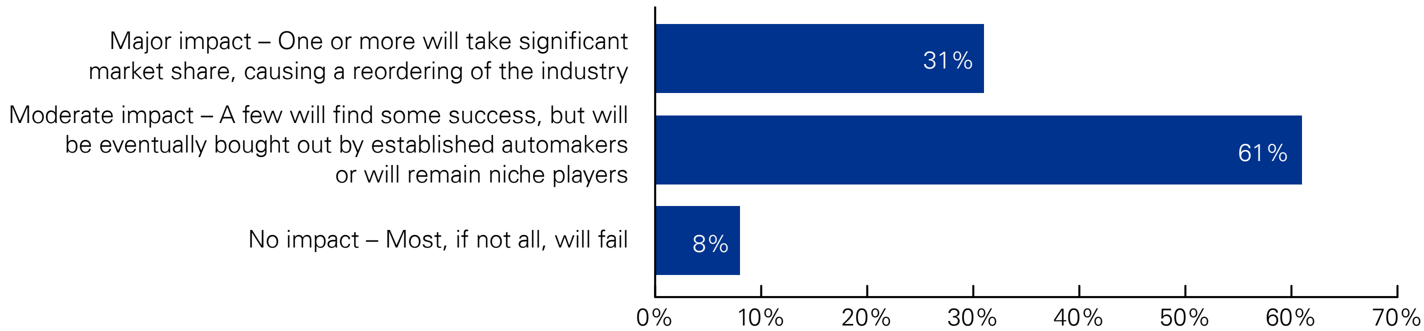
Do you think the following major technology companies will enter the auto market with their own branded vehicles?



Source: GAES 2021, KPMG International

Well-capitalized start-ups are continuing to enter the auto market. When asked how they will affect the industry, 61 percent say start-ups will have a moderate impact in the next 10 years; 31 percent say they'll have a major impact. The start-ups themselves are cautiously optimistic. Seventy-three percent of mobility start-ups say they will make a moderate impact and only 20 percent say the impact will be significant.

In the last several years, there has been significant investment in auto start-ups. In the next 10 years, what do you think the impact of these companies will be?

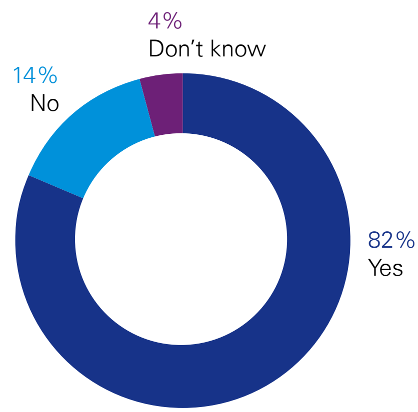


Source: GAES 2021, KPMG International

> *Many new entrants fail to capture sufficient funding or market share to ensure survival, as the overall vehicle sales in China have peaked. However, the leading new EV companies will have a major impact on the industry overall, while some of the current OEMs will perish if they fail to innovate beyond the powertrain. As a result the overall landscape of auto brands may look quite different in five years, as the transformation to a smart mobility environment continues.*
> – Norbert Meyring, Partner, KPMG in China

New entrants are taking a fresh approach to the value chain. For example, some new automakers are using third parties to manufacture their vehicles. Eighty-two percent of respondents overall believe these entrants will make a success of contract manufacturing.

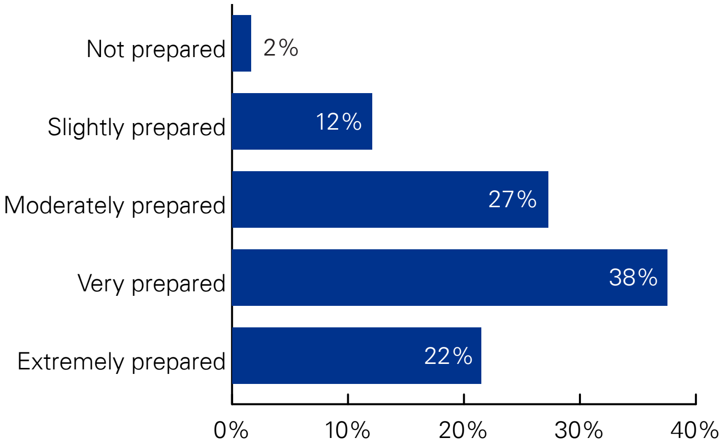
Many new automakers are pursuing "asset-light" strategies using third parties to manufacture their vehicle. Do you believe automakers can succeed using contract manufacturing?



Source: GAES 2021, KPMG International

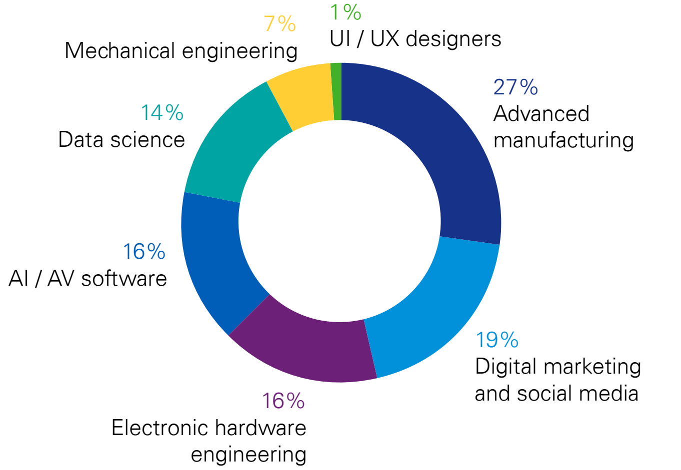
Advanced manufacturing is a critical capability for most automakers, and they emphasize the importance of hiring skilled workers in advanced manufacturing. Sixty percent of industry executives say they are very or extremely well prepared for Industry 4.0 technologies, such as artificial intelligence.

How prepared is your company for Industry 4.0 technologies?



Source: GAES 2021, KPMG International

Which of the following jobs / skills do you believe is the most important to your business in the next several years?



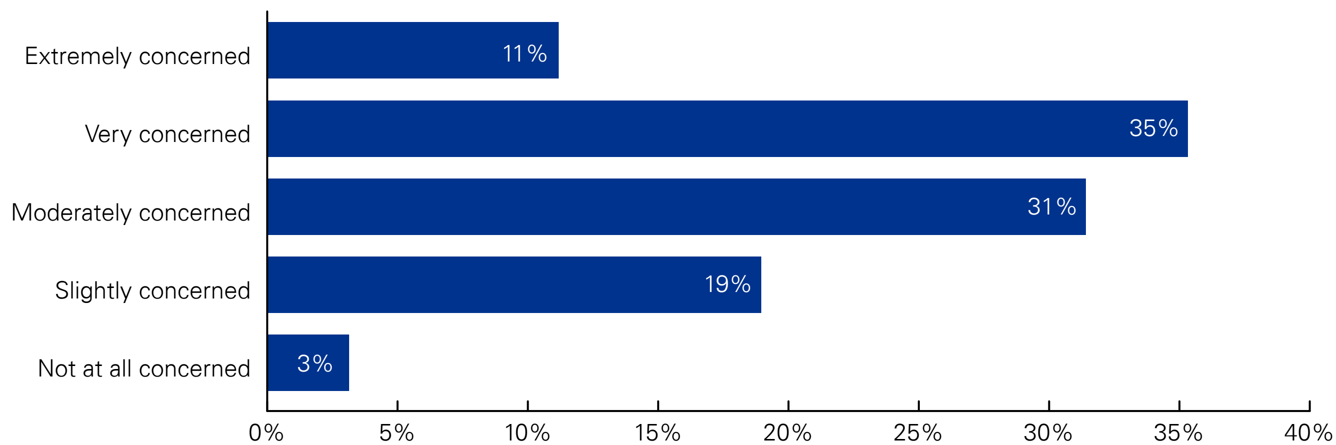
> *Advanced manufacturing that leverages machine learning and other forms of AI will create competitive advantages from an output and quality perspective.*
> – Fabrizio Ricci, Partner, KPMG in Italy

Vulnerable supply chains

The area of greatest anxiety for executives is the supply chain. They expressed high levels of concern about the near-term availability and price of both commodities and labor. This worry can be seen in answers to the following four questions:

Almost half (46 percent) are very or extremely concerned about the impact of the recent commodity-price volatility on their business in the next year.

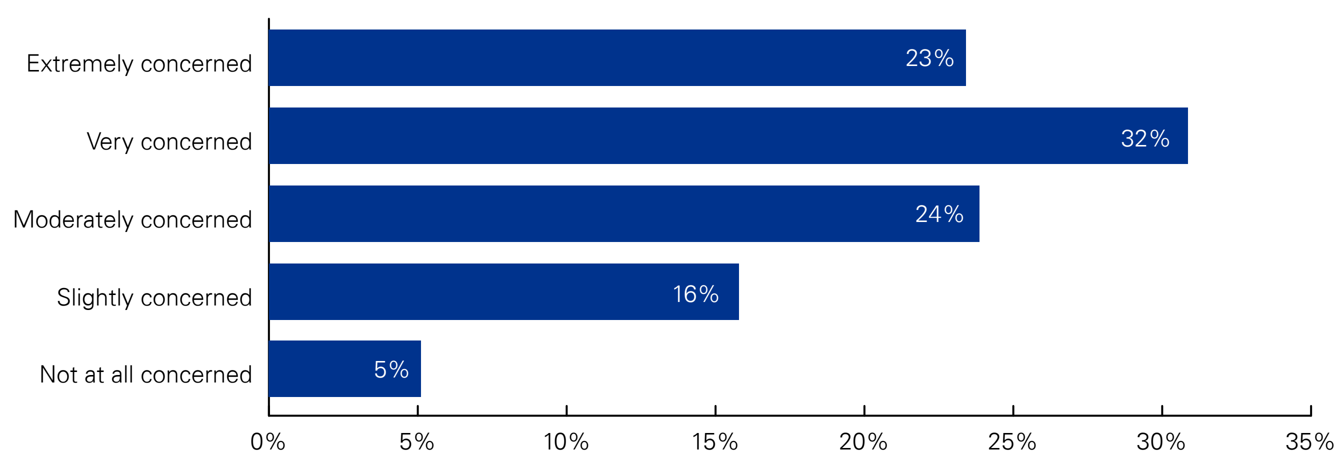
How concerned are you that the recent volatility in commodity prices will adversely impact your business in the next 12 months?



Source: GAES 2021, KPMG International

Fifty-five percent of executives are very or extremely concerned about labor shortages. In the U.S., they are even more concerned, comprising more than 70 percent of the sample. This is consistent with data from the U.S. Bureau of Labor Statistics that suggests there were over half a million unfilled job openings in U.S. durable goods manufacturing in September 2021.[2]

How concerned are you that labor shortages or wage increases will adversely impact your business in the next 12 months?



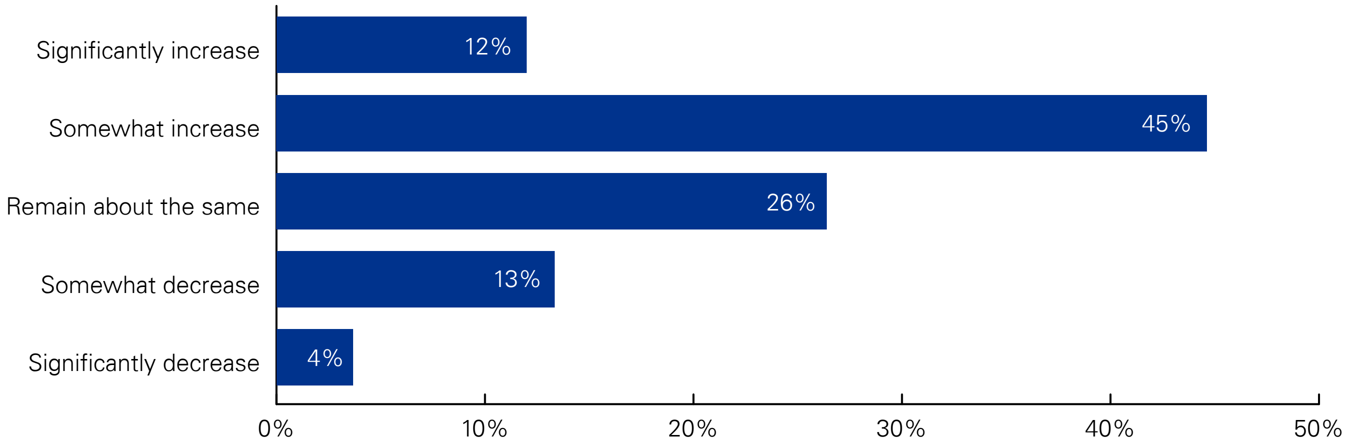
Source: GAES 2021, KPMG International

[2] Source: U.S. BLS

> *Companies are going to extraordinary lengths to recruit and retain talent. Some companies are thinking outside the box and leveraging the kind of analytics that have traditionally been used in consumer marketing.*
> – James Walker, Principal, KPMG in U.S.

Executives are also concerned about the regulatory environment for trade. Fifty-seven percent say the cost and complexity of trade rules and tariffs will increase over the next five years.

Do you believe the cost and complexity of tariffs, trade rules, and regulations will increase in the next five years?

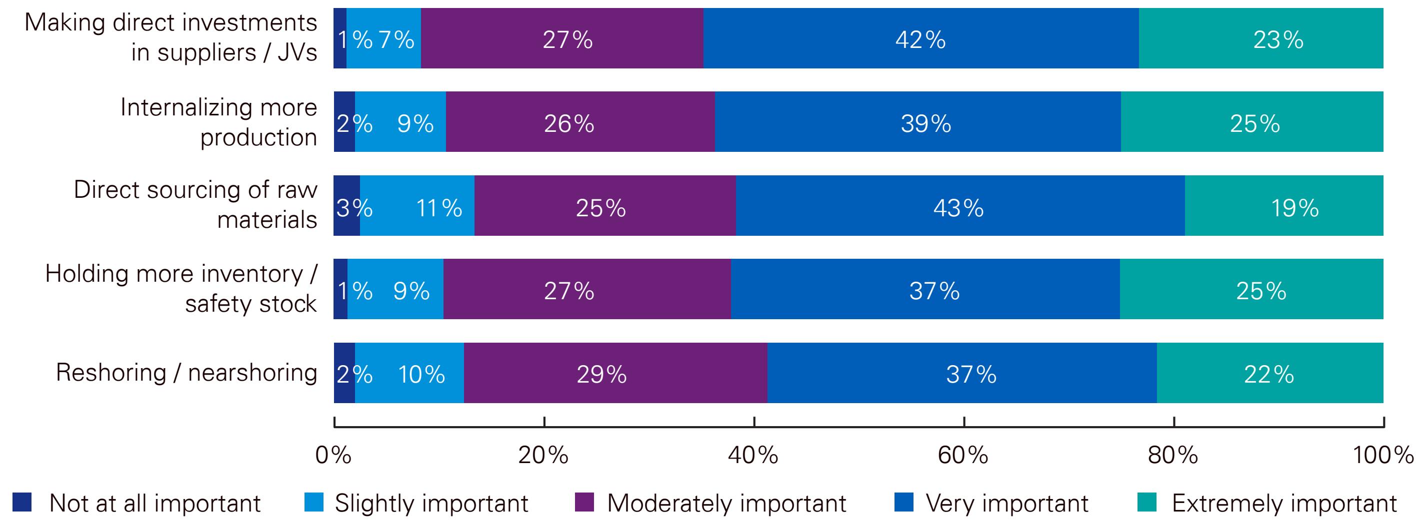


Source: GAES 2021, KPMG International

> *Companies need to carefully consider any changes in tax laws as they redesign their value chains. The transition to new business models will also create further tax complexity for automakers.*
> – Flavia Spadafora, Partner, KPMG in Brazil

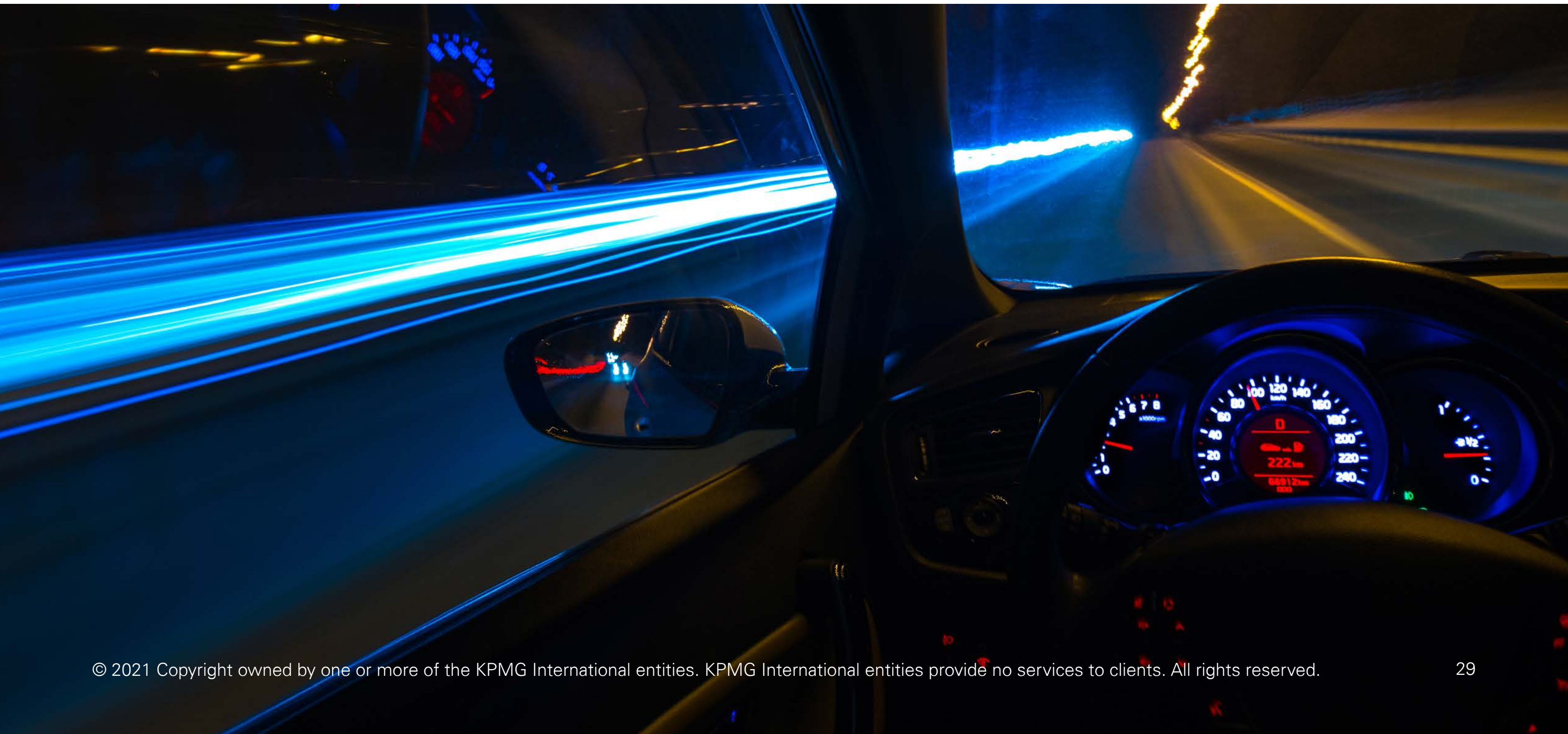
Most auto executives say they aim to exert more control of the supply chain. Almost two-thirds say it is very or extremely important to make direct investments in suppliers.

How important are each of the following to your future supply chain strategy?



Source: GAES 2021, KPMG International

> *Given the fact that automakers are competing against high-demand industry sectors like consumer electronics for limited semiconductor fab capacity, a new supplier or even joint venture approach is required to protect future production.*
> – Goran Mazar, Partner, KPMG in Germany



Conclusion

Rarely has the automotive sector faced such an array of opportunities and challenges, as the survey shows. Executives predict big changes ahead—new powertrains, relationships with consumers, modes of ownership, manufacturing processes, technologies, and data flows. The next decade is slated to see business model innovation on a global scale. But their existing capabilities are not going to be enough to see them through. They should prepare to be stretched as never before. Here are four implications of our survey to consider:

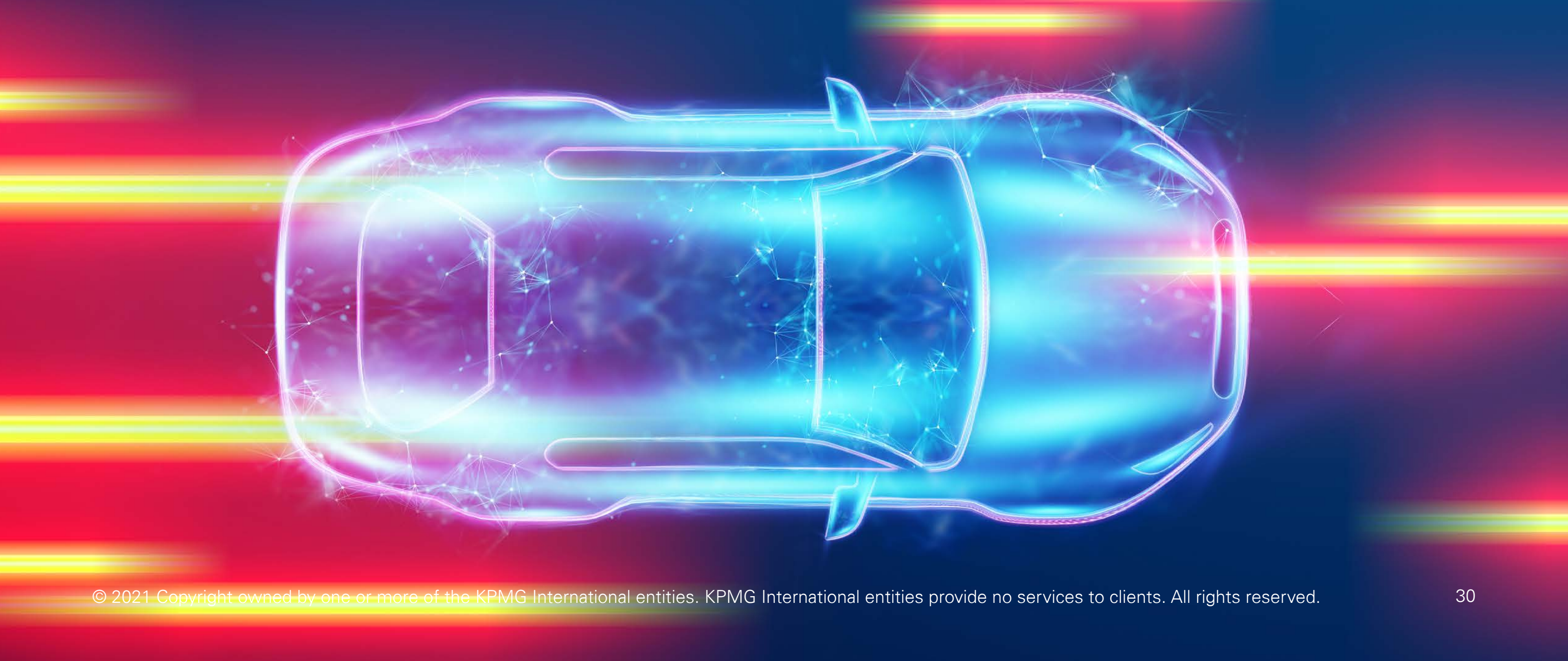
Prepare for the unexpected
It is clear there are many "known unknowns," but executives should plan for an even wider range of scenarios. There are many strategic questions that need to be asked. How quickly will EVs be adopted? When will autonomous vehicles become ubiquitous? What level of in-vehicle computing power will be required? Will consumers really pay for subscriptions? Leaders must test every assumption, challenge long-held beliefs and develop a culture that rewards this type of thinking.

You can't do it alone
To succeed, companies will need to develop skills outside their current competencies—from software development and software as a service, to artificial intelligence/deep learning algorithms, to customer analytics and massive, new data sets. Some of these capabilities can be developed organically, but others will need to be obtained through alliances, joint ventures and acquisitions.

All about the customer
The auto industry has for too long been distanced from its customers. No more. Digitization offers automakers the opportunity to build direct customer relationships that are deep, long-lasting, and mutually beneficial. Success will likely depend on creating a seamless, yearslong customer experience based on personalization, efficiency and trust, especially over data stewardship.

Speed is of the essence
If executives think events are moving at a breakneck pace, they can expect the Clockspeed of change will go even faster in the coming years. The evolution of the automotive industry is rapidly accelerating, and the winners are likely to be those companies that make better decisions faster than their competitors.

You can be sure that the executives who responded to our survey will be among those shaping the industry over the next decade. The future is in their hands.

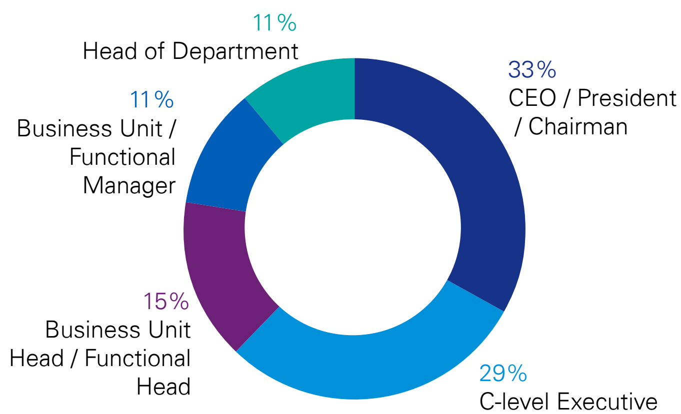


Respondent profile

KPMG conducted a global survey of 1,118 executives across the automotive and adjacent industries in August 2021. Almost 372 were CEOs, 325 were other C-level executives, and the rest were heads of business units and departments, as well as 252 managers. Twenty-four percent work for car manufacturers and 13 percent for Tier 1 suppliers. Eleven percent are employed by truck manufacturers. Twenty-seven percent consist of companies with annual revenues of more than $10 billion in 2020, 35 percent have annual revenues of between $1 billion and $10 billion, and 38 percent have revenues less than $1 billion.

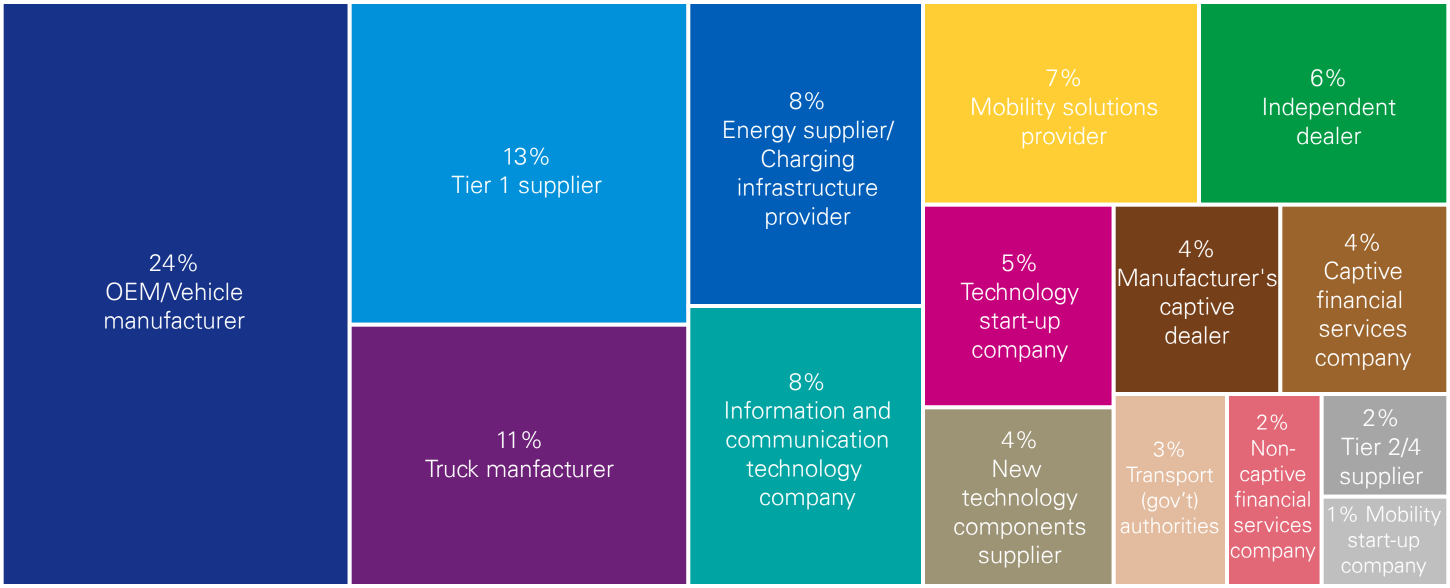
The two countries with the largest number of respondents are China (26 percent) and the U.S. (25 percent). Europe has 25 percent of respondents, with the remainder living in Japan, South Korea, India, Canada, Latin America, Saudi Arabia and South Africa.

Which of the following best describes your job title?



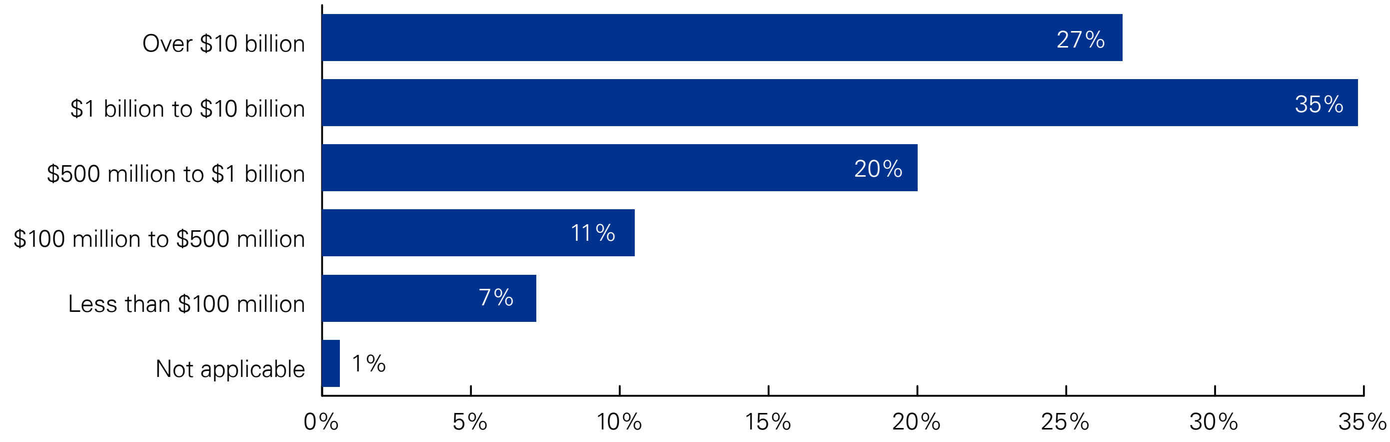
Source: GAES 2021, KPMG International

Which of the following best describes your company?



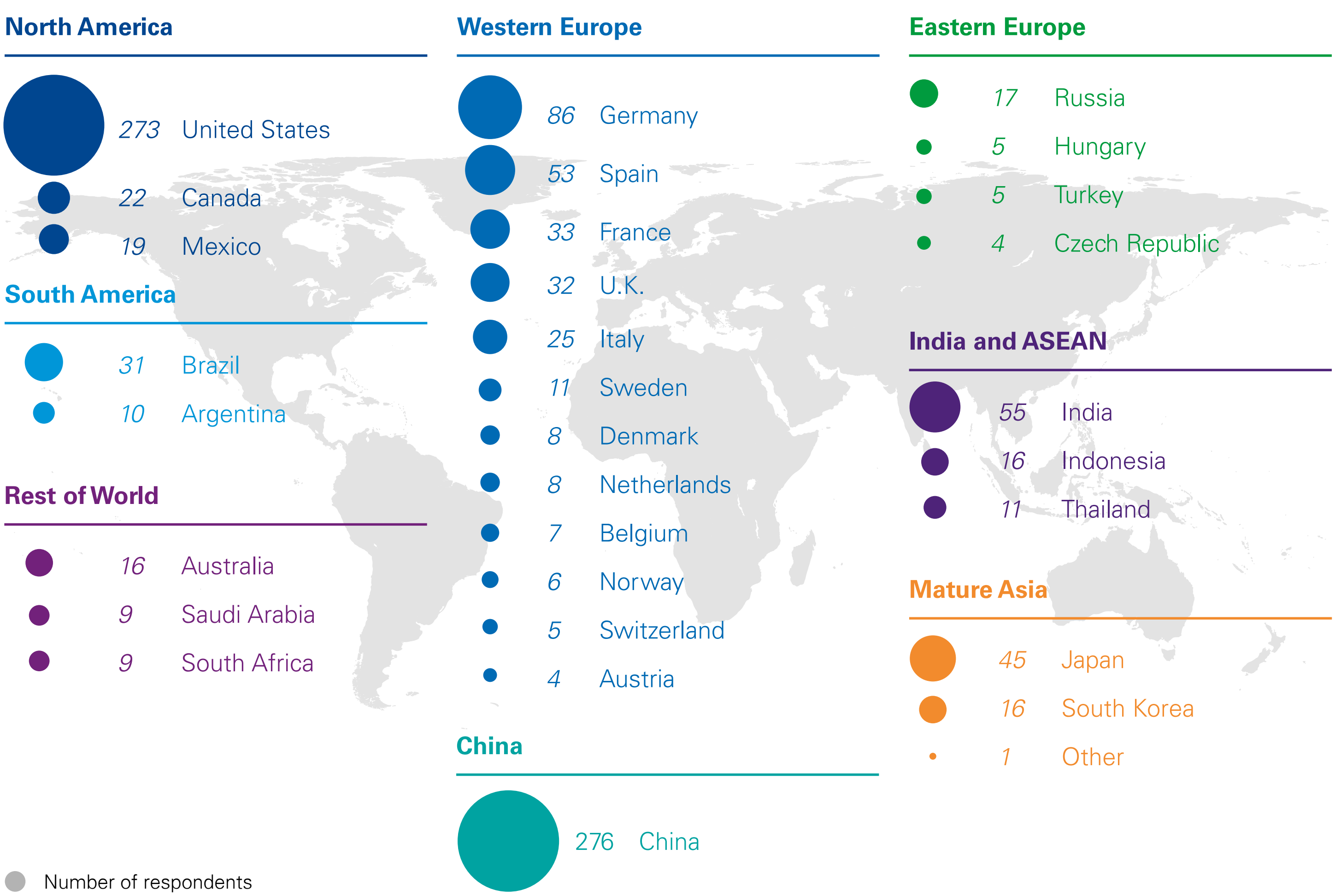
Source: GAES 2021, KPMG International

Which of the following best describes your company's annual revenues in 2020?



Source: GAES 2021, KPMG International

In what country, territory, or jurisdiction do you live?



For mer informasjon, kontakt oss:

KPMG Norge

John Thomas Sørhaug
Partner
Head of Automotive Norge
KPMG AS

Andreas Loga
Director
Automotive Norge
KPMG AS

MADE | MDE139734 | December 2021

Publication name: Industry leaders foresee dramatic changes

Publication date: December 2021