



The Connected Car is here to Stay

Driving digital transformation
in the automotive industry



Contents

Introduction	5
Management Summary	7
1. Connected Car Data	8
1.1 Data collection by connected cars	9
1.2 Usage of connected car data	14
1.3 Data Privacy	15
1.4 Cybersecurity requires a new security assessment area for car security	16
2. Change of business model?	18
2.1 Technology changes the existing supply chain	19
2.2 Platforms to enable new business models and services	20
3. The impact on automotive companies	24
3.1 Challenges for the new automotive industry	25
3.2 Time for transformation	30
4. Plan of action for Dutch automotive companies	32
4.1 Develop a digital strategy	34
4.2 Create an operating model that is ready for the future	35
4.3 It becomes all about platforms, platforms, platforms...	36
4.4 Take data privacy and security to a next level	37
Digital as defined by KPMG	38



Introduction

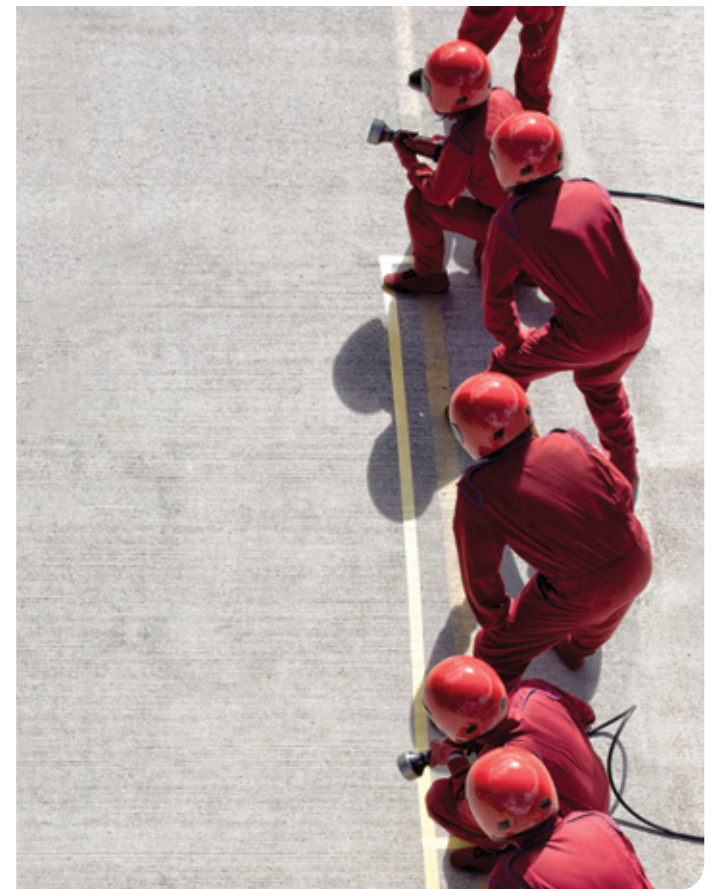
The connected car has arrived and is here to stay! What will the impact be on the Dutch Automotive market? Fortune and increased safety, or job losses, disruption and privacy issues?

“There is no money to be made from building cars in the future.” This is one of the statements made in the 2017 Global Automotive Executive Survey of KPMG released in January 2017. What business model will become the next source of profit for car manufacturers? Customers, their data or the digital ecosystem?

The connected car enables platform based business models

The dilemma between the car and the digital world can be resolved by integration of all upstream and downstream elements in one digital platform, also called a virtual cloud ecosystem. This system should connect and unite all market participants - end consumers, ICT companies and traditional hardware providers. A virtual cloud ecosystem requires different competencies from organisations. The impact of these new technologies is enormous; however, in Europe the pace of change is still slow due to adjustments required in rules and regulations, the questions in relation to privacy and the legacy of a mature auto market (portfolio effect). In new and upcoming countries, where changes are favoured by the government, such as the government of China does with Internet of Things, there are no limitations and connectivity is being favoured instead of being looked at with scepticism. Europe in that respect started out ahead, but risks being overtaken by these high flyers. It's time for European organisations to act!

Although there is some production going on, the Netherlands is not a car-manufacturing country. Therefore, future global changes in the automotive market will impact the Dutch market, while the Dutch market is too small to directly impact these changes by itself. This KPMG report focusses on the Dutch market and the impact the connected car will have on local players.



Dieter Becker, KPMG's Global Chair of Automotive, comments:

“The results of this year's Global Automotive Executive Survey show in particular one fact: The auto industry is between two worlds, one is offline, the other online – and there will be no fusion of these two worlds in the long run. What we need is an additional dimension in which both worlds are coexistent and interlocked. It has not yet been decided who occupies which place in the new value chain. However, there is no doubt that the customer has to be the centre of this newly emerging orbit.”

“For the auto industry, this implies that pure product profitability is outdated. Carmakers' success will not be evaluated solely on the quantity of vehicles sold, but on the customer value over the whole lifecycle, especially when the digital ecosystem will be ready for the market. Over the long term, only market players winning both customers and their data track will prevail. Because this is the way to succeed in the digital ecosystem. More than three out of four executives believe that one connected car can generate higher revenues over the entire lifecycle than 10 unconnected cars.”

By conducting sector-wide interviews and asking interviewees their vision of nine specific themes that we have summarised in the questions below, we refine our vision of the impact of the connected car on the Dutch automotive industry:

- What data are currently being collected by and are available to different stakeholders in the automotive industry?
- Which analyses are currently being performed by Dutch organisations and what opportunities do they see?
- How are data privacy and security regulated and what are the main challenges?
- What is the impact of the connected car on current business models and what is the strategic response of the companies involved in the automotive market?
- What are the main challenges for automotive companies and what is the biggest challenge?
- What plan of action do automotive companies need to have in place?

Interviews have been conducted with (local) key stakeholders to gain an understanding of the typical issues and trends within the Dutch automotive market and to evaluate how market players are planning to adhere to further digitisation, the introduction of connected cars and, ultimately, autonomous cars. These local key stakeholders include companies such as original equipment manufacturers (OEMs), dealers, technology providers, leasing companies, insurance companies and other parties active in the automotive sector. Our report is built around the nine statements, which are combined in three main areas KPMG evaluated, being:

- Connected car data, which includes data collection, data analytics and data security
- Change of the automotive supply chain, including the retail network, which will influence business models and the introduction of platforms
- Recommendations to the automotive sector

A guide for reading this report

The insights of this study can be useful to executives in creating awareness and suggestions for a strategic response to these trends. The Dutch companies have limited experience with data captured from connected cars. As new regulations that open data platforms to different market players seem likely to be introduced in 2018, data will be more easily available. This might change the mind of the automotive manager significantly and a similar study will therefore result in different outcomes.

Why are the findings important?

As can be concluded from the interviews conducted as part of this report, **company managers do not see the fast pace of the change**. They are convinced that change will take place more gradually, which might be due to their existing conventional mind-set. In fact, the opinion of these managers confirms that they are conventional, and it is precisely the speed of the change that makes this shift in the market really disruptive. The findings are important for warning managers and creating a sense of urgency for change. The introduction of disruptive technologies has taken place in different industries already, and has had disastrous results for some established companies.

This report will be of interest to anyone who is interested in the impact of connected cars on the Dutch automotive industry and how different stakeholders might reply to the upcoming changes.

Amstelveen, April 2017

Paul Kromhout: kromhout.paul@kpmg.nl

Stijn de Groen: degroen.stijn@kpmg.nl

Jochem Pasman: pasman.jochem@kpmg.nl

Management Summary



The Netherlands is often seen as a test country as it has a good digital infrastructure and geographic location. Digital infrastructure includes housing, hosting and connectivity, and this is seen as an important item by the Dutch government, being the digital gateway to Europe. The connected car needs a good digital infrastructure and, although much testing is done on Dutch roads with respect to connectivity and autonomous driving, the impact on the automotive sector is certainly not being tested.

KPMG interviewed several players in the Dutch automotive market and discussed nine statements with respect to the impact of the connected car on the Dutch automotive sector with them. These statements and the responses to questions have resulted in the underlying report that provides the reader with an overview of the automotive players and their vision of the adoption and impact of the connected car on the Dutch Automotive market.

The Dutch automotive sector sees the car more and more as a data-generating unit that will impact their current business model. So far, all respondents are aligned. Differences arise when the impact is discussed and the role the players should take. As the cars are generating data, which will only increase, (big) data and data analytics are getting more and more important. The resources and capabilities to deal with and use that data require players in the sector to rethink their capabilities and the skills of their employees. That is, of course, if the player actually has access to the data. If access to the data is blocked by the OEM, we found that parties are creating their own solutions and data-gathering units. The OEM, however, is seen as the most dominant player in data collection, processing and storage and, therefore, a main contributor to creating and joining data and connectivity platforms.

By generating, storing and collecting data on cars, but more specifically on driver usage and driver behaviour, we run into a privacy issue, as personal data is protected by the Data Protection Act. The new European Directive states that data security and data privacy of both the car and the driver are essential. The Directive requires the original equipment manufacturers (OEMs) to take data protection into account during the design of the car; this is because essential elements in the EU Data Protection Directive are 'Data protection by design' and 'Data protection by default'. Respondents see data privacy as an important aspect, as do consumers who are afraid that their car can be hacked.

Therefore, because of the relevance of data privacy and security, KPMG proposes to add a new assessment area to the Euro NCAP test: a cybersecurity assessment for the connected car. It is important to have faith in the security of the car and your personal data.

The data being generated are expected to change business models, and managerial leadership is seen as key to avoid becoming redundant. KPMG and its interviewees see a big challenge in this respect; in addition, however, they believe that the Dutch automotive sector is not yet ready for full adoption of the connected car and the benefits it offers. To facilitate this, KPMG has prepared a plan of action that includes developing a digital strategy and defining an operating model ready for the future (including setting up or connecting to a platform). Additionally, we suggest taking data privacy and security to the next level. The latter is to ensure public confidence and brand reputation, which are often the building blocks for adopting innovations, new products and new services.

If the players do not act and address the identified issues/statements adequately, some of the automotive players will be out of business sooner rather than later.

1. Connected Car Data

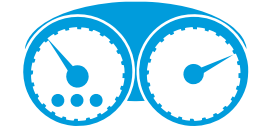


What is a connected car?

The connected car is a vehicle that is connected to the environment (often the internet) via a mobile data stream. The car includes a SIM card that enables a data stream from the car to cloud servers that capture the data, but also a data stream from cloud servers to the car. The concept of the connected car also includes vehicles that are connected to each other (V2V) via local range networks.



1.1 Data collection by connected cars



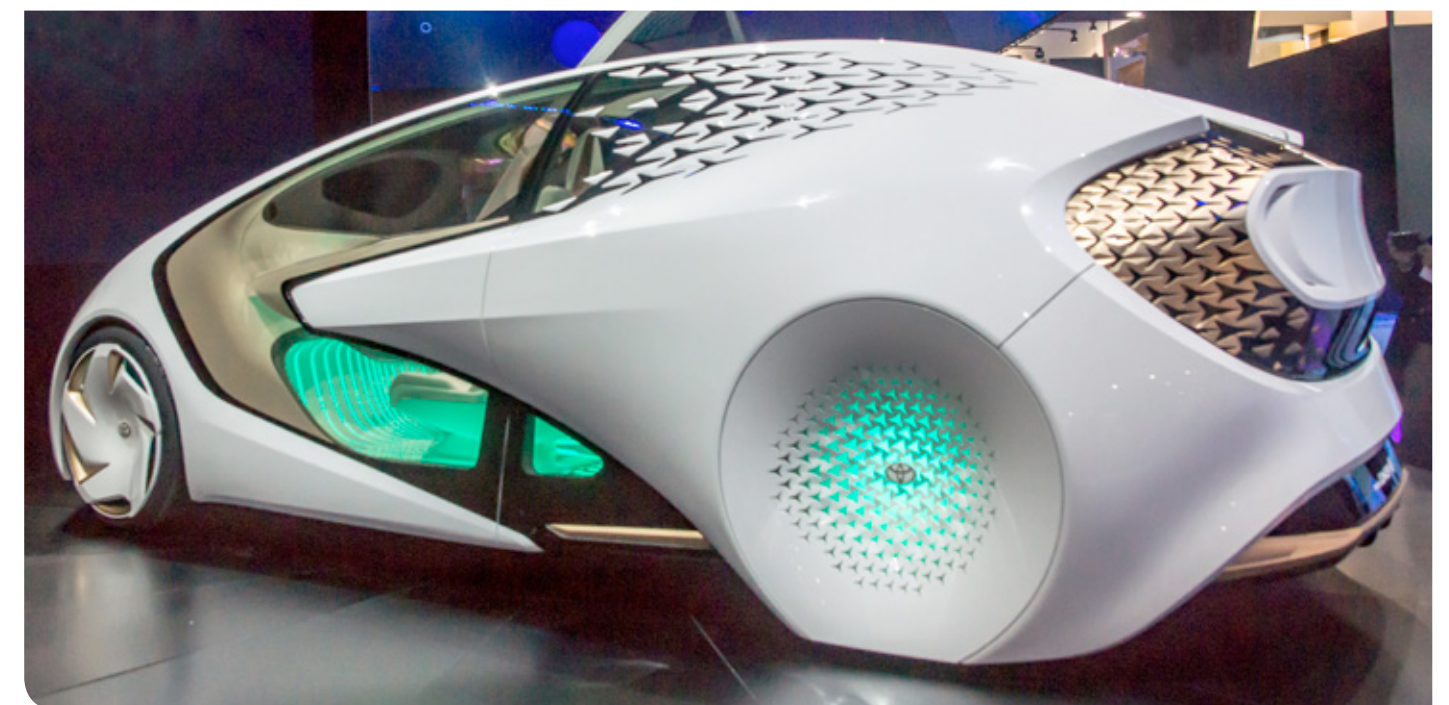
Statement 1: Cars are data-generating engines

The concept behind the connected car is that one can collect both car- and user-related data from a car. Car-related data include safety and security information (when airbags have been triggered, doors and windows are locked or opened), car functionality status (engine injection, transmission behaviour, fuel level, battery charging level, driver assistance systems, malfunctions), driving (fuel consumption, speed, use of brake and accelerator pedals, steering wheel movement), location of the car and surroundings (outside temperature). Furthermore, cars also contain user-related data, such as infotainment settings, convenience settings, navigation destinations and a mobile phone address book. The internet enables digital links to all other connected objects, including smartphones, tracking devices, traffic lights, other motor vehicles and even home applications. This way, new services for customers are possible; for example, a service station will be notified when a car is due for maintenance and/or a service.

Although it may not be known to the wider public, cars have already been generating data for quite some time. OEMs have been analysing these data to use for product improvement for over 10 years. However, in the beginning,

these data were only collected when cars went in to a service station. Retrieving the data was bound to specific locations and only available to the OEM, or to a limited extent to others with access. However, this has changed in recent years. Nearly all car manufacturers now have frequent (online) data transfers with their cars. Soon, this will increase even more since the European Commission has introduced new regulations that make e-Call (emergency call) a mandatory functionality in every new car as from 31 March 2018. The e-Call system requires a SIM card that sends data to the emergency services. This SIM card can also be used for additional applications (information for or from the entertainment system, remote diagnostics, maintenance notifications). Our survey among car importers, car dealers, leasing companies and insurance companies reveals that 92% of them already has connected cars that generate data. However, in 50% of the cases, these data are captured at the OEM servers and are therefore not, or only to a limited extent, available to local players.

The reason for this is that the data that are automatically captured cannot be used automatically because the owner of the data (the owner/driver of the car) must first give permission to the OEM to use the data.



There are two approaches for obtaining this permission. First, dealers include this permission in the sales contract. Permission is then granted to the OEM automatically when signing the sales deal. Second, OEMs ask permission via an online portal when the car has been delivered. However, the process of registration and accepting privacy policies determines to what extent the full potential of connected car data can be realised.

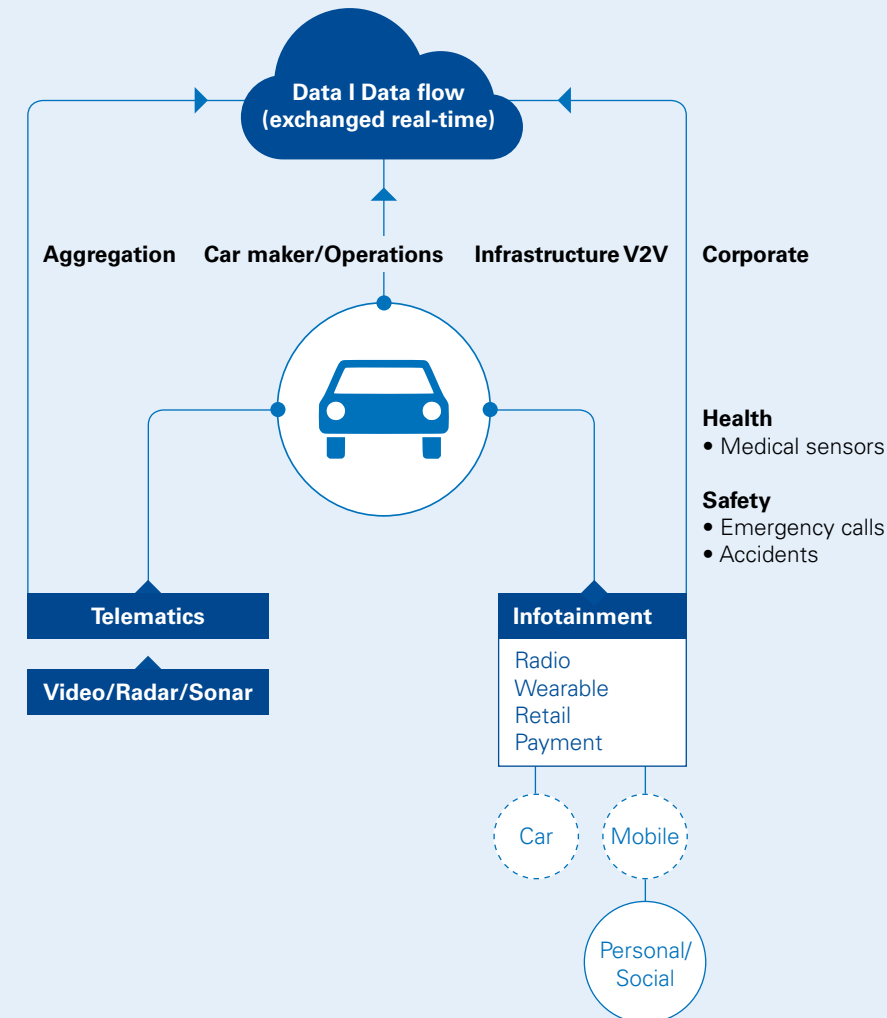
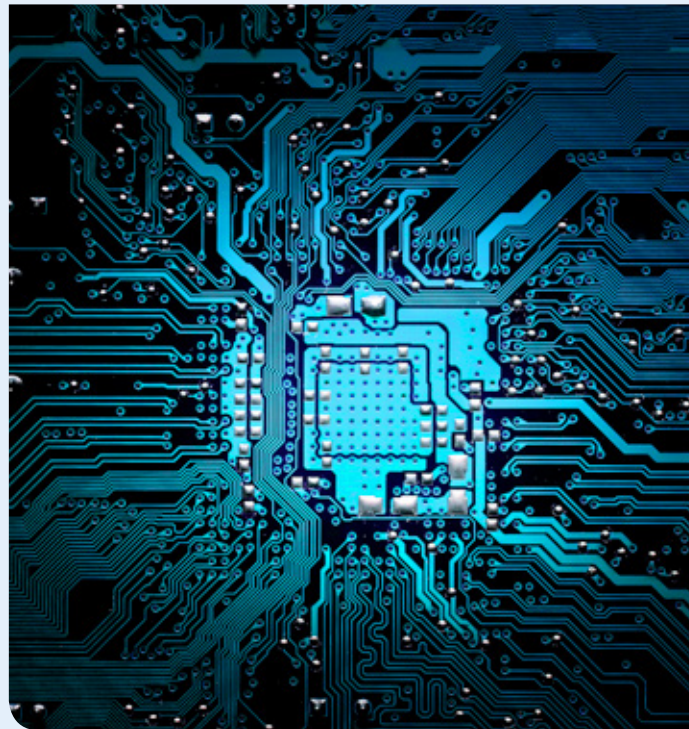
The current connected cars may provide different levels in functionality and related services. The basic functionality is the connection of the car to the internet to send location data, car data and motor management data to the service provider (the OEM), which can be used for different purposes and services (monitoring). A next step is the ability to control the car from a distance, for example, to unlock the car using a smartphone app. It enables the driver to use and see the location, status and motor management data of the car. The third level is the ability to use algorithms from the cloud to optimise the car's performance, for example, with predictive analysis in a maintenance notification system (the car warns the selected service station automatically when due for maintenance and/or service). Ultimately, the car communicates two ways with the environment. In this fourth level, the car can operate autonomously by interacting via the data connection. Possible applications, for example, include online maintenance (updating software remotely), self-diagnosis and navigation applications that are provided to the client via the cloud and include real-time information from other cars, as well as cars that communicate with each other. For example, on road intersections and an accident that needs to be avoided.

We started with the statement **"Cars are data-generating engines"** and we concluded after our investigations, research and interviews that the statement is definitely true and, although they are already generating a lot of data, cars will be even more data driven in the near future. Apart from generating data, more and more data will also be received and processed to support the driver and interact with his environment.

Key insight:

What data does the connected car generate?

In the automotive industry, the connected car is linked to telematics, a device that measures all kinds of activities and events in the car and sends this data via the internet to a cloud server. In addition, a connected car does not only generate data from the car itself, but also from the environment. For example, the road conditions and information about the actual traffic situation.



Data sources:

- Cabin settings
- GPS units
- Onboard sensors
- External devices, including smart phones and wearables
- Telematics and telemetry
- Infotainment platforms

Types of Data:

- Personal information
- Locations and routes
- Health information
- Consumer insights

Data flows:

- OEM private clouds
- OEM monetized databases
- Government-accessible platforms
- Third-party networks

Figure 1: The connected car is a data-generating engine, from: Your Connected Car is Talking, Who is Listening, KPMG 2016



1.2 Usage of connected car data

Statement 2: The road to data is blocked by the OEM. However, there is a way to by-pass it

As mentioned above, OEMs generally won't share vehicle data they obtain for the benefit of the owner or driver of the vehicle. How can one work around that?

In 2017, nearly all new cars will be connected. The majority (67%) of the organisations that participated in this study do **not** currently perform analytics on the data of connected cars, as they do not have access to the data or they do not have the capabilities. This relates particularly to car importers that are owned by the OEM. However, independent car importers (in the Netherlands) are developing their own apps, which disclose connected car data to the driver and related dealers. In addition, other market players or stakeholders, such as car leasing companies and insurance companies,

are connecting their own devices to (connected) cars to offer new services based on driver information. These parties use aftermarket installed GPS dongles for gathering specific driver behaviour as add-ons to the already installed data gathering units from the OEM. They also start setting up information and data analytics units (1 – 1.5 FTEs) to analyse the gathered data and use it to facilitate their new services based on the data gathered. However, as soon as they realise that they simply do not have the scale to build a big data capacity by themselves, they switch to contracts with specialised automotive analytics platforms that turn the data from their dongles into insights for them, and even allow other online services to leverage that.

“Companies don't experience the benefits of the data from the connected car yet: the connected car ecosystems and related platforms are in an early stage.”

Do you have data specialists for analysis of connected car data?

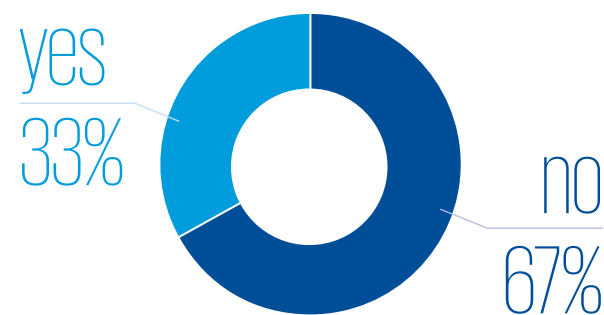


Figure 2: 33% of the automotive companies has data analytics

It is still quite expensive to install dedicated tools in cars, gather and analyse the data and be able to use it for an additional service by having a data scientist and information analyst working on the data. Companies that use an aftermarket onboard diagnostics (OBD) dongle to connect the car to a home database have access to the data. However, they still struggle to produce valuable information from it and “sell” it. Questions they have: For what service can I actually use the data, and why would or how much is a driver willing to pay for a service and information? What data can we ethically use and how can we make sure the data is secure?

The data that is generated by the connected car is only available to OEMs and/or their official partners. Other companies do not have access to the data and applications. That is also the reason why other parties involved, such as the lease companies, the insurance companies and/or dealerships, need to install a “box” themselves to be able to gather data. This currently blocks those parties from retrieving, analysing and using car, driver and motor management data.

If the OEM does not provide data from connected cars to other automotive companies in the supply chain, an OBD GPS dongle or box installed aftermarket to connect the car to the internet is a solution for other parties. However, this also has a number of disadvantages: extra costs, an increased risk of malfunctioning of both the car and the dongle, the build-in process is a logistical challenge and aftermarket dongles do not work for every car model. In addition, only one box can be installed in the OBD system. And what will happen when the OBD disappears, which

we can imagine on short term? But these are rather minor operational issues.

The strategically more important implication is that, with OBDs, a car creates different data sets across different systems and platforms that are managed by different parties in the value chain. This opens debates about who owns what data and is allowed to derive services from them.

Although the interviewed executives know that data is captured, they often do not exactly know what actual data are retrieved by the OEMs. Our interviews confirm that the following information can already be made available and sent to all relevant parties:

- Service status: the current mileage and when the car is due for a service
- Check control: the status of the car, including error memory, motor management data, temperature, airbags, etc.
- Location: the GPS location of the car in case of an accident or when roadside assistance is needed
- Historic data about how the car is used: this data is stored in the car's black box and explain what happened in case of an accident

The latter aspects have a huge impact on privacy. The local police has the ability to download data from the car after an accident, which can be used to decide the question of culpability. And what about tax authorities? Are they allowed to capture the data? A very relevant discussion, with caselaw currently still in the making.

OEMs do have access to more detailed data, e.g. for product improvement applications. However, they currently provide only a limited number of services/solutions to the official dealer channel and SOS services. Limitations to why companies do not use the data (yet) include:

- Lack of approval from the customer/driver to use/gather the data
- Lack of business case in relation to services based on the data and, therefore, investment in additional service creation and sharing data is slow
- Data are gathered and sent to the OEM's home country and not shared with dealers afterwards
- Different owners in the value chain with multiple business models that are currently in conflict, for example, car leasing companies that ask the car data from the OEM to reduce costs for maintenance, and the OEM (and affiliated dealer) does not want to share this data as this might reduce their revenues

So, although data are already being gathered and stored, it cannot always be used and is not always readily available to all the relevant market players.

Off course, sharing all car data among all market players would be the ideal situation. Dealers would love more access to detailed information, but sharing data of connected cars will probably also be a balancing act between conflicting interests from different parties involved. We suggest to develop customer focussed value propositions and collaborate within this new ecosystem.

New regulations in 2018 could possibly open the platform of the connected car to other non-OEM parties (like the PSD2 regulation in the financial sector forces banks to provide external parties access to a client's transaction data if this client so desires).

Although using Data Analytics on car data seems very difficult, companies can start with one or two cases to test the relevance to their company and gain experience in this field. We suggest that, instead of doing in-house analytics with one or two officers, you open up your data in a controlled way to (small) external innovative parties that will do the analysis for you under a partnership contract. Organisations should investigate what type of partnership would best fill their needs (e.g. joint venture, acquisition).

In addition, connectivity of cars provides a broader range of opportunities. The data signal from the car is monitored in a maintenance notification system and an emergency assistance system. These systems are developed by the OEMs and are accessible to different parties. The maintenance notification system offers the possibility to increase client loyalty and retention, as the dealer can contact the client when the car is due for a service.

Emergency assistance systems provide an increased level of safety because emergency services can locate the car and know the status of the car and its passengers. This application can reduce road deaths and it would therefore improve road safety significantly.

We have seen organisations struggle with the integration of these new systems of the OEM and are figuring out how to capture the data in their existing customer relationship and dealer management systems. Privacy issues arise when driver behaviour is being gathered as this can be linked to an individual.

The statement **“The road to data is blocked by the OEM. However, there is a way to by-pass it”** provides the reader with the idea that data can be retrieved, processed and used without the OEM. Our opinion, however, is that instead of having data split by different parties, all data gathered and created should be made available to multiple partners on a defined platform. If not done so by the business itself, we expect legislation to drive such an open data interchange.

Key insight:

What is Data Analytics?

Data Analytics are the activities and methodologies that are needed to analyse large volumes of (unstructured) data in order to better understand business and markets and make timely business decisions.

What opportunities do managers see?

Data Analytics can be used to gain greater and better insight into customers, improve current services, be more specific with marketing and make better predictions. For example, more information about the customer can help improve the customer relationship, and information about maintenance and status of the car provides the possibility to increase customer loyalty.

How can these opportunities be utilised?

Car manufacturers have the data available and are developing applications to analyse and use the data to improve and change the services they offer and to communicate with their customers. It is very difficult for other parties to distinguish because external resources are needed to retrieve the data and data cannot be collected easily by themselves. Companies often struggle with the first attempt. Some companies work out one or two cases to test the relevance and gain experience.

1.3 Data Privacy



Statement 3: Connected cars are no danger to personal privacy

People have reason to be concerned about privacy issues when driving a connected car (as shown in the 2016 ANWB survey referred to below); after all, privacy issues arise when gathered driver behaviour can be linked to an individual. Examples of driver behaviour are capturing data of locations, destinations, telephone calls etc. Privacy and data security is top of the agenda of automotive companies. Privacy will become an issue when something goes wrong and the data are exposed to the public environment. Therefore, companies must be clear about their intentions. This can be done with a privacy statement, in which the organisation explains what data will be used and for what purposes. This is not limited to the automotive industry, but applies to all industries where personal data are gathered, stored and exposed.

Data privacy is seen as a high priority by the OEMs as leaks or issues will have a negative effect on the reliability and reputation of the brand. That is the main reason why OEMs are still hesitant about data gathering and requesting approval from the driver before using data from connected apps.

What about drivers' concerns? The Dutch automobile association, ANWB, has launched a 'data-driven' car insurance (drive safely – pay less). The discussion about privacy concerns needs to be continued. Linking personal privacy to a price can provide the wrong signal. Is privacy only for the rich?

The statement: **“Connected cars are no danger to personal privacy”** is rejected as data are the new gold that can be stolen and misused. There are many ongoing debates regarding privacy. If the vehicle generates and/or stores personal data, the Personal Data Protection Act applies in the Netherlands and, as such, the collection, storage and use of data are subject to restrictions. In addition, the OEM or service provider must facilitate insight for the user into the data and correct the personal data where necessary. We will discuss some of these aspects in more detail in the next section.

Privacy measures that have been taken

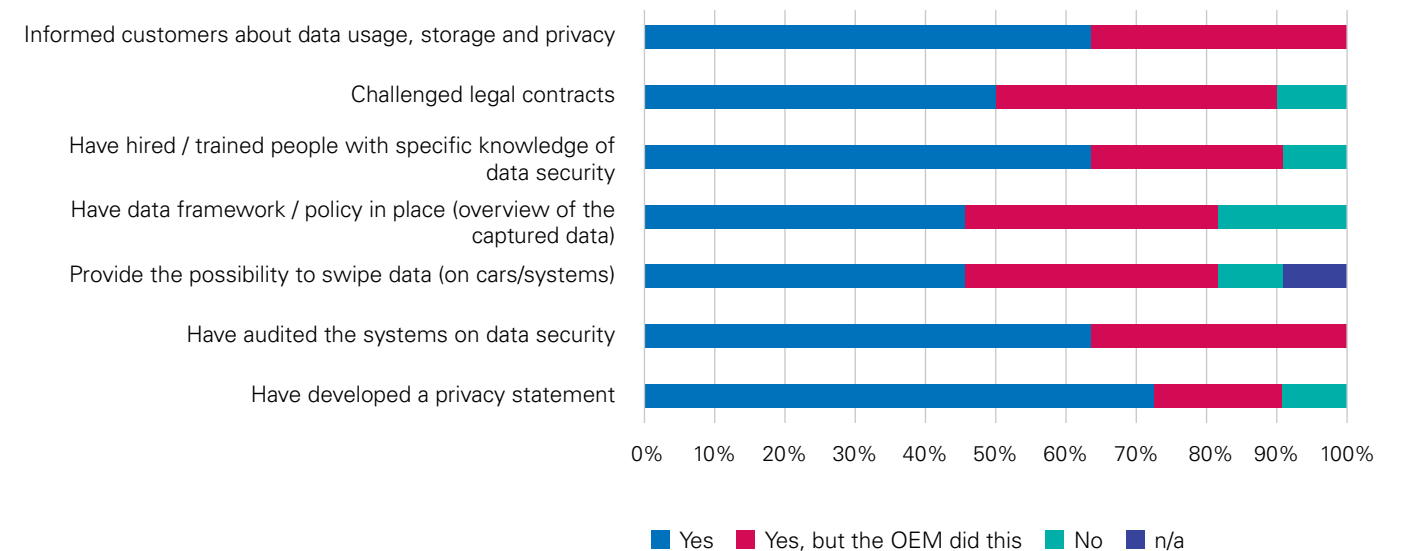


Figure 3: Privacy and data security measurements that have been taken by Dutch automotive companies

1.4 Cybersecurity requires a new security assessment area for car security



Statement 4: Cars need to be assessed against cyberthreats

So far, the emphasis on security with respect to cars is mainly to prevent personal injuries to car passengers. Cars are tested and given a safety rating by Euro NCAP (New Car Assessment Programme) that has created the five-star safety rating system to compare cars. The assessment currently covers four key areas: adult protection (for the driver and passenger); child protection; pedestrian protection and safety-assist technologies (driver-assist technologies, such as speed control and lane support).

When we're talking about connected cars, we refer to connectivity and data, neither of which is safeguarded by the assessment areas as performed by Euro NCAP. Car security, however, is getting a new dimension. As others have pointed out before, the possibility to hack a car to gain access and take over the control of the car is not unthinkable. In addition, there is a possibility that vehicle-/driver-generated data stored in the car can be accessed unauthorised. Since the car will not be the only connected device in the internet of things, other connected devices can be accessed via the car, e.g. the alarm of your house. What happens if your car is the weakest link?

Needless to say, the car requires a new assessment area, for example, performed by Euro NCAP: cyber security. Cyber security is the body of technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorised access. In our case, the protection of the connected car and the digital platforms through which the data generated by connected cars flow.

The impact on car makers is substantial as OEMs are no experts in cybersecurity, and one of the most problematic elements of cybersecurity is the rapidly and constantly evolving nature of security risks. This requires working together with parties that are in a position to do so.

Legislation is being drafted in response to the cyber threats that are linked to connected cars, such as the so-called Security Privacy in Your Car (SPY Car) in the US. As the Dutch market is subject to EU regulations, new legislation is on its way and has arrived from Brussels.

What we need now is legislation that makes cybersecurity part of the set vehicle aspects to be tested and rated. The legislation should require governance and process transparency by the OEMs through the enforcement of the following assessment areas:

- Cybersecurity standards, including protection against hacking, data security, and hacking mitigation
- Privacy standards, including transparency, providing an opt-out for the consumer, and a marketing ban
- Cyber dashboard, which informs consumers how well a car performs against national security and privacy standards.

A 2016 survey by the ANWB ("De 'connected' voertuig en uw data") shows that Dutch people are worried about the commercial use of their personal data (88%), revealing private information (87%), hacking (84%) and car tracking (76%). More than 94% believes there should be specific legal guidelines for the collection and use of personal data.

During our interviews, we asked some questions with respect to security, e.g. the relevance of certain issues. Respondents see the possibility of a car being hacked as low importance to their businesses (64%).

The respondents answered positive to the statements regarding actions already taken to overcome privacy issues and security breaches. In this context, the OEM branches often refer to their headquarters that set the rules.

In the European Union, the Data Protection Regulation was passed in April 2016. This was welcomed by the car manufacturers as they view the legislation especially from the perspective of the connected car, in which data security and data privacy of both the car and the driver are essential. The law requires the OEMs to take data protection into account in the design of the car; essential elements of the EU Data Protection Regulation are 'Data protection by design' and 'Data protection by default'. Data protection safeguards must be built into products and services from the earliest stages of development, and privacy-friendly default settings will be the norm – for example, apps on social networks or mobile for opting out. The EU regulation applies to all member states; therefore, companies in the Netherlands, for example, that are building an app to interface with the connected car must take the principles of the law into account. In addition, data collected by the different parties for one or more purposes may not be

further processed in a way that is incompatible with the original purposes. The data can be used in analytics based on fairness, which considers factors such as the effects on the privacy of individuals (e.g. specific and targeted decisions about identified persons), and whether an individual has a reasonable expectation that their personal data will be used in the new way. So, in the example of the driverless cars, raw data can be used to analyse where most accidents take place and how future accidents could be avoided. It can also be used to analyse traffic flows to reduce traffic jams.

This section started with the statement **"Cars need to be assessed against cyber threats"**. Based on our analysis, reports in the public domain, the relevance of data privacy and security in relation to the connected car, cars are lacking a generally-accepted cybersecurity assessment. We suggest including a new assessment area to the Euro NCAP test: a cybersecurity assessment for the connected car.

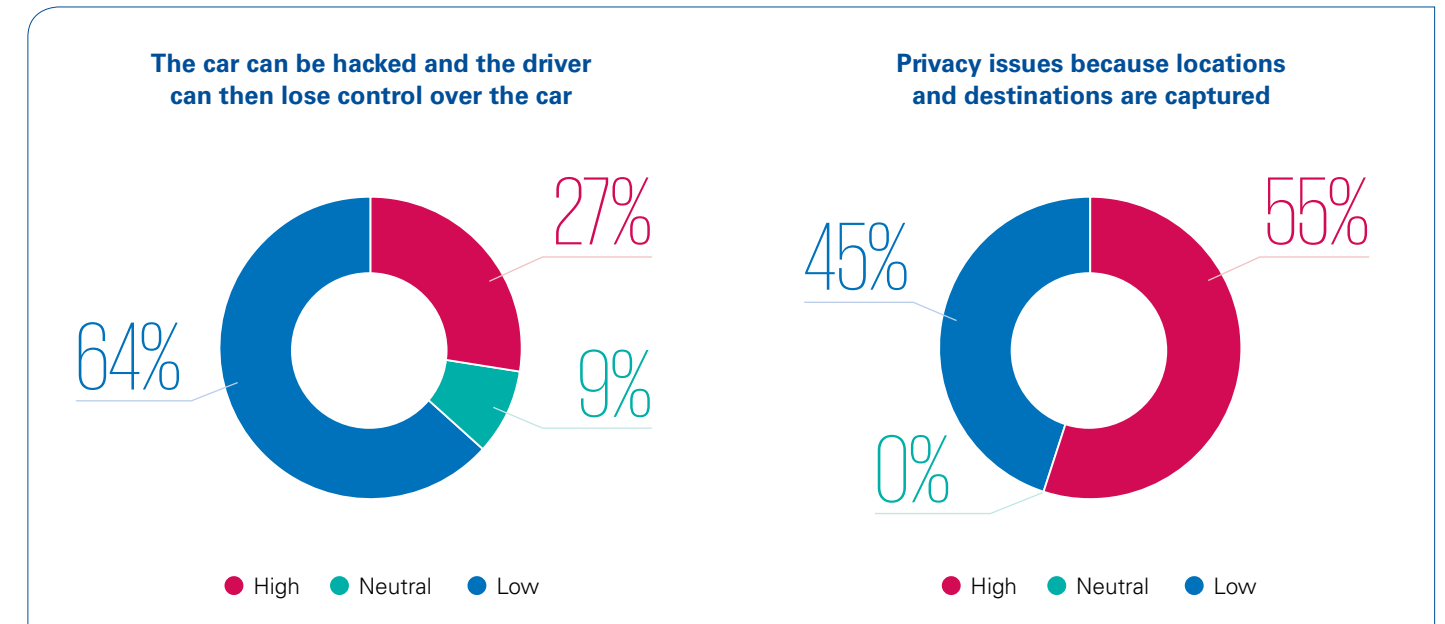
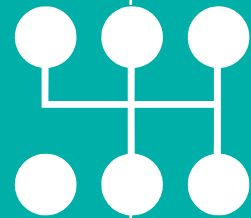


Figure 4: Dutch automotive executives see privacy issues as more important than data security issues

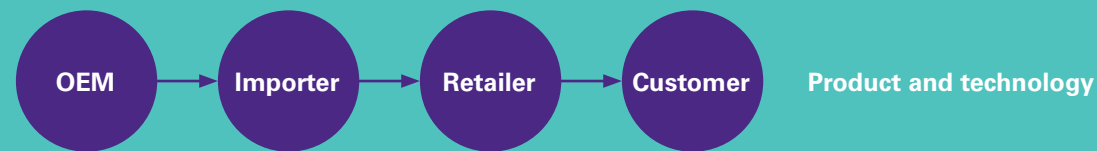


2. Change of business model?



Downstream in today's business model of automotive manufacturers

PRESENT

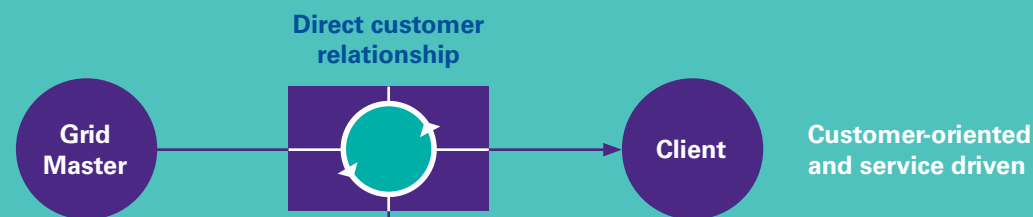


One-time: Sale of a vehicle containing additional high margin equipment such as navigation systems (inclusive OEM-captive connectivity related service solutions).



Downstream in the 'uberised' customer and service oriented business model

FUTURE



Along the entire lifecycle: Sale of vehicle dependent and vehicle-independent digital products and connectivity services integrated into the vehicle.

Figure 5: The traditional business supply chain changes to a new customer- and service-oriented business model enabled by digitisation

2.1 Technology changes the existing supply chain

Statement 5: The automotive industry is shifting from asset based to a service and software driven business model. In 2025 we drive on data and data drives us.



necessary changes, organisations have to increase the investments in technology and data analytical skills to make use of this opportunity and be able to survive.

The respondents do not think the impact is underestimated, but they do believe the potential of data is underused. Finally, the respondents consider data analytics as complex and difficult to understand and see proven concept applications.

People in automotive companies need to utilise different activities in the digital automotive organisation. They perform complex analysis and have to sell this in the organisation. More knowledge needed to aggregate data and make this available to the right people.

Competencies in the organisation that are needed to utilise data are also different. Integration of different departments is needed to work and think less in silos and be more integrated.

It is clear that the connected car is going to have major future implications for companies and organisations in the automotive chain. That said, the interviewed companies find it very difficult to predict what exactly the future organisation will look like and are not aligned on the outcome. They all agree that the connected car will have an impact on the business model of organisations; however, the magnitude and speed of change is perceived differently. The current automotive industry lacks experience and skills and operates in a market where competition is intense and includes players outside of the automotive industry. The outcome for the traditional automotive industry is very uncertain.

KPMG foresees a disruptive effect on existing automotive companies due to these elements (see Figure 7 above). The primary goal for OEMs is to get into contact with the customer, whereas previously this was done by the dealer. The core business model of the OEM (see figure 7) was to build and sell cars: product and technology driven to keep the production facility running. In response, other organisations will increasingly change into network organisations by using and exchanging data.

In general, the creation, usage, storage and exchange of data are increasing across a modern organisation. The respondents see a shift in revenues in the longer term to more digital services. In order to accommodate the

Based on the characteristics of the automotive market and the introduction of new technologies that accelerate platform-based business models, complete and radical change is expected. However, the interviewed managers do not see the urgency of the change; they expect the change to come gradually. "In 10-15 years, an automotive company will look different." These managers think there is time to change; we believe this change will come fast and is unexpected.

The statement **"The automotive industry is shifting from asset based to service and software driven. In 2025 we drive on data and data drive with us"** stands as it is. The reaction in the sector, however, is not congenial and different time scales and impacts are mentioned by the different parties. KPMG sees an inevitable change and shift to data-generated services and products and, as such, business models will change; looking at current developments and innovation in the automotive sector, we foresee this shift sooner rather than later although, due to legacy (unconnected / older cars), a dual model will continue to exist for quite some time.

2.2 Platforms to enable new business models and services



Statement 6: The connected car will boost the platform business model for the automotive sector

The rise of the connected car will likely push the digital platform business model as one of the dominant business models for the automotive industry. Recent history has shown that when a sector that is characterised by many smaller players becomes more information intensive, the digital platform model can quickly become dominant in that sector. The connected car will make the fragmented automotive sector much more information intensive, thereby creating large opportunities for digital platform business models. Other automotive characteristics, such as low asset utilisation (9% for cars) and uneven distribution of information between parties (for example, OEM's

know much more about the car and way of driving than insurers do), act as further accelerators.

Data provided by devices such as a connected car can be valuable to a single user, but only to a limited scale. Only when this data are used on a digital platform to foster new interactions between different parties in the automotive landscape, it will create entirely new services and value. Furthermore, it can allow other parties to build new services and businesses on top of that data. Over the last years, enterprises in other sectors (such as AirBnB, Uber, BlaBlaCar, Alibaba) have been very successful in building businesses

that use digital technologies to facilitate new interactions on a massive scale and allowing others to build their business on top of the platform (i.e. app developers, taxi drivers, hosts, ride sharers). When the platform concept is applied to the connected car, the value of the data it generates will grow exponentially and this will in turn disrupt the entire competitive landscape in the automotive sector (as the aforementioned examples have proven in their respective sectors).

Since the beginning of the 21st century, cars are optimised on the technical side of car production. Better mileage, higher safety ratings and customisation were focus areas of the sales pitches of many OEMs. Tomorrow's customers of the connected car are the millennials, who are born as digital natives with digital technologies embedded into their way of living from the very start. As they plan, organise and travel with the help of digital products and services, this has become the new norm of doing business and living. A key reason why this consumer shift is taking place is the recent widespread availability of the technical infrastructure (e.g. mobile coverage), cloud infrastructure, and the delivery of a user-centric experience through smartphones with common

operating systems. Employers in urbanised areas, like the Zuidas in Amsterdam, offer a car-sharing subscription instead of a lease car to their new joiners. The millennial population will help push the connected car into a mainstream product over the coming years, so the time is now for the automotive sector to consider how this will change the business models and competitive landscape.

The new kinds of interactions that will be possible with connected cars go beyond the focus on in-car services provided by OEMs. The sensors and data output in most cars are standardised per car, brand or year it is built. The sensors mostly focus on speed, oil/fuel/electricity consumption or temperature, which can be extracted through the OBD port or even an app. However, none focuses on the style of driving, passengers, infrastructure or environments, let alone share this data beyond the OEM boundaries. With a diligent data governance structure in place that secures privacy and fair use of the data, such data can be used by a range of companies acting as a network, such as government, insurance, lease and maintenance companies. Examples one could imagine include:



1. New interactions between connected cars can vastly improve machine learning of the autonomous cars with use of a platform. The goal of the platform is to interact with the connected car and send and receive data from the connected car to improve the behaviours of the other cars, even of cars from different brands.
Example: Technology to support the platform by NVidia (Drive PX)
2. Imagine interactions between cars and infrastructure to continuously inspect the quality of the roads. Smart traffic lights will inform drivers/autonomous cars when the lights will go green to save fuel/energy.
Example: Talking Traffic in the Netherlands
3. In 2015, car manufacturer Daimler launched Moovel, an urban mobility platform which combines offers from various mobility service providers into one platform. Daimler shifted from being primarily a car manufacturer towards an urban mobility platform as well. The platform is open to suppliers like car2go, Flinkster, mytaxi and Deutsche Bahn, and makes it possible for the customer to compare and book different transportation options for a ride from A to B.
Example: Moovel from Daimler
4. Currently, hybrid models bridge existing business models with platforms. Parkflyrent, for example, offers car owners the possibility to rent their car to strangers, while the car normally was idle and parked at the airport.
Example: Parkflyrent

In the last example, supply and demand are brought together in a marketplace platform, one of the most widely implemented types of platform models today. This type of platform works extremely well in a fragmented market where the focus of the platform is to create reliability and/or create an easy way to unlock assets for better utilisation. The way Uber has transformed the taxi business can become a template for universal car (maintenance) providers. Through Uber it has become extremely easy for a customer to order a taxi; it lowers a significant barrier to get from A to B. On top of that, the customer and taxis fill the platform with all kinds of data. In the future, the connected car can request maintenance by itself, even before an actual problem has occurred. The universal (maintenance) providers need to be organised on a platform where a service catalogue can be consulted, a schedule is available to be able to determine when and where the car can be serviced and whether the right certificates are in place. The best supplier can be selected based on the parameters of the car and the owner's preferences. This approach can only work if the users trust the platform; therefore, it depends heavily on the shared data where knowledge about technical wear and tear, driving style and the schedules of maintenance providers are available.

Based on the data these interactions generate, such a platform can be expanded to include more types of users. For example, insurance providers and other platform users can all create and make use of apps and services facilitated by the platform. The platform will get more possibilities for interactions all based on the shared data from the connected car and maintenance service providers.

For each player in the automotive sector, various strategies are available to respond to the rise of the platform model brought about by the connected car. Ranging from e.g. transforming your entire organisation into a platform model versus specialising in a sector niche that is hard to enter for platforms. The latter will be a challenge to the automotive sector as the whole sector will become a platform.

Three main characteristics of the automotive sector that will indicate the entry of the platform business model:

1. The sector will become more information intensive than ever before, the connected car will be one of the main drivers for this due to the sharing of data
2. There are currently extreme information asymmetries, current knowledge of the car remains mostly with the OEMs. Shared data will make a difference in the future and can tear down the information asymmetries with the use of platforms
3. Current production and maintenance is extremely rule-based work. Maintenance and production is heavily standardised to focus on efficiency. A platform can exploit the rules to apply them on a larger scale.

The universal car (maintenance) providers will be one of the first to notice an impact in the near future; it is up to them if they want to be in the driver's seat creating the platform or ride along and react to the platforms which are managed and controlled by other parties.

The primary function of a platform is connection; therefore, the statement: **"The connected car will boost the platform business model for the automotive sector"** is true as perceived by the respondents as it is by KPMG. To use the connected car to its full potential, connections, interchange and the storage of data are perceived most efficient when a platform is used to connect new parties and create the single source of truth to which parties connect. A platform limits the number of direct connections and when more and more are linked, it increases in relevance and impact.

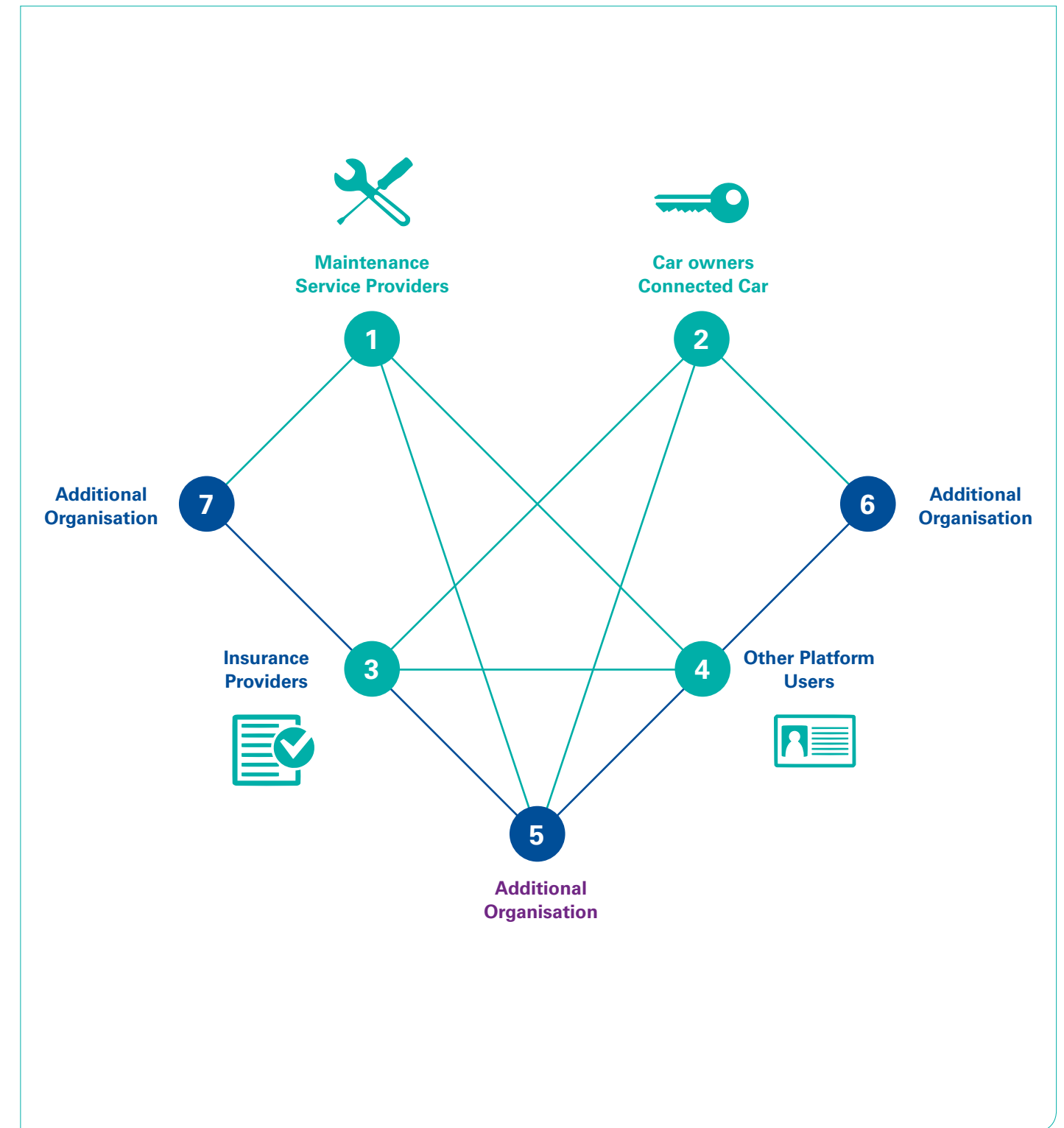
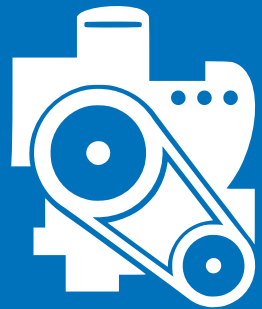


Figure 6: Ordering the interactions of a marketplace platform



3. The impact on automotive companies



3.1 Challenges for the new automotive industry



Statement 7: The Dutch automotive industry is not ready for the connected car

There is no question of not being ready as there is no possibility to ignore and avoid the upcoming change. Even though not all cars are connected or drive autonomously and communicate via the internet of things with all elements of a city, the electrical roads are starting to get paved. The digital automotive industry is already here. Improved telecom infrastructure, tech companies that link themselves to cars, the possibility to store large volumes of data and improved capabilities to analyse the data are prerequisites that are already being rolled out.

Although some of the prerequisites are being rolled out, the execution and usage is still not at the required level. As mentioned in the previous section, the parties involved need a beneficial business case as they are investing or already have invested a lot. An old economic rule states that economies of scale reduce cost, so the trend of centralisation becomes more important. As a result, the interviewees also see other parties getting involved in data gathering and analytics, not only the usual suspects.

The fact that organisations struggle with many different systems in the chain does not support the necessity to increase the integration of data from cars with existing customer relationship and dealer management systems. As such, data management parties can be expected to step in, retrieve all the gathered data (since they are not limited by the template/data structure of the OEM) and, by gathering all the data, they are better equipped to provide new services.

To facilitate services and/or safety, the European Commission may demand that OEMs use one fixed format for data gathering to disclose the data to other parties as well, as we have also seen in software, electronics and accessories (such as the standardisation of the battery charger).

A change in mind-set is required as data analytics on data from cars is not yet the top of the agenda at the companies. As the Netherlands is not a car-producing country (besides the Mini) and Dutch organisations are not directly involved in the development of the applications (basically not invented





here), it retains a follower instead of an inventor profile. However, some importers already have integrated connected cars into a maintenance notification process, which alerts the preferred dealer that the car is due for a service. An officer from the customer service centre gets in contact with the driver and schedules the maintenance job.

Another benefit is an improved relationship with customers. Organisations have the opportunity to know what is going on with the car (see it from a distance) and offer comfort to customers in the case of road assistance or an accident.

Experiences from the Opel OnStar services in the United States show that this leads to significantly improved customer retention ratios.

KPMG agrees with the statement: **“The Dutch automotive industry is not ready for the connected car”** as there is no overall vision and strategy within the Dutch automotive industry and parties are not (yet) working together. Dealerships struggle and there is no clear vision on the business model, also being somewhat in the dark about what the respective OEMs’ focus and strategy are.

Statement 8: Local representatives are becoming redundant due to the introduction of the connected car

The role of the importer and the dealer will change due to the changing need for maintenance – it will be limited and different. In addition, the customer relationships will become more digital. The experts who were interviewed are debating the roles of the OEM, importer and dealer and foresee a change due to the centralised activities.

There are some other changes in the automotive industry that make it difficult to earn money as a dealer in the future, such as reduced maintenance due to the introduction of

electric cars, as well as conventional cars requiring less maintenance. The direct interaction between the car and the driver via technology reduces the interaction with the dealer even further. In combination with the millennial, who tends to shift from car ownership to carpooling, we expect a significant change in demand. If we look at the current dealer landscape, some have a net return on investment of 1-1.5%¹, but an increasingly larger group of car dealership is structurally not strong enough to ensure the continuity of their business. The number of dealers has declined to about

¹ Bovag Branche Barometer 2016



1,000 in 2015, down from around 1800 in 2010 . Scaling is strongly encouraged by the importers, partly due to the changing market. The number of outlets will also decrease, as will the number of people employed in the industry. That number is now at approximately 50,000. And not only the number of people, but also their personnel skills and required competencies will change. The future might well be big network hubs where you also share your car, in addition to the limited maintenance.

With the connectivity of cars, OEMs have the opportunity to have direct digitised contact with the customer. The interviews revealed that the increased dominance and powerful position of the OEM in the value chain is perceived as a big threat. The OEM can remotely control the car and predict the driver’s behaviour. This might result in a different role for the dealer and the importer, or possibly in the redundancy of these parties. This threat can be mitigated as dealers and importers develop new value propositions and concepts that deliver tangible returns. In the short term, dealers can increase their scale of operations to profit from economies of scale and have a stronger negotiation position.

The lack of change capabilities of the automotive industry itself was also mentioned as a threat. The automotive industry has a very long history, with a conventional mind-set. For some importers, the change will come unexpectedly. Therefore, companies need to change the existing organisation to mitigate these threats.

Thus, the effect of introducing new big-data applications from connected cars to the automotive market and within organisations results in an increasing dominance and powerful position of the OEM. In time, it could be bypassing companies completely because OEMs can have direct customer relationships. In addition, competition is changing and new entrants can enter the market.

This is risky for some automotive players in the Dutch market, as they are not used to change, have a conventional mind-set and have limited change capabilities. These capabilities are needed to change the organisation and improve cooperation with external stakeholders, for example, with OEMs, consultants and universities/students.

Indeed, the statement **“Local representatives are becoming redundant due to the introduction of the connected car”** will be true to many dealerships. There will always be a niche, however, for those customers who want personal attention and are prepared to pay for it. In general, however, the added value of a dealership for buying a car is non-existent if we remove the emotion and we only look at mobility. In other words, dealers need to reconsider their current offering to the customer and determine why the client should do business with them (add value to customer). This also applies to amongst others like independent service workshops, insurance companies and leasing companies.



Statement 9: The implementation of data-driven organisations is mainly a leadership challenge

Technical challenges such as exotic technologies and the complexity of the necessary statistical techniques are real, but the managerial challenges are even greater. In our research, we examined four managerial challenges of the application of big data: Leadership, Talent Management, Technology, and Company Culture.

Generally, all four managerial challenges are relevant, as most respondents rate the challenges as relevant. Companies struggle to create “leadership teams that set clear goals, define what success looks like and ask the right questions”. As there is an increasing importance for data-driven decisions, it does not erase the need for vision or human insight. Business leaders who can spot opportunities, understand market developments and think creatively are still needed. Successful companies are the ones that make the change in decision-making but still provide an environment in which human insights and vision are important. Ninety per cent of the respondents in the automotive companies surveyed recognises the challenge of establishing a leadership style needed to change to the required data-centric organisation focus.

Data analytics is new for most automotive organisations and finding and recruiting data scientists is difficult.

- Current employees have other capabilities (commercial or technical). Data scientists need to deal with very large sets of data, but at the same time speak the same business language.
- New employees might not recognise automotive companies as an attractive place to work (except Tesla and the large OEMs).

In addition, there is an increasing amount of technology available for analysing these large sets of data. Existing IT departments do not have much experience with these new data analytical technologies; they also lack experience with different sources of internal and external data. IT departments have difficulties to integrate these different sources of data.

The introduction of data analytics requires a significant mind shift across the organisation. For the traditional automotive companies the step to a ‘data-driven’ culture is a big step. In fact, organisations need to change their culture from ‘gut feeling’ to evidence-based decision-making.

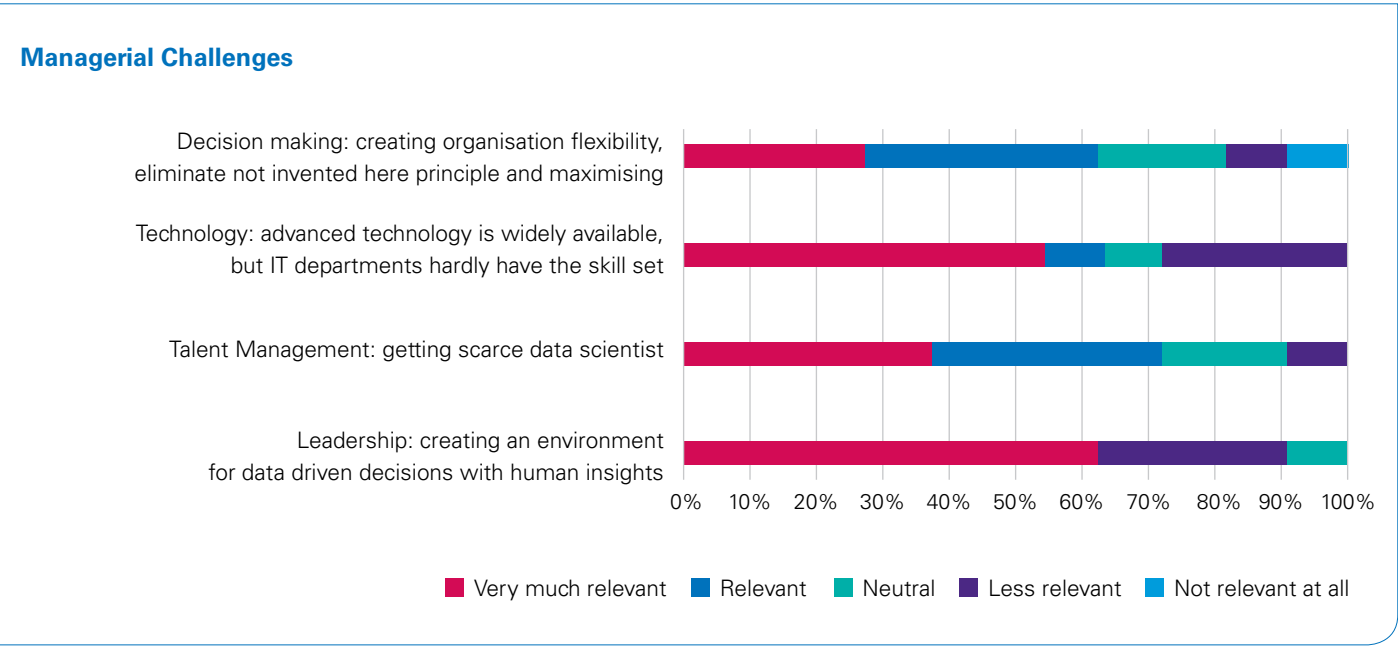


Figure 7: Framework from: McAfee and Brynjolfsson, 2012, adapted by KPMG

Data from the connected car are a large set of data that not only contains information about the car itself, but also from its environment. The definition of big data analytics is not clear to the interviewed managers, as they are currently not analysing data from connected cars. However, they do some analytics mainly on data from their customer relationship management system and dealer management system.

Looking at managerial challenges, the statement “**The implementation of data-driven organisations is mainly a leadership challenge**” has been confirmed by scientific research. Based on the answers from our respondents, we recognise that management plays an important role. When management does not understand the impact and/or necessity to act, the organisation is doomed to become obsolete.

Key insight:

Which threats do managers foresee?

The biggest threat is the increasing dominance and powerful position of the car manufacturer, which can shorten links in the value chain (importer and dealer).

Another threat is the risks of breaching data privacy versus getting valuable information from the data. Successful application of big data is difficult. Conventional car retailers don't have the required sophisticated technologies and often lack the required capabilities to analyse the data.

How can these threats be mitigated?

Mitigating the threats from the connected car is not easy as the OEM has increased power over importer and dealer. Some importers and dealers create their own value propositions and concepts.

In the short term, dealers can create scale with acquisitions. A dealer that sells a larger part of the total volume of a brand has a stronger negotiation position than the importer. However, in the long term, we expect the OEM to increasingly control the relationship with the customer via a digital connection in the car and on their smart phones.



3.2 Time for transformation

As mentioned in the previous sections, automotive companies need to adjust to a new reality. The connected car has arrived in their showrooms and service workshops. Connected cars provide OEMs, importers, dealers, suppliers and owners with different opportunities and threats. These new types of functionalities in the car increase to renew the business strategy as the market becomes more dynamic and the organisation needs to respond. Therefore, companies tend to change their business strategy from a defensive strategy (based on creating economies of scale and reacting to competitors) to a more offensive strategy (creating the capability to respond quickly to dynamic market circumstances). Organisations need to spot and explore new market opportunities.

From the interviews, it was found that radical change is needed, and activities and competencies that are needed to incorporate big data applications are new to the firm. Second, competition in the Dutch automotive market is perceived as strong. Therefore, it seems likely that the change will be rapid.

Surprisingly, we found a different view during the discussions we had with experts. The interviewed automotive companies agreed with the extent of change, but thought this change will take place more gradually. In other words, this is risky: changing too fast will cause an overreaction, but changing too slowly will create a gap between the required strategy and

the actual strategy needed to survive. In fact, start-ups and companies from outside the industry can step into this gap.

A fundamental transformational change is needed to use the full benefits of new information technologies. According to this theoretical framework, it means a business scope redefinition. Automotive organisations will change into network organisations. There will be a shift in revenues to more digital services. This business scope redefinition brings different managerial challenges, which are very relevant to the automotive market in the Netherlands, most importantly, creating a different leadership.

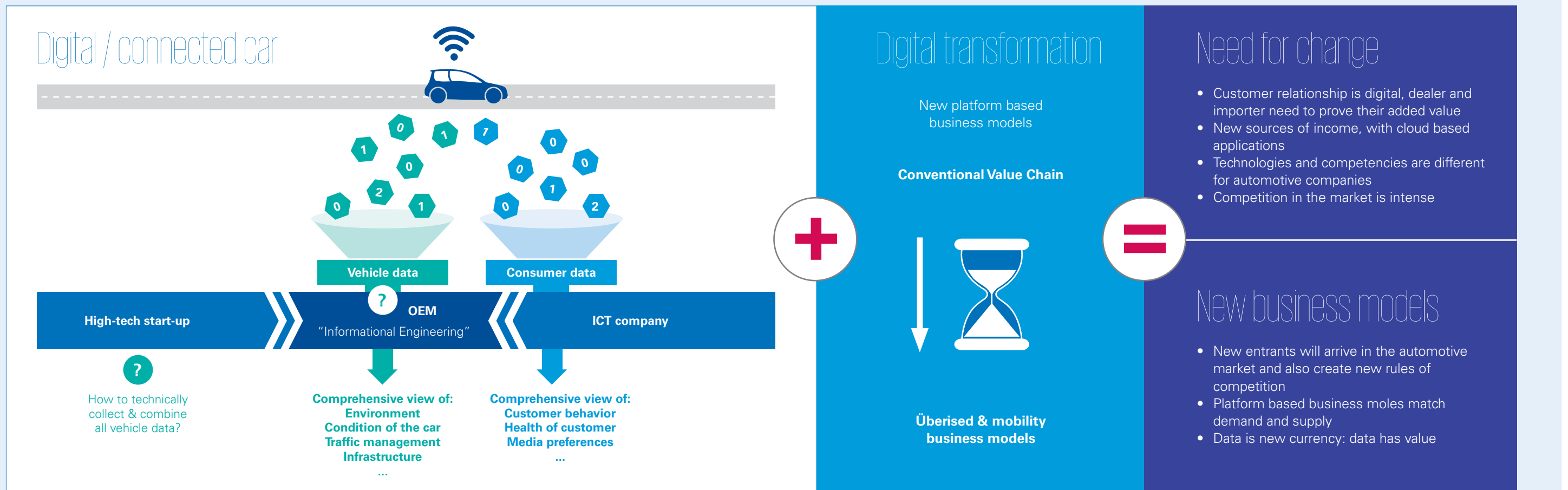


Figure 8: The connected car and the introduction of new platform-based business models will transform the market



4. Plan of action for Dutch automotive companies

Disruptive technologies drive organisations to dramatically redesign their business, as we have seen in many other industries, like the hotel and taxi industry (Airbnb and Über respectively). We expect this radical change to come to the automotive industry as well; actually, we have described the first signs in this report.

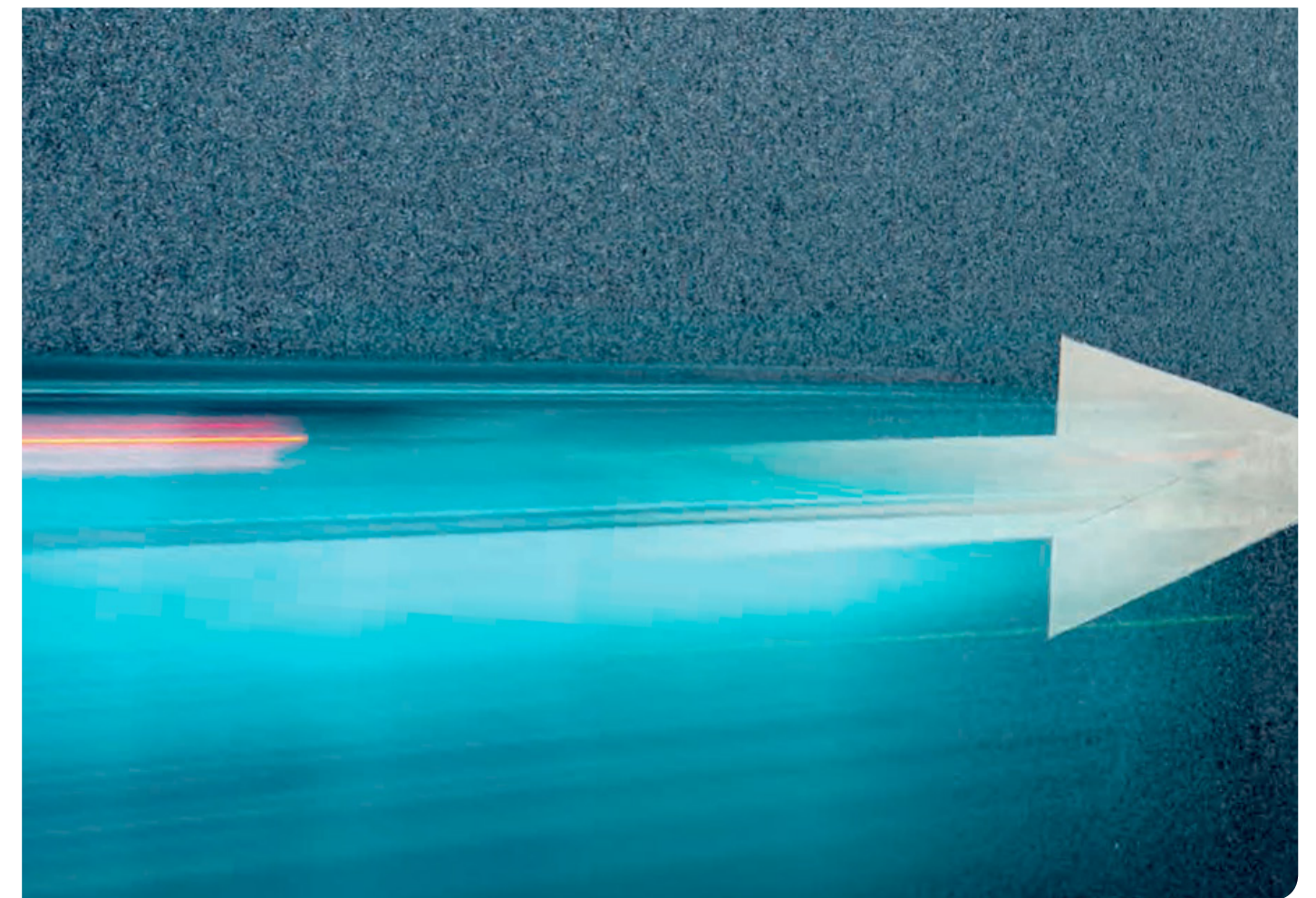


Key trends in the automotive industry are the connected car, the electrification of the drive-train, the societal shift from ownership to carsharing and the transition to sustainable energy. However, even more important are changes in society in the new digitised world:

- Customers are more empowered through social media and the prevalence of information giving them an information edge over automotive companies
- Millennials will become the largest age cohort in spending in the next five years and shift from car ownership to carpooling
- High cost of legacy (investments in real estate) by the traditional automotive market players that creates competitive disadvantage relative to digital businesses (do not have high costs for real estate)
- New entrants: IT companies like Google, NVIDIA and start-ups like Snappcar are joining the market and competing in innovative ways

- Market saturation as there is still a surplus of sales and service outlets in the Dutch automotive market, which drives increased price-based competition, which could drive higher levels of commoditisation, as well as reduced returns on investments that might lead to bankruptcies.

A car importer, dealer, universal service station, leasing company, insurance company or body repair shop needs to be aware of this change and innovate. We suggest developing additional streams of income to have an alternative for the decreasing income from the conventional automotive business. In addition, we have suggested starting with one or two concrete data applications to see what the impact is on the organisation. As we have seen in the interviews, Dutch companies have difficulties translating the digital developments to a concrete plan of action in their organisation. Therefore, we suggest thinking about the following actions that need to be taken, instead of waiting and becoming obsolete.



4.1 Develop a digital strategy



To have a clear answer to the changing market, organisations in the Dutch automotive market need to act. We suggest not to wait until it is too late, but start now.

First, a clear digital strategy is required to guide the organisation on this journey. The strategy should include how the organisation will deal with digital disruption. It must also include an assessment of the different options that the organisation has and the recommended courses of action. Moreover, we strongly advise integrating knowledge about IT, digital, platforms, the organisation, the sector and knowledge about the business from the entrepreneurs themselves in this assessment process and developing it into a concise and well thought through plan of action.

This plan of action contains clear goals, for example, to:

1. Improve customer experience
2. Develop new business models
3. Optimise existing channels
4. Achieve an excellent service performance

In addition, the different questions for digital strategies has to be answered: 'how to become a digital leader', as can be seen in Figure 9. First, the organisation should determine 'where to play'. This means the organisation must determine which markets they need to focus on. Is the automotive market in the Netherlands still an attractive market to focus on? Do we serve the right region? Then, the organisation should think about the differentiating propositions that can be offered to these markets and clients. What is the perceived value the customer expects? Finally, the organisation has to target specific client segments and defines the most effective channels to reach out to those client segments.



Figure 9: KPMG framework: Key questions for digital strategies, 'how to become a digital leader'

4.2 Create an operating model that is ready for the future

When the business model questions have been answered, we suggest performing a readiness check on the required changes in the organisation's operating model. As can be seen in Figure 9, this readiness check should include questions on processes, technology, structure and governance, people, culture and measurers and incentives (performance management).

First, the organisation needs to think about how the desired markets and clients will be served. A digital transformation is not simply the digitisation of existing core business processes. New technologies really do change the current business scope and create a business network of players that interact via digitised data exchanges. An awareness that digital companies work significantly different compared to conventional companies is critical.

Then, the new business design should have flexibility to interact with new platforms. Finding the right technologies and systems that support the desired business model and core business process is the next step. For most organisations, this means changes in the IT organisation.

The IT organisation needs to support business value-adding activities, and must contribute to the innovation ambitions. In practice, this means an increased speed of response to changing priorities, the ability to scale up if required, and the flexibility in architecture to add interfaces with other market players and for new requirements from the business. In addition, data management should have a priority as data loss and poor data quality will kill your success. Without data quality, data analytics is impossible.

As we said in our recent publication "Agile project delivery - How to increase project success in a hybrid world", digitised organisations do their projects differently. As the volatility of our business environment increases, organisations are looking at ways to respond to these changes more effectively. One of the responses has been the introduction of agile methods. This approach is deemed more suitable to uncertainty and changing circumstances than the traditional stage gated approaches. Over the past years, agile methods for software development have been embraced by many organisations. It is claimed that agility radically improves the success rate of projects. On the other hand, adoption does not always seem easy and agility is probably not a silver bullet. The agile approach also has an impact on project and programme management, making it a topic for both IT and business.



So far so good, but how do I get my organisation on my side? When it comes to the real digital transformation, culture and people play a big role in this game. How do we attract and retain the right talent, skills, and diversity for effective digital innovation? How do we adapt our culture to allow teams to innovate and learn quickly? These questions are absolutely key to success in a digital transformation.

Innovation means doing things differently: a new idea, method, product or service. As the digital world is new to automotive players, most companies have limited capabilities themselves to facilitate change all by themselves. Collaboration can be established by building a new ecosystem or leveraging existing partnerships/business ecosystems. We have seen companies already collaborating with external experts, start-ups and communities, but also with science and research. We suggest making innovation part of the management agenda. In addition, approach the shortlist of strategic partners for collaboration or assistance in the execution.

Finally, the organisation needs to define what success looks like, how this success can be measured and what key metrics need to be developed. An appropriate performance management system shows the tangible return of our digital transformation investment.

4.3 It becomes all about platforms, platforms, platforms...

We expect the rise of the connected car to drive the automotive industry increasingly towards the adoption of digital platform business models. Increasingly, the value from cars will stem from the data they generate, and the capturing of this value will be done by the winning digital platforms that best utilize this data to the benefit of all parties involved. It is all but uncertain that these winning digital platforms will be run by the incumbents that are leading the automotive sector today. Technology-savvy 'platform-natives' such as Google's Waymo, Apple and nVidia will be among the outside contenders to keep an eye on. One thing is certain: the winner will be the party that best uses that data from the connected car to create new, valuable and seamless interactions between market parties that will benefit both sides of that interaction.

Following sectors such as software and travel, the automotive sector will undergo a fundamental shift in the basis of competition and success. When the digital platform model

becomes dominant in automotive, succeeding will no longer be about adding value to resources you control, but about who is able to attract and mobilize the best ecosystem of resources that you do not control. This shift will turn entire business and operating models inside out, as managing non-linear ecosystems at scale requires entirely different capabilities and focus than managing complex but still linear supply chains.

As in other sectors that have experienced platform disruption, classic intermediary parties in automotive will also be replaced by new digital ones that transparently aggregate products and services for the consumer. The result will be a constant battle of which party will become 'the app' in the hand of the consumer for his / her needs around mobility. The travel sector already has experienced this with the rise of aggregators in a specific vertical first (e.g. Booking.com), followed by the rise of meta-aggregators across all verticals (like Kayak) following suit. In mobility, Daimler is already trying the meta-aggregator role with its Moovel platform.



- 1 Transform your entire organisation to a platform model
- 2 Build your own platform for a new business
- 3 Participate in a consortium to build a joint platform
- 4 Leverage an existing platform as an additional sales channel
- 5 Leverage an existing platform to enrich your current business model
- 6 Specialise into a sector niche that is harder to enter for platforms
- 7 Do nothing

Figure 10: Seven levels of platform integration to react to the upcoming platformisation

From our work with clients on responding to platform disruption, we have identified seven possible strategies for existing organizations to deal with this development. These range from more aggressive strategies such as transforming your entire organization to become a digital platform business (1) to defensive strategy of doing nothing (7). These extreme approaches are equally risky; most organizations would like to consider some of the more intermediate strategies.

As we have seen, automotive players in the Netherlands are already changing their portfolio investment strategy. Whereas investing in creating large retail companies was common practice, nowadays they're looking for smaller parties to complete their new business portfolio. As a result, automotive enterprises should expand their innovation capability by integrating the right platform-oriented start-ups into their ecosystem.

4.4 Take data privacy and security to a next level



Society is becoming addicted to analysing data and that is not surprising. After all, data analyses makes our lives better and easier every day. The condition is that there be sufficient attention to a careful application of these analyses. This should not be limited to privacy and security. It is all about ethics: organisations need to test whether the applications fit in our modern values.

In a digitised world with an increasing amount of data, data privacy and security go hand-in-hand. These topics will be increasingly important for safeguarding consumer trust. We strongly recommend creating transparency of what data have already been captured. First, with a privacy statement in which the organisation explains what data will be captured and for what purposes. Second, we advise providing clear opt-in and opt-out processes to the customer.

An example in the automotive is the working of a navigation system. To guide the driver from A to B, it is essential that the system meet the following conditions:

- The quality of the (card) data needs to be good
- The algorithm – the instructions given – must be correct and
- The route advice should serve the interests of the driver: it should be an independent advice. Of course, it should not be the case that the algorithm has a preference for a route along a particular brand of fuel stations.

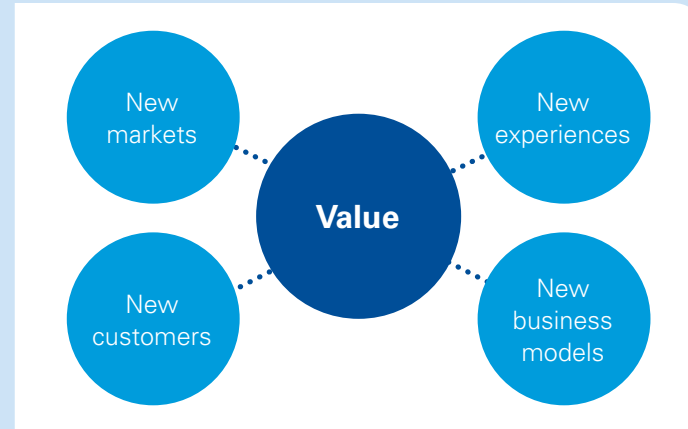
The latter condition is currently getting little attention, but we think this is important now as we are increasingly dependent on algorithms in virtually all facets of our lives. We have seen an increasing number of applications in which the human is dependent on algorithms. The self-driving car is coming soon and is actually one big algorithm. This car has to make ethical decisions, based on algorithms that have been developed by IT specialists. How do we know the car takes the right decision?

Originations need to be increasingly transparent and be able to explain these algorithms and make these processes auditable. The accounting sector can play a key role in this game, as the accountant has the capabilities to provide assurance about the accuracy of the processes and algorithms. We realise this requires a considerable investment in a rapidly changing market. However, the public trust in this modern digital society should be handled with care: this trust in smart applications will definitely fuel the digital transformation in the automotive industry.

Digital as defined by KPMG

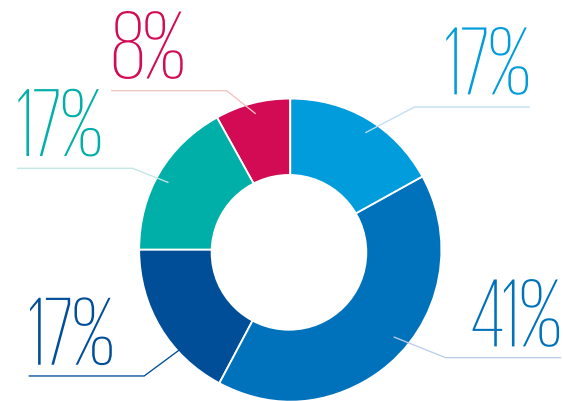
Digital is not a thing, but simply a word that describes our world today. Advancements in technology have blurred the lines between physical and virtual, creating an emergence of digital disruptors that provide new pathways for organisations to create value.

Believe digital is broad in its impact, but also industry specific. It goes far beyond the front office to facilitate true enterprise-wide business transformation so organisations can build sustainable competitive advantage. While we understand that embracing digital may present its own challenges, we view disruptors as enablers rather than inhibitors, allowing businesses the opportunity to innovate, transform and thrive.



Connected Cars survey

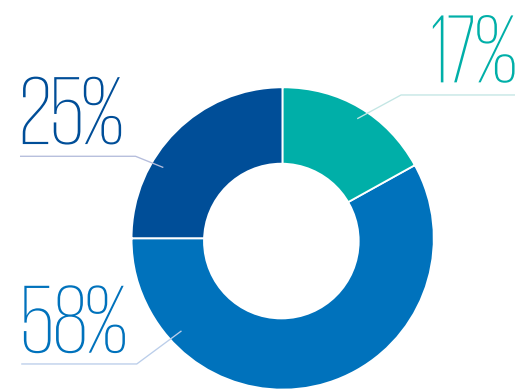
Respondents per company type



- Car Leasing Company
- Importer
- Dealership
- Insurance company
- Supplier

n = 30

Size of organisations in this survey



- <100 employees
- 100 - 1,000 employees
- >1,000 employees

Contact

Contacts in relation to this report:

Paul Kromhout MSc RE CISA
Risk Consulting, IT Advisory, Financial Services, Leasing

Director
 KPMG in the Netherlands

Since 2000, Paul has worked in automotive leasing and equipment leasing. Paul has worked for captives, independent and bank affiliated companies in Europe, the US, Australia and New Zealand. Assignments relate to, amongst others, IT support in the financial audit, package selection, pan-European system rollout and implementation, country specifics, IT due diligence, business process modelling, process mining, data migration support and, most recently, workshops with respect to mobility.

T: +31206 568022
E: Kromhout.Paul@kpmg.nl

Jochem Pasman MSc
Management Consulting, Platform Advisory

Senior Manager
 KPMG in the Netherlands

Jochem leads the Platform Advisory team of KPMG in the Netherlands. He serves clients across a wide range of sectors where the digital platform business model is on the rise. His expertise lies in translating this development into actions for the strategic agenda of his clients.

T: +31206 562939
E: Pasman.Jochem@kpmg.nl

Stijn de Groen MSc
Management Consulting, Digital Strategy and Transformation

Senior Consultant | Executive for Automotive
 KPMG in the Netherlands

Stijn is working at automotive, car leasing and mobility organisations. He has done a wide range of assignments as consultant and project leader, including: defining (digital) strategies, target operating models, transformations, product/service development and (IT) due diligence. As Executive for Automotive, Stijn takes the lead within Advisory for the automotive-related topics.

T: +31206 564437
E: Degroen.Stijn@kpmg.nl

Loek Kramer RA
Audit

Partner
 Sector Lead for Automotive
 KPMG in the Netherlands

Loek leads the KPMG Automotive sector in the Netherlands and is a member of the KPMG EMEA Automotive network. He is an experienced Audit professional in the automotive industry and serves a wide range of (international) clients in the sector: e.g. car importers, car dealer companies and suppliers. He is and involved in market research and several publications.

T: +31306 582405
E: Kramer.Loek@kpmg.nl



