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.
PART 1: AUTOMOTIVE SECTOR CHALLENGES & OPPORTUNITIES
THE OUTLOOK FOR THE AUTOMOTIVE SECTOR IS MORE AGILE, OPPORTUNISTIC AND CUSTOMER-CENTRIC

The automotive industry is experiencing game-changing 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)\(^3\)

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

1.1mn of a total 2.6mn direct automotive manufacturing jobs were affected by plant closures in the EU in March 2020\(^2\)

The Automotive industry’s turnover exceeds 7% of EU GDP and 3 – 3.5% of the overall GDP in the US and 10% in China\(^3\)

High dependency on China due to global supply chain networks; shutdown directly affected almost 2/3 of Chinese automotive production\(^5\)

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\(^3\) Accenture 2020
\(^4\) International labour organization 2020
\(^5\) 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.\(^5\)
THE AUTOMOTIVE INDUSTRY IS SHIFTING EXPONENTIALLY – ARE YOU READY?

Independent regional strategies are key
Increased localization themes accelerated by COVID-19

The age of data supremacy
OEMs are migrating to a more service- and customer-oriented model

One global market is diminishing
New non-asset players will increase until 2025

Consumer behaviors are influencing market dynamics
Digital experience will demand flexible low-cost offerings due to consumer uncertainty

Vehicle production scheduling is volatile
By 2030, 5% less production is predicted in western Europe

Mega trends are evolving with new potential and industry readiness
M&A will stimulate shared networks to consolidate cost and redefine product offerings

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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 forecasts
- 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 time

* McKinsey 2020c
* 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

- Global economic growth has peaked and is vulnerable.
- Trade tensions weigh on sector outlook.

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

- Emerging markets outlook is key to growth; limited potential in mature markets.
- Transitions from mature markets to emerging markets intensify in the longer term.

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

- Volatility impacts the near term outlook, driving slower growth long term.
- Growth rate peaks, downhill from here.

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

- Transition from mature markets to emerging markets intensifies in the longer term.

¹⁰Gentex 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.\textsuperscript{11}
HOW THE PANDEMIC WILL SPEED UP SOME TRENDS AND STALL OTHERS

- 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.

- 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.

- 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 starts
- 54% Estimated global capacity utilization rate in 2021, down from 62% \(^{13, 14}\)
- 75% Potential car buyers who say hygiene is an important consideration
- 12.5% Loss in productivity per shift because of increased hygiene measures at plants
- 20–25% Predicted decline in 2020 global vehicle sales to 70 million \(^{12, 14}\)

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\(^{12}\) Automotive News Europe 2020
\(^{13}\) IHS Markit 2016
\(^{14}\) Capgemini research Institute 2020
MOBILITY FACTOR DYNAMICS SET TO NAVIGATE OEM SUCCESS

- Changing retail models<sup>15</sup>
- Electric vehicle age – infrastructure design, governmental forces and battery management<sup>17</sup>
- Software supplier and raw material landscapes
- E-Commerce fulfillment and distribution<sup>16</sup>
- Asset visibility, fleet and leasing<sup>16</sup>
- Independent aftermarket impact<sup>15</sup>
- By 2030, new mobility models are expected to account for 17-28% of global vehicle-based mobility<sup>18</sup>

<sup>15</sup> Strategy& 2019
<sup>16</sup> Deloitte 2020a
<sup>17</sup> Strategy& 2020b
<sup>18</sup> PWC 2020c
Part 2: What are the current drivers that are shaping OEM Supply Chains?

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

Market Outlook Radar

<table>
<thead>
<tr>
<th>Impact</th>
<th>Feasibility</th>
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<tr>
<td>Low</td>
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Autonomous mobility & commercialization
M&A, consolidation key for scaling growth

Trends like electrification and PPPs are universal and apply to all segments; however, changes in the regulatory framework are restricted to certain geographies and segments.

TOP 6

- Covid 19 impact on corporate mobility
- EV growth
- Public private partnerships
- Mega apps
- Urban mobility
- Localized regulations - non-global synergies

The key to success of shared electric mobility would be the widespread availability of an EV charging infrastructure which cities should take note of. ¹⁸

Key Markets

- P2P Carsharing
- Bike sharing/eScooter sharing
- eHailing

¹⁹ McKinsey 2019

- 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
PART 3:
WHY OEMS NEED CUSTOMIZED, AGILE SUPPLY CHAIN SOLUTIONS IN THIS SHIFTING LANDSCAPE
Part 3: Why OEMs need customized, agile supply chain solutions in this shifting landscape

Automotive Trends Report 2021

Changing Customer Requirements Will Lead to a Rethinking of Services

- Refocus on core solutions and selling models/channels\(^{22}\)
- Adoption of new role as partner for technology companies, suppliers and customer \(^{22}\)
- New role as mobility (service) provider\(^{21}\)
- Shifting production capacity and establishing partnerships for EV production
- New target customers and marketplaces require higher personalization\(^{24}\)

Revenue & Profit Distribution in $BN\(^{23}\) and Related CAGR\(^{23}\)

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\(^{20}\) assumptions
\(^{21}\) Frost & Sullivan 2020b
\(^{22}\) Strategy\& 2020a
\(^{23}\) Strategy\& 2019
\(^{24}\) McKinsey 2013
CONNECTED FUTURE, LEVERAGING FLEXIBLE SOLUTIONS

LIMITED CAPEX AND COLLABORATIVE SYNERGIES WILL ENHANCE PRODUCTION AGILITY

- Shared distribution
- Export packaging
- Vehicle features as a service\textsuperscript{25}
- R&D partnerships\textsuperscript{25}
- Co-integration services
- Sustainability assessment
- Increased OEM alliances for new market entry penetration
- Reused and spare parts for new product development ("Design to dismantle")\textsuperscript{26}

\textsuperscript{25} Strategy\& 2019
\textsuperscript{26} Frost & Sullivan 2020b
MORE REGIONAL, AGILE AND CONNECTED SUPPLY CHAINS

- Big Data – connected confidence\(^\text{27}\)
- Investments in hygiene requirements, automation and ways of working to match new necessities\(^\text{28}\)
- 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.

\(^\text{27}\) KPMG 2020
\(^\text{28}\) Frost & Sullivan 2020b
COMPLEX AND FRAGMENTED CUSTOMER JOURNEY WITH STRONG INFLUENCE FROM SOCIAL MEDIA CHANNELS

OEMs have to develop consistently into technology companies to evolve.

- 4G Telematics control units will be installed on ~90% of passenger vehicles by 2025.²⁹
- New market players offer more transparent and convenient sales processes.³¹
- Car as a marketplace – online ordering from the car.³⁰
- VR/AR technology for customer interaction and sales.²⁹
- Increase in connected technologies and platforms.³⁰
- 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 solutions
- Compressed landscape – with a reduced number of market players
- Driving down technology costs by sharing technology investments

REDUCTION OF NETWORK PROVIDERS WILL STIMULATE SHARED NETWORKS

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32 Strategy& 2019;
Part 3: Why OEMs need customized, agile supply chain solutions in this shifting landscape

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 technology[^15]
- 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 economy[^15]
- Flexible decentralized solutions and services to enable solid supply chain and faster delivery to customers

[^15]: Frost & Sullivan 2020b
DHL SUPPLY CHAIN SOLUTIONS FOR A SHIFTING LANDSCAPE

- 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
- Potential OEM Alliances
- Tier1 M&A and profitability improvements
- Reduction in R&D investments
- Increased e-commerce due to COVID-19
- Acceptance of purchasing high value items
- Direct selling to customers to increase margins
- Consolidation of dealer networks
- New leasing and mobility models ("Lental")
- Urban mobility
- Mobility
- Health related accessories and services e.g. filter
- Trend towards remote and mobile services
- Ongoing trend of alternative fuels e.g. LNG, CNG, EV etc.
- EV battery logistics (aftermarket, inbound, damages, FV, recycling)
- 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
- 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

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warehouse | transport | value-added services
Part 3: Why OEMs need customized, agile supply chain solutions in this shifting landscape

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