



Digital Transformation Monitor

# The race for automotive data

*January 2017*





# The race for automotive data: Digital platforms versus automotive manufacturers

*By creating communication units on the move, the digital revolution has entered the automotive sector – for long time one of the white spots on the digitalisation map. A product with more than 100 years of historic development is lifted to a completely new level. In this regard, the European automotive industry experiences substantial business opportunities in the coming years, especially by means of Digital Platforms and Big Data. Yet, traditional OEMs are facing fierce competition from digital players which are also attracted by these opportunities.*

1

## On the fast lane towards digital opportunities

For now, connected cars, e-commerce, autonomous driving and the Industrial Internet have emerged as major driving forces of automotive digitalisation. They add up to a global economic potential of EUR 120 billion revenue p.a. in connected car equipment – hard- and software. In addition, efficiency improvements of 20% are expected for OEMs until 2020.<sup>1</sup>

Connected car and autonomous driving are pushing for digitalisation

The connected car market for passenger vehicles alone is expected to grow enormously. By 2020, over 90% of new car sales will include telematics packages. Heavily investing in the second wave of mobile services, European OEMs and Tier 1 suppliers clearly have understood these trends influencing their market position in the long-run. At the same time, new market players enter the industry, e.g. providers of telematics, content, technology and Big Data as well as telecommunication companies and insurers.

Automotive industry represents a total turnover of around 6.9% of the EU's GDP with

**EUR 839 billion**



### Influence of consumer electronics

Being used to consumer electronics standards, new-car buyers already consider connected functionalities a critical purchasing factor. Hence, customer differentiation shifts to digital features and mobile services such as BMW's ConnectedDrive and Daimler's Mercedes me. While OEMs expand their digital core competences, consumers' demand for seamless car-smartphone integration requires them to cooperate.

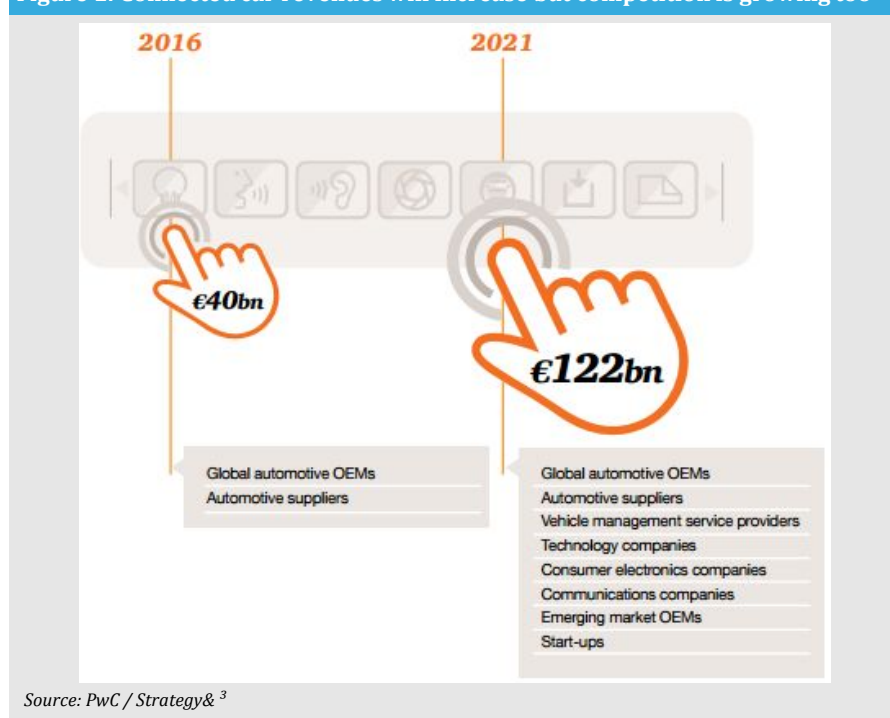
In order to successfully cope with the transformation from developing and producing cars to delivering more and more mobility services, automotive players need to define respective reorientation strategies. Their current business in hardware-selling is at risk of

becoming a commodity play and less attractive because of decreasing margins.<sup>2</sup>

### Digital business scope

Therefore, a major challenge lies in effectively extending their business scope into digital products and services. These new digital business models require consideration of payment, ownership models and critical mass. European OEMs and suppliers react by investing in digital competences, detailing Big Data and digital platform strategies and defining critical control points in value chains. For example, some OEMs focus on enabling seamless customer experience across services, platforms and partners with multi-channel consumer interfaces (HMIs).

Figure 1: Connected car revenues will increase but competition is growing too





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### Digital integration along the value chain

With their transformative power, digital technologies will reshuffle value across horizontal and vertical value chains between business partners, established companies and newcomers. Striving for early leadership in production-ready digital products and dominant scale in individual mobility business models, automotive and digital market players encroach on each other's home turf.

OEMs and Tier 1 suppliers integrate along the value chain from digital enablers, digital augmented product providers to digital service providers and aggregators of data and audiences. Similarly, global technology players move in the opposite direction.<sup>4</sup>

### Europe is lagging behind for digital platforms

In the long run, 30% to 40% of the value in the automotive value chain will be captured by digital services, through digital platforms. Several kinds of platforms are growing rapidly:

- Connected vehicle platforms;
- Community – e-commerce platforms;
- Autonomous driving platforms;
- Industrial Internet / Industry 4.0 platforms.

With a high level of diversity and competition between OEMs, suppliers, network providers, providers of artificial intelligence technologies dedicated to connected and automated driving, mobility services platforms, supply chain platforms of logistic specialists and new IoT platforms, Europe represents a strong market for connected and autonomous vehicles.

However, European platforms are not at scale given the market fragmentation and the advance of the key US digital platforms.

## 2

## The friction zone: strategic areas of competition

Integrating along the value chain, automotive and digital players start competing on the layers of vehicles, parts and digital services. While value creation will soon concentrate on data generated by cars, critical control points include the HMI, Digital Platforms, real-time geospatial information and car sensor data. Three main areas of competition are thus emerging: data management, Human-Machine interface and customer engagement.

### Competition for data management

Industry players in the automotive industry need digital platform providers to be able to use data and stay competitive. However, these players are competing to keep control of the value chain, and to control the data produced by products and services users.

Digital players are now increasingly present across the value chain. As an example, digital players already manage "driver data", produced by people using services offered in connected vehicles.

These include entertainment and social media data, health data, insurance and home integration data. Vehicles manufacturers and digital players are collaborating to use context data and offer new services. They are competing for the management of this data.

### Competition for the Human-Machine Interface (HMI)

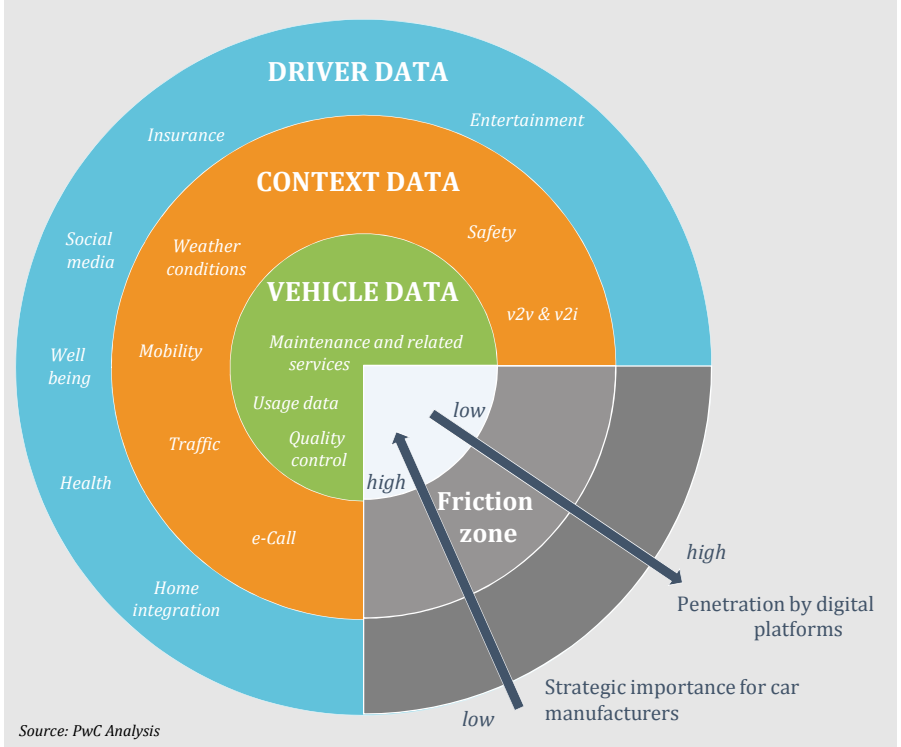
Also technical components from consumer electronics gain entry such as multicore processors used for central in-car control units. With the consumer at heart of today's product strategies, traditional and new market players now strategically compete for control over the major in-car communication channel, the so-called Human-Machine-Interface.

### Competition for strong brands and customer ties

Whereas digital players have experience in customer orientation and no legacy systems, OEMs currently profit from exclusive access to valuable vehicle data, strong brands and direct customer contact. However, also OEM's retail structures will be affected by the digital transformation.

Thus, the European automotive industry pursues intra- and inter sectorial co-competition, in particular, with large technological and digital companies. For example, Apple or Android apps already come with a customer base when being integrated in car telematics.

Figure 2: Digital platforms capturing the value creation of connected vehicles



## 3

## Co-opetition between OEMs and digital players

The rise of autonomous driving becomes a one-off opportunity for players of the connected car market. Trying to secure significant market share in the future and getting hold of strategic value chain control points, European players become first movers. They further engage in co-opetition projects combining cooperation and competition.

### Converging interests forces collaboration

Current initiatives focus on jointly developing scalable connected car and autonomous driving IT platforms, e.g. PSA Peugeot Citroen and IBM or Bosch and TomTom. Volvo and Ericsson combine expertise in driving behaviour with cloud system integration know-how, whereas Volvo and Microsoft work on augmented reality show-room solutions and Big Data applications.

**12 million**

employees are working directly in the automotive industry in Europe<sup>5</sup>



### The Here case: a successful collaboration case for European OEMs

Another prominent example presents the acquisition of Nokia's map service Here by the trio of BMW, Audi and Daimler. Here was at the time one of the bigger developers of maps and location services used in mobile phones.

The convergence of smartphones and connected cars has created a consequent market for location-based services with a high-growth potential. Here, with large navigation and mapping data, was one of the biggest actors on the market.

Its sale generated high publicity, leading to several bids such as from Uber and Baidu. The winning bid from the OEMs consortium was estimated around EUR 2.55 billion, with the three German car makers sharing an equal stake in Here.<sup>6</sup>

### Partnering with Google in the Open Automotive Alliance

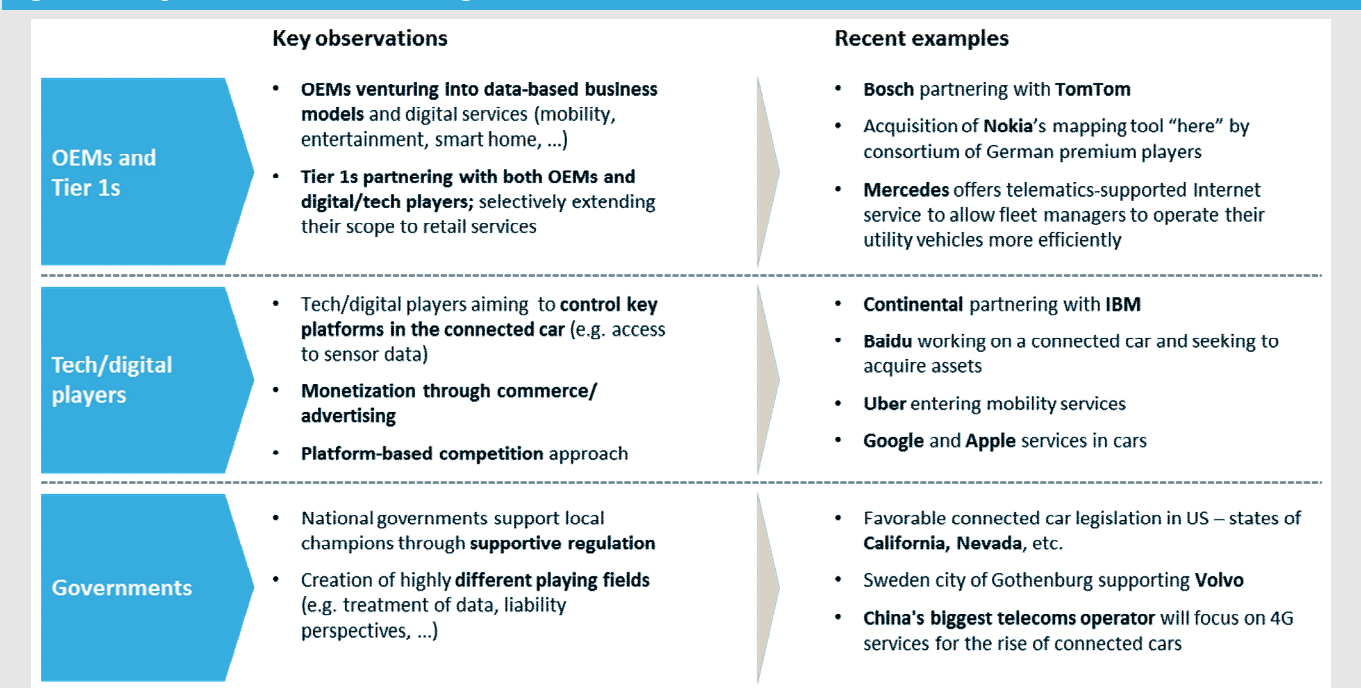
Another example is the "Open Automotive Alliance". For its creation, a number of automotive manufacturers partnered with Google and other technology companies. The objective of the Open Automotive Alliance is to accelerate innovation in the car with an approach that offers openness, customisation and scale. It aims at developing a common platform that will help drive innovation, and make technology in the car safer and more intuitive for customers.<sup>7</sup>

### Box 1: Car Connectivity Consortium: example of co-opetition

Another example of co-opetition activity is the Car Connectivity Consortium, launched in 2011 by eleven companies across several industries, to drive global innovation for in-vehicle connectivity. Founding members include vehicle manufacturers Daimler, General Motors, Honda, Hyundai Motor Company, Toyota, and Volkswagen; system suppliers Alpine and Panasonic; and consumer electronics makers LG Electronics, Nokia and Samsung. Today, it gathers 19 car manufacturers, 8 phone manufacturers, 23 infotainment system manufacturers, 52 ecosystem technology partners and 13 test laboratories.

The Car Connectivity Consortium developed MirrorLink®, an open standard innovation platform that comprehensively manages underlying communications between the device and the car. This frees app developers from creating an entirely new class of driver-aware apps. The standard is designed for maximum interoperability between a wide range of smartphones and cars and allows all players in the ecosystem to have an equal stake in the booming connected-car marketplace.<sup>8</sup>

Figure 3: Competitive barriers and strategic alliances

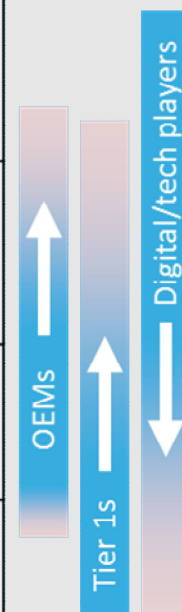


Source: PwC / Strategic<sup>1</sup>



Figure 4: Way-to-play options for OEMs, suppliers and digital players

| Way-to-play                               | Description  | Expected industry dynamics   |
|---|--|--|
| <b>Aggregator of data and audiences</b>   | <ul style="list-style-type: none"> <li>Collect and provide insights from data (maps, location) to 3<sup>rd</sup> parties</li> <li>Marketplace for other digital service providers</li> </ul> | <ul style="list-style-type: none"> <li><b>Strong scale play</b></li> <li><b>Natives</b> (Google, Amazon, IBM) favored by <b>global scale, capability base, openness</b></li> <li><b>Entrants</b> (OEMs, Tier 1s) favoured by <b>reputation, control over primary data</b> (e.g. in the car)</li> </ul> |
| <b>Digital service provider</b>           | <ul style="list-style-type: none"> <li>Deliver digital services that “live” on top of a physical product and create &gt;80% of value (functionality clusters)</li> </ul>                     | <ul style="list-style-type: none"> <li><b>Convergence</b> point of industries: media, healthcare, transport, retail, consumer electronics, IT service providers</li> <li>Highly <b>fragmented environment</b> including in mobility services to remain given regional scale effect</li> </ul>          |
| <b>Digital augmented product provider</b> | <ul style="list-style-type: none"> <li>Simplify the use of the product through digital services (predictive maintenance, fleet management)</li> </ul>  | <ul style="list-style-type: none"> <li>OEMs build on <b>brand reputation</b> and <b>insight into customer needs</b> to provide sophisticated integrated products</li> </ul>  |
| <b>Digital enabler</b>                    | <ul style="list-style-type: none"> <li>Provide enabling infrastructure and platforms based on standards to others</li> </ul>   | <ul style="list-style-type: none"> <li>Single <b>component players</b> seeking <b>niche dominance</b> across OEMs</li> <li><b>Platform players</b> are <b>suppliers and competitors</b> to product and service providers – playing on multiple layers</li> </ul>                                       |

Source: PwC / Strategy&<sup>1</sup>

### Becoming digital service providers and aggregators of data and audiences

Optimistically, European OEMs keep full control of these points with exclusive access to new profit streams throughout the vehicle life cycle. Unique customer experience provides for additional differentiation. Hence, OEMs' activities emerge from digital enablers and augmented product providers to digital service providers and aggregators of data and audiences.<sup>9</sup>

Globally leading in innovative activities – Volkswagen, Daimler, BMW and Volvo – and performing well in terms of market power – Volkswagen, Fiat, Renault and PSA – Europe's automotive sector holds a strong position.<sup>10</sup>

### Seeking strategic alliances

In this regard, a pessimistic European vision would give these companies significant control, shifting profits to software and services with smartphones at heart. In turn, OEMs would lose their brand and core value proposition, supplying cars as commodities. Therefore, European automotive players seek strategic alliances for complementary services with US and Asian companies.

However, such compromises force some OEMs such as Volkswagen to provide digital players with access to certain

data control points. Although this co-competition ensures seamless car-smartphone integration, it also raises various competition policy concerns.

### Innovation hubs

Legacy IT prevents automotive players from gaining quick-wins and adapting to the high innovation pace of consumer electronics or digital players. This is why European OEMs such as Volkswagen or Daimler create innovation hubs. These data labs by-pass usual R&D processes, include external input and are equipped with start-ups' flexibility and creativity in order to quickly extend digital competences.

### Looking ahead: no time for underestimation

Overall, it becomes clear that the European automotive sector, the ICT industry as well as European regulators may not underestimate the importance of digital technologies in the same manner as Bill Gates famously denied the enormous potential of tablets.

Falling behind in terms of country-by-country market size, digital strength and global Big Data players, European countries can only tackle competition with a common, European solution. An integrated Single Market for automotive and ICT solutions offers access to more than 500 million European consumers.

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## About the Digital Transformation Monitor

The Digital Transformation Monitor aims to foster the knowledge base on the state of play and evolution of digital transformation in Europe. The site provides a monitoring mechanism to examine key trends in digital transformation. It offers a unique insight into statistics and initiatives to support digital transformation, as well as reports on key industrial and technological opportunities, challenges and policy initiatives related to digital transformation.

Web page: <https://ec.europa.eu/growth/tools-databases/dem/>

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This report was prepared for the European Commission, Directorate-General Internal Market, Industry, Entrepreneurship and SMEs; Directorate F: Innovation and Advanced Manufacturing; Unit F/3 KETs, Digital Manufacturing and Interoperability by the consortium composed of PwC, CARSA, IDATE and ESN, under the contract Digital Entrepreneurship Monitor (EASME/COSME/2014/004)

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