



AUTOMOTIVE – A SHIFTING LANDSCAPE

The acceleration of trends and impact of COVID-19 are shaping future OEM business models.

DHL Supply Chain

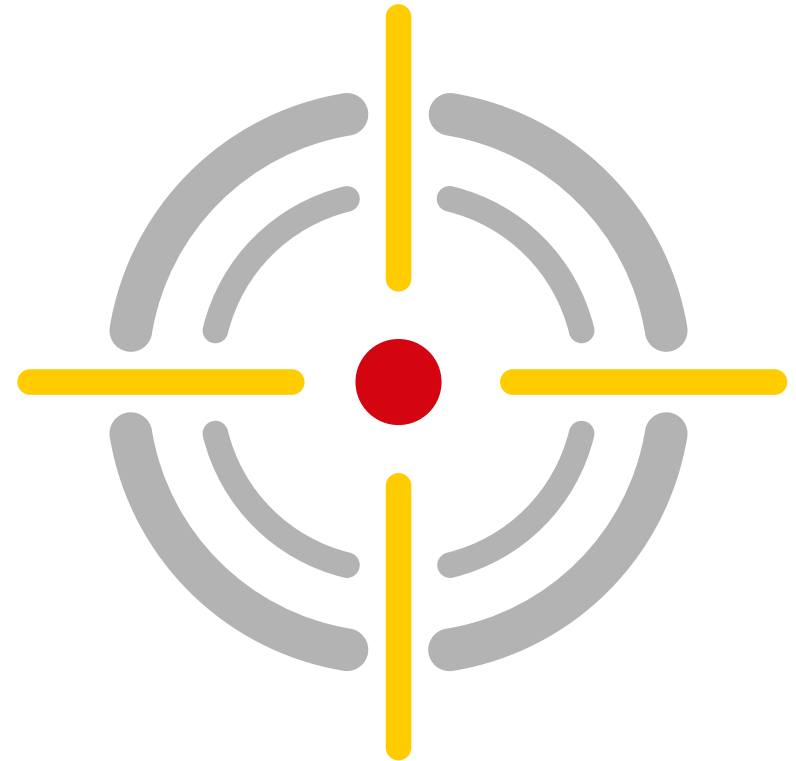


WHAT DOES THIS REPORT FOCUS ON?

Automotive Trends 2021 is a study of the evolving industry and market. It employs a wealth of sourced and referenced material that outlines OEMs' strategic direction in response to trends and the impact of COVID-19. In its pages, we outline the current drivers that are shaping OEMs' supply chains, including:

- > Challenges and future opportunities as unprecedented factors begin to settle or become the norm in this time of sector turbulence
- > How OEMs can benefit from the new trends that will shape future business models
- > An assessment of market dynamics and, in turn, the implications for the Automotive sector

We conclude by looking at the customized and agile supply chain solutions necessary for this shifting landscape – and how DHL Supply Chain solutions help Automotive customers adapt their supply chains to navigate the challenges and harness future opportunities.



A photograph of three men standing in an automotive factory. The man on the left is wearing a grey suit and glasses, holding a yellow folder. The man in the middle is wearing a yellow and red jacket and glasses. The man on the right is wearing a dark sweater and glasses. They are all looking at each other and talking. In the background, there are several white car chassis on an assembly line. The floor is polished and reflective. The ceiling has various pipes and lights.

PART 1:
**AUTOMOTIVE SECTOR
CHALLENGES &
OPPORTUNITIES**

THE OUTLOOK FOR THE AUTOMOTIVE SECTOR IS MORE AGILE, OPPORTUNISTIC AND CUSTOMER-CENTRIC

The automotive industry is experiencing gamechanging trends with the explosion of new technologies, rising customer expectations and sustainability policies. Meanwhile, the new era of industrialized manufacturing (4.0) is also revolutionizing the automotive sector globally. Today, the industry is exponentially moving towards emission-free mobility by making the transition to electrification, while COVID-19 is shaping future swings and distorting past predictions.

Localization will be a major disrupter beyond 2025 and new initiatives are presenting new challenges ahead.¹

OEMs are investing in disruptive technologies such as artificial intelligence, deep neural networks and big data, among others for autonomous vehicles. But the automotive sector is shifting, and will require new strategies for the survival of manufacturing.

As vehicles become more connected by the internet of things, technological trends are enabling inventive manufacturers to offer consumers much more than just a vehicle.²

¹ McKinsey 2019b

² Industry wired 2020

AUTOMOTIVE – AN ESSENTIAL GLOBAL INDUSTRY

The Automotive industry is indispensable to the global economy and resulting prosperity.

27 million employees globally (14mn in Europe; 8mn in US; 5mn China)³

1.1mn of a total 2.6mn direct automotive manufacturing jobs were affected by plant closures in the EU in March 2020²

The Automotive industry's turnover exceeds **7%** of EU GDP and **3 – 3.5%** of the overall GDP in the US and **10%** in China³

Linking industry with extensive interconnections to **upstream** (e.g. steel, chemicals, textiles) and **downstream** industries (e.g. repair, mobility services)⁴

High dependency on China due to global supply chain networks; shutdown directly affected almost **2/3** of Chinese automotive production³

³ Accenture 2020

⁴ International labour organization 2020

Forecast **trends** suggest that autonomous and shared mobility will increase significantly by **2030**. New car sales may rise by **30%** in the US, China and Europe. It's widely predicted that around **55%** of all new car sales in Europe will be of EVs by **2030**.⁵

⁵ PwC 2020b



THE AUTOMOTIVE INDUSTRY IS SHIFTING EXPONENTIALLY – ARE YOU READY?



Independent regional strategies are key

Increased localization themes accelerated by COVID-19⁶



The age of data supremacy

OEMs are migrating to a more service- and customer-oriented model⁷



One global market is diminishing

New non-asset players will increase until 2025⁶



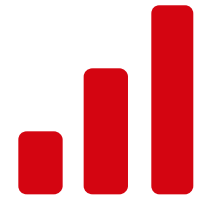
Consumer behaviors are influencing market dynamics

Digital experience will demand flexible low-cost offerings due to consumer uncertainty⁶



Vehicle production scheduling is volatile

By 2030, 5% less production is predicted in western Europe⁶



Mega trends are evolving with new potential and industry readiness

M&A will stimulate shared networks to consolidate cost and redefine product offerings⁶

⁶ KPMG 2020

⁷ Frost & Sullivan 2020b

WHAT ARE THE KEY CHALLENGES?

IMPLICATIONS FOR THE GLOBAL AUTOMOTIVE INDUSTRY

- Risk of broad retreat from globalization – NORAM, Mexico, China, Brexit, Eurozone
- COVID-19-related decline or evolved value propositions
- Increased risk of new disruptive business models impacting forecasts⁸
- Risk of longer-term planning volatilities and uncertainties hurt long-term planning
- Counter-synchronization of automotive sales cycles across world regions continues, with emerging markets and developed markets on opposite waves; wave amplitude likely to dissipate in time⁹

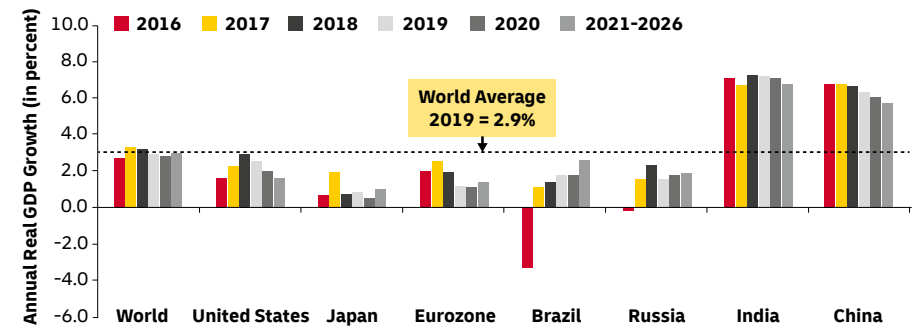
⁸ McKinsey 2020c

⁹ IHS Markit 2016

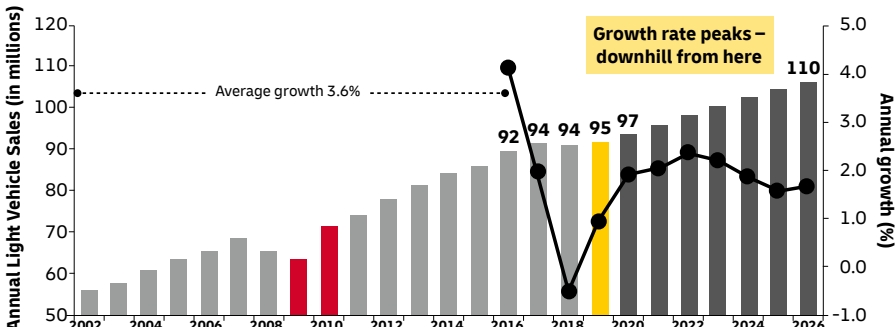


GLOBAL ECONOMIC GROWTH HAS PEAKED AND IS VULNERABLE...TRADE TENSIONS WEIGH ON SECTOR OUTLOOK

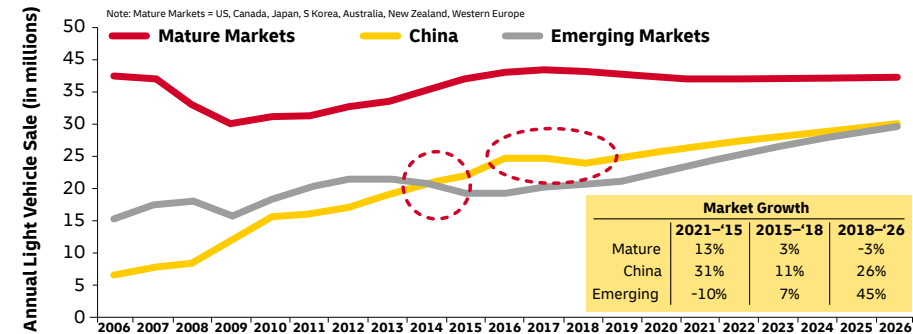
GLOBAL ECONOMIC GROWTH HAS PEAKED AND IS VULNERABLE¹⁰



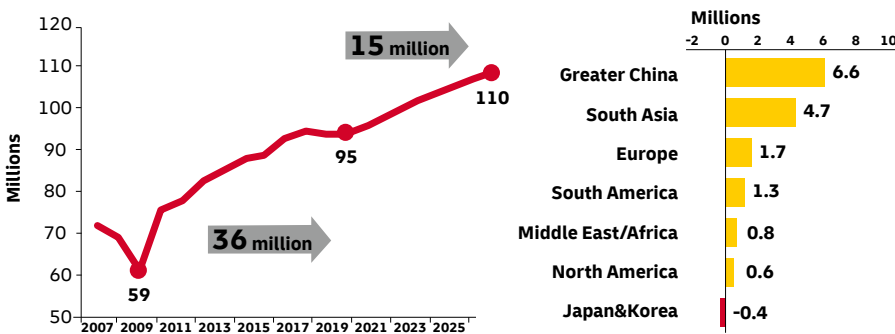
VOLATILITY IMPACTS THE NEAR TERM OUTLOOK- DRIVING SLOWER GROWTH LONG TERM¹⁰



EMERGING MARKETS OUTLOOK IS KEY TO GROWTH; LIMITED POT. IN MATURE MARKETS¹⁰



TRANSITION FROM MATURE MARKETS TO EMERGING MARKETS INTENSIFIES IN THE LONGER TERM¹⁰



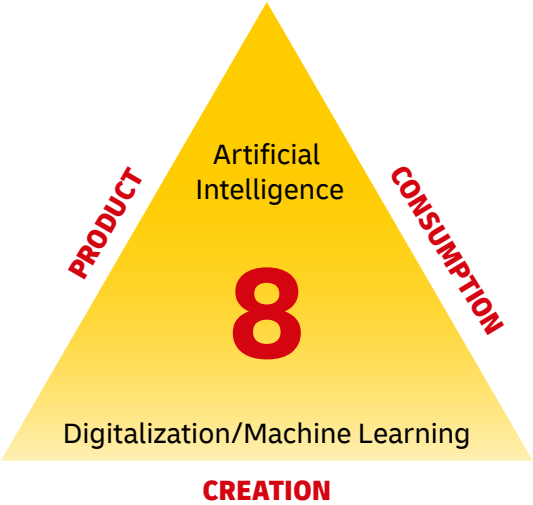
¹⁰ Gentex 2019

PART 2:

WHAT ARE THE CURRENT DRIVERS THAT ARE SHAPING OEM SUPPLY CHAINS?

THE BIG EIGHT AUTOMOTIVE INDUSTRY TRENDS TO 2030

AUTOMOTIVE CONSULTANTS OLIVER WYMAN HIGHLIGHT EIGHT MAJOR INDUSTRY TRENDS:



Connected vehicles

Additional safety and (services) revenues through growing connectivity

Rise of automation

Progression of today's partially automated driving into fully driver-less

E-Mobility

Growing electrification of powertrains, resulting in decreasing penetration of internal combustion engines

4.0

Increasing digitalization of processes through predictive and adaptive data solutions

New distribution channel pay-per-use

Provision of selected vehicle features as pay-per-use for certain target groups of vehicle

Human-Machine Interface

New and digitalized control concepts for driver/vehicle interaction

Changing customer landscape

Fragmented replacement of individual vehicle buyers by large fleet or group buyers, driven by mobility-on-demand services

Sustainability

Accelerated focus on sustainable and green supply chains

COVID-19 is hitting the industry just as we're seeing a **transition from the old traditional value tools and profit pools** into completely new ones. As such, the **pandemic will act as both an accelerator and a stress test for existing trends and future business models.**¹¹

¹¹ McKinsey 2020c



HOW THE PANDEMIC WILL SPEED UP SOME TRENDS AND STALL OTHERS¹²

- The coronavirus outbreak has the potential to reshape the auto industry in ways that go far beyond the short-term effects on sales and production.
- As OEMs are affected under the load of fixed costs with little or no revenue, investments in future trends such as self-driving cars have been trimmed or refocused. In some regions car ownership is increasing as consumers are more concerned with personal welfare and shared services like public transport have seen significant downturns.¹²
- Online sales, once seen as a niche that would never replace the dealership experience, may be getting a second wind. Projects and capital expenditures that aren't contributing to the immediate bottom line have been delayed.¹²
- On a broader level, some of the industry's deepest-held beliefs about globalization and supply chains are being put under pressure by the pandemic. Consolidations and collaborations are taking on a new urgency, and the shift toward electrification might accelerate further.

STATISTICS MARCH-AUGUST 2020

14% Reduction in planned vehicle production starts¹²

54% Estimated global capacity utilization rate in 2021, down from 62%^{13, 14}

75% Potential car buyers who say hygiene is an important consideration¹²

12.5% Loss in productivity per shift because of increased hygiene measures at plants¹²

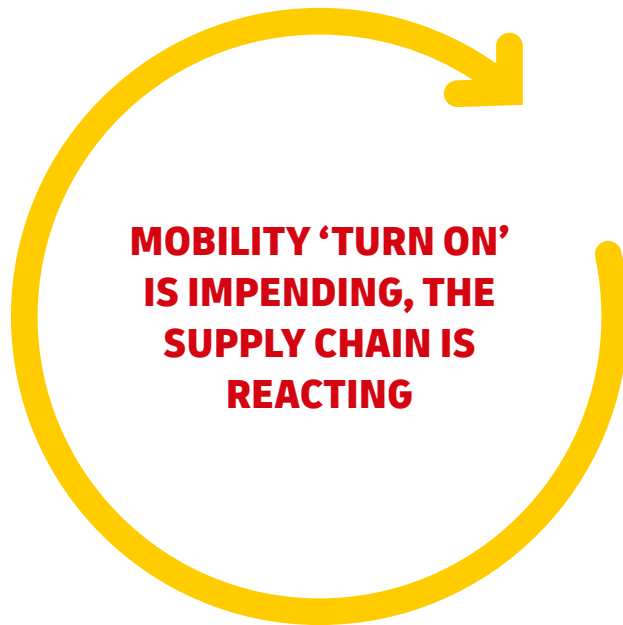
20–25% Predicted decline in 2020 global vehicle sales to 70 million^{12, 14}

¹² Automotive News Europe 2020

¹³ IHS Markit 2016

¹⁴ Capgemini research Institute 2020

MOBILITY FACTOR DYNAMICS SET TO NAVIGATE OEM SUCCESS



- Changing retail models¹⁵
- Electric vehicle age – infrastructure design, governmental forces and battery management¹⁷
- Software supplier and raw material landscapes
- E-Commerce fulfillment and distribution¹⁶
- Asset visibility, fleet and leasing¹⁶
- Independent aftermarket impact¹⁵
- By 2030, new mobility models are expected to account for 17-28% of global vehicle-based mobility¹⁸

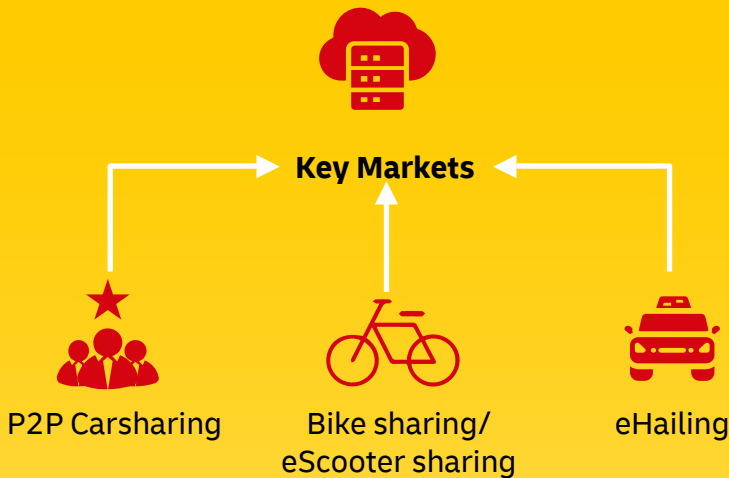
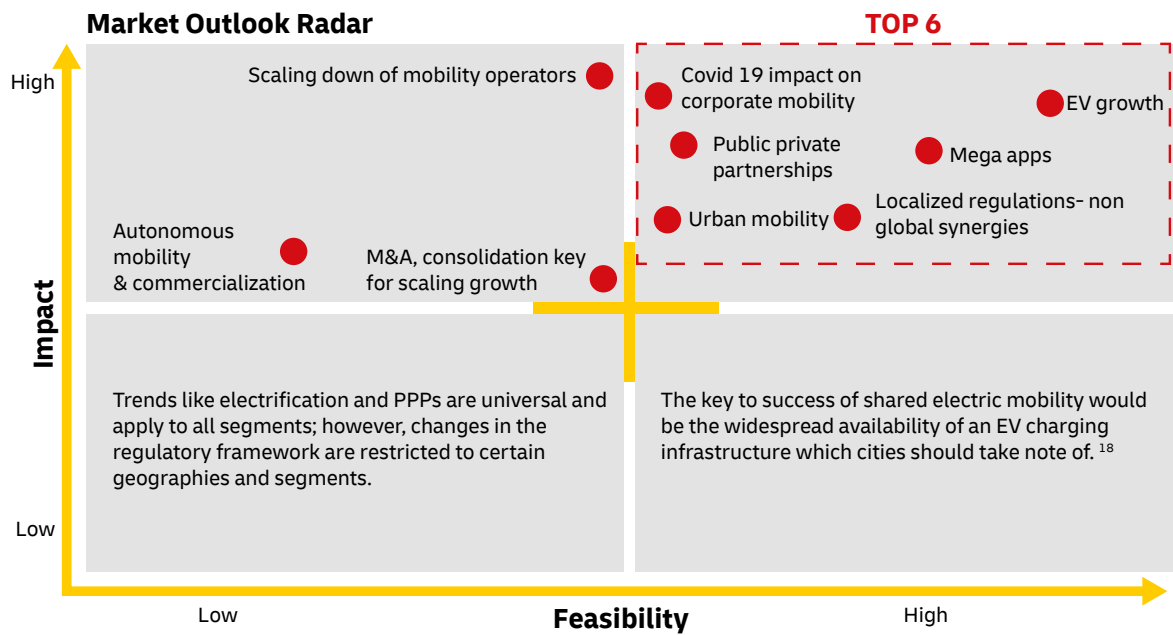
¹⁵ Strategy& 2019

¹⁶ Deloitte 2020a

¹⁷ Strategy& 2020b

¹⁸ PWC 2020c

SIZING THE POTENTIAL UPTAKE OF NEW MOBILITY SERVICES – WHERE TO PLAY!¹⁹



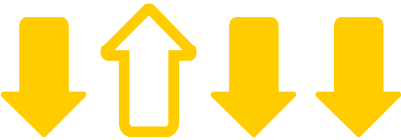
- DHL Supply Chain predicts more EV-only shared mobility program launches in 2020 as it improves profitability through lower maintenance costs for EVs (~ by 50%)
- Helps cities reach their zero emission goals

¹⁹ McKinsey 2019

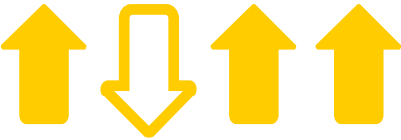
A photograph of a modern car manufacturing plant. In the foreground, a silver sedan is positioned on a conveyor belt, facing the viewer. The car's headlights are on, and its body reflects the bright overhead lights of the factory. In the background, another car is visible, and a worker in a white lab coat is standing near it, possibly inspecting or working on it. The factory floor is made of metal grates, and the ceiling is high with numerous industrial lights.

PART 3:
**WHY OEMS NEED
CUSTOMIZED, AGILE SUPPLY
CHAIN SOLUTIONS IN THIS
SHIFTING LANDSCAPE**

CHANGING CUSTOMER REQUIREMENTS WILL LEAD TO A RETHINKING OF SERVICES

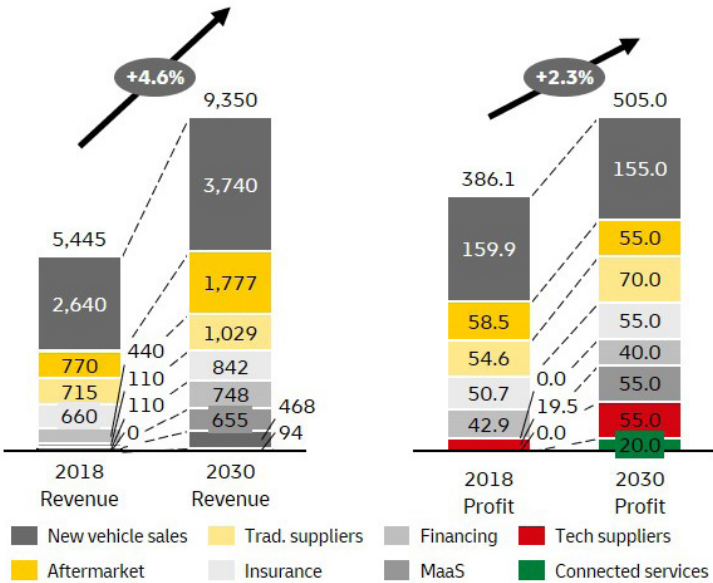


**DIFFERENTIATION
OF OEMS AND
SUPPLIERS IS
GETTING MORE AND
MORE BLURRED²³**



- Refocus on core solutions and selling models/channels²²
- Adoption of new role as partner for technology companies, suppliers and customer ²²
- New role as mobility (service) provider²¹
- Shifting production capacity and establishing partnerships for EV production
- New target customers and marketplaces require higher personalization²⁴

REVENUE & PROFIT DISTRIBUTION IN \$BN¹⁹ AND RELATED CAGR²¹



²⁰ assumptions

²¹ Strategy& 2020a

²² Strategy& 2019

²³ Frost & Sullivan 2020b

²⁴ McKinsey 2013

CONNECTED FUTURE, LEVERAGING FLEXIBLE SOLUTIONS



- Shared distribution
- Export packaging
- Vehicle features as a service²⁵
- R&D partnerships²⁵
- Co-integration services
- Sustainability assessment
- Increased OEM alliances for new market entry penetration
- Reused and spare parts for new product development (“Design to dismantle”)²⁶

²⁵ Strategy& 2019

²⁶ Frost & Sullivan 2020b

MORE REGIONAL, AGILE AND CONNECTED SUPPLY CHAINS



- Big Data – connected confidence²⁷
- Investments in hygiene requirements, automation and ways of working to match new necessities²⁸
- Restructure of landscape – reduced number of players
- Change of powertrain ecosystem
- Visibility & Integration – resilient supply chains, process enhancements
- Re-design of regional supply chains: near sourcing vs. higher inventory

With a diminishing contribution from mature markets, a slowdown in the Automotive industry was already taking place before the pandemic. OEMs are looking at flexible strategies.

²⁷ KPMG 2020

²⁸ Frost & Sullivan 2020b

COMPLEX AND FRAGMENTED CUSTOMER JOURNEY WITH STRONG INFLUENCE FROM SOCIAL MEDIA CHANNELS



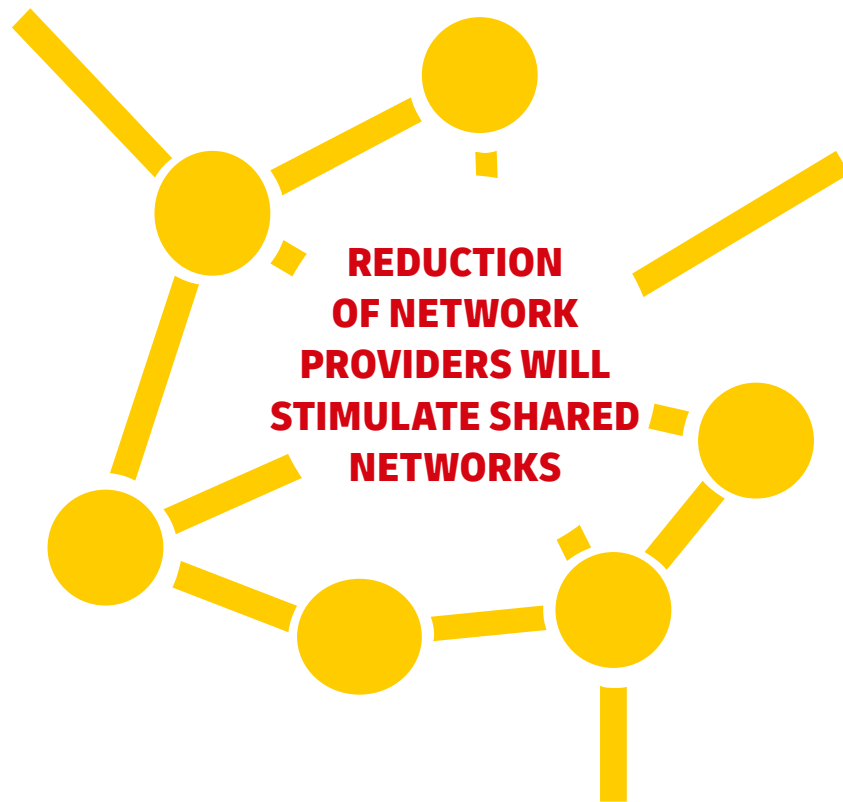
- 4G Telematics control units will be installed on ~90% of passenger vehicles by 2025²⁹
- New market players offer more transparent and convenient sales processes³¹
- Car as a marketplace – online ordering from the car³⁰
- VR/AR technology for customer interaction and sales²⁹
- Increase in connected technologies and platforms³⁰
- Technological adaption will be supported by government regulations

²⁹ Strategy& 2019

³⁰ Frost & Sullivan 2020a

³¹ Gartner 2019

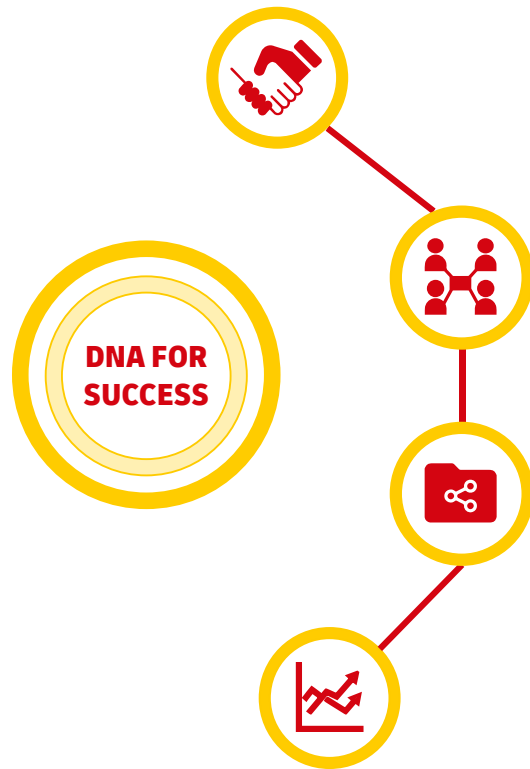
INCREASED COLLABORATION WITHIN OEM NETWORK



- Shared distribution to reduce costs
- R&D partnerships to focus on developing new ideas while outsourcing non-core solutions³²
- Compressed landscape – with a reduced number of market players
- Driving down technology costs by sharing technology investments³²

³² Strategy& 2019;

STRATEGIC IMPERATIVES FOR SUCCESS AND GROWTH



- Partnerships among OEMs, leasing companies, technology providers and new mobility service providers to expand existing business models and stable participation in the development of various mobility modes are crucial for success.³³
- Cities around the globe are dealing with issues like urbanization, pollution and congestion. The end-customer for the sector is moving away from individuals and businesses to governments and cities. Mobility operators should partner with cities to develop sustainable transportation solutions.³⁴
- Investments and partnerships such as PPPs, as well as investments from OEMs, are growing globally, indicating a rise in interest by stakeholders to tap the potential opportunities of shared mobility globally.
- Mobility will become more diverse, as more industries participate and disrupting trends like electrification, connectivity and autonomous driving continue to gain ground. Shared business models will evolve further, with a primary focus on developing an integrated and digitally connected ecosystem, which offers personalized user experiences.³³

³³ McKinsey 2019a

³⁴ Deloitte 2020c















IMPACTS ON LOGISTICS SERVICE PROVIDERS



- Provider of customization services e.g. setting up personalized technology³⁵
- Offering full lifecycle services for EVs
- Emission-saving solutions e.g. shared transport for OEMs
- D2C and installation transport solution (“mobility-on-demand services”)
- Higher and more flexible inventory to enable e-commerce
- Providing value-added services such as upcycling spare parts in the circular economy³⁵
- Flexible decentralized solutions and services to enable solid supply chain and faster delivery to customers

³⁵ Frost & Sullivan 2020b

DHL SUPPLY CHAIN SOLUTIONS FOR A SHIFTING LANDSCAPE

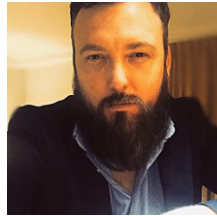
 Supply chain design	 Digital Retail	 Market landscape	 Mobility/Aftermarket	 Alternative fuels	 Finished Vehicles	 Sustainability solutions
<ul style="list-style-type: none">■ Near sourcing versus higher inventory■ Investments in hygiene requirements, automation and ways of working■ Increasing supply chain visibility & reliability■ Restructuring due to under-capacity■ Changing external criteria such as Incentives, national employment protection and Brexit	<ul style="list-style-type: none">■ Direct selling to customers to increase margins■ Consolidation of dealer networks■ Increased e-commerce due to COVID-19■ Acceptance of purchasing high value items	<ul style="list-style-type: none">■ Potential OEM Alliances■ Tier1 M&A and profitability improvements■ Reduction in R&D investments■ Lifecycle increased■ New players such as technology and life science & healthcare companies	<ul style="list-style-type: none">■ Mobility■ New leasing and mobility models (“Lental”)■ Urban mobility <p>Aftermarket</p> <ul style="list-style-type: none">■ Trend of splitting retail and service■ Health related accessories and services e.g. filter■ Trend towards remote and mobile services	<ul style="list-style-type: none">■ Ongoing trend of alternative fuels e.g. LNG, CNG, EV etc.■ EV battery logistics (aftermarket, inbound, damages, FV, recycling)	<ul style="list-style-type: none">■ Storing finished Vehicles■ Optimizing the supply chain■ Second hand vehicles■ Increasing visibility & reliability of finished goods’ inventory■ Scrappage schemes■ Finished vehicles logistics solutions, such as Inside Track and LLP network	<ul style="list-style-type: none">■ Warehouse solutions including lighting, MHE, cooling and heating■ Transport solutions including telematics, aerodynamics enhancement kit, eco tires, teardrop/ double deck trailer, E-vehicles■ Material, equipment and process-related packaging solutions
 DSC Products						
Warehouse Transport Value-added services						

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FOR FURTHER INFORMATION

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