



© Artur Debat/Getty Images

BUSINESS TECHNOLOGY OFFICE

Shifting gears: Insurers adjust for connected-car ecosystems

Insurance companies seek to deliver enhanced products and services by investing in new technologies and partnering with others in the smart-car environment.

Markus Löffler, Christopher Mokwa, Björn Münstermann, and Johannes Wojciak

When it comes to connected cars, what was once considered to be the stuff of science fiction is now reality. Many cars are equipped with sophisticated sensors that can monitor not only miles driven, location, and routes used but also a person's driving behavior as well as vehicle data such as oil temperature, brake wear, and tire pressure. This technology is enabling a host of new applications that are meeting customer demand for convenience, safety, and security features; advanced vehicle maintenance; and better fleet management (Exhibit 1).

As the number of applications grows, a strong ecosystem is forming around the connected car, involving a range of participants—among them automakers, insurance companies,

telecommunications firms, sensor and chip manufacturers, and digital-platform giants like Amazon and Uber, as well as academic institutions and standards-making bodies. The rise of this ecosystem is changing the competitive landscape for all participants, especially for companies in the insurance industry. Insurers face digital disruption in a number of areas. Their analytics capabilities, for instance, may be displaced by predictive-modeling or machine-learning technologies. And their traditional data sets, which contain risk profiles based on claims history, may be losing value given the growing availability of real-time data streaming from connected cars.

How must these businesses adapt their technology infrastructures, architectures, and strategies for

Takeaways

Automobiles are increasingly being outfitted with sensors that gather a massive amount of data that have never been available before. All the participants in the connected-car industry—among them, automakers, insurance companies, sensor and chip manufacturers, and digital-platform giants—stand to be affected by this trend.

For insurers, the challenge will be investing in the technologies and relationships that will allow them to use real-time data streaming from vehicles to offer new products and services to customers, as well as to create long-term growth for the company.

To succeed in this new environment, insurers should heed four technology imperatives: incorporate sensors, analytical tools, and customer interfaces in their IT infrastructures; seek to enlarge the customer data pool using their own sensor technologies and through partnerships with automakers; digitize customer interactions; and build up internal digital know-how and capabilities in areas such as product development, data analytics, machine learning, and supply-chain management.

a world of connected vehicles—and what are the implications of those changes for CIOs and internal IT departments? Our study of global insurance companies suggests that some are unlocking new sources of profit from the connected-car ecosystem. They are acknowledging the network effects that are taking hold in their industry and, on their own and in partnership with other ecosystem participants, they are investing in new technologies and IT-management strategies—specifically, incorporating mobile sensors and analytics into their products and services, enlarging the customer data pool, digitizing customer interfaces, and building up internal digital know-how and capabilities. As a result, they are finding new ways to deliver innovative products and services and to enhance customers' experiences, and they are forging a path for long-term growth. In this article, we consider the technology investments and IT-management approaches that are most critical for insurers to seize the opportunities presented by connected cars.

Finding opportunities in connectivity

Connected-car technologies are being adopted quickly; according to research by the automotive consultancy Secured By Design (SBD), they are expected to become standard in automobiles by 2020, at the latest.

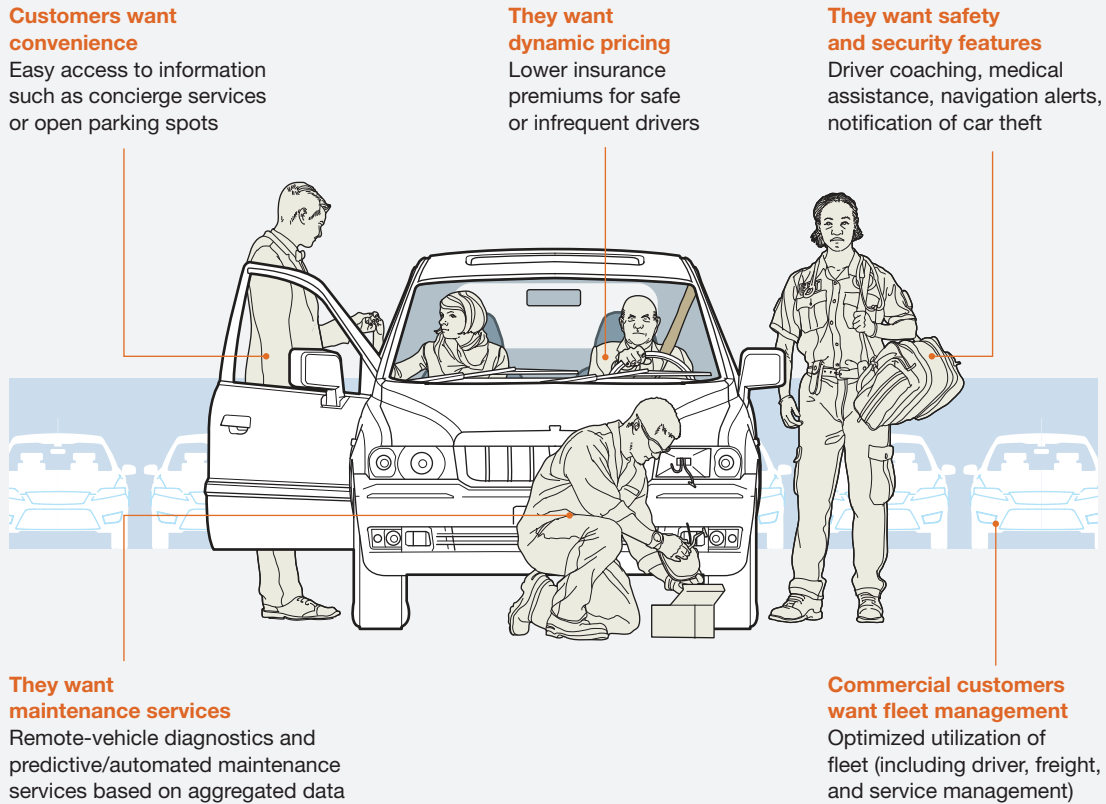
Some insurers were among the early adopters of emerging connectivity tools and business

models. Progressive, for instance, in 2008 launched Snapshot, a usage-based-insurance program that offers consumers discounts of up to 30 percent, depending on when and how well they drive. More than three million people have signed up for the service, enabling the company to collect a trove of driving data from onboard diagnostics devices installed in customers' vehicles. Such information, when combined with other data, can be used to assess personal or regional risks—for example, identifying a high frequency of accidents at a particular location for a specific time of day and during certain weather conditions.

Some insurers are already using or beginning to experiment with telematics—devices that can collect data from vehicles and drivers and transmit them across wide-area networks. These data can be used to influence driving behaviors, or increase claims-processing efficiency and lower insurers' losses by, for example, enabling better detection of fraudulent claims. Using these data, companies can develop dynamic risk profiles that can have a direct impact on insurance premiums (for example, offering lower premiums for lower risk) and, hence, on insurers' revenues. The data can also enable improved customer segmentation and marketing campaigns—allowing insurers to offer relevant products to young drivers, for instance.

Exhibit 1

The connected car, equipped with sophisticated sensors, offers a growing number of new applications.



Source: McKinsey analysis

As these technologies gain traction, traditional insurers face disruption from other participants in the connected-car ecosystem, in the areas of customer interaction, analytics, and network and service management (Exhibit 2). Turned on their head, however, those disruptions also present significant opportunities for insurers. The potential for new services expands far beyond the traditional insurance business. A company could, for example, advise consumers on the best time to sell their cars, offer coaching on how people could adjust their driving behavior to save fuel or to increase safety, locate the nearest and cheapest gas station, or predict maintenance needs. Allstate, for example, offers driver assistance in case of emergency or breakdown,

and other firms provide gamification software for improving a person's driving skills. Expanding their offerings in these ways will enable insurers to shift from pure insurance products (with perhaps one customer touchpoint per year) to insurance-service hybrids (with almost daily touchpoints). Through more regular touchpoints, an insurer could increase its consumer engagement and strengthen customer loyalty.

To realize these benefits, insurers are now beginning to actively collaborate with others in the ecosystem. Instead of designing and launching products and services based on existing internal offerings and capabilities, they are looking critically at their

Exhibit 2 Insurers face disruption—and potential opportunities—in three critical areas.

Customer interaction

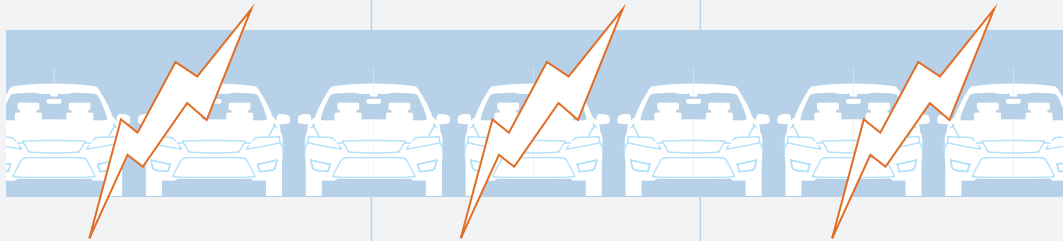
Disruption: Some ecosystem players—ie, OEMs,¹ telecoms, and digital players—may offer innovative customer experiences, becoming primary points of contact for risk prevention and insurance.

Network and service management

Disruption: Classic network-management approaches may be displaced by peer-to-peer approaches made possible because of the Internet.

Analytics

Disruption: Existing data pools and analytics capabilities may lose value given real-time data streaming from connected cars and the rise of predictive modeling or machine learning.



Opportunity: Ecosystem partners can help insurers build hybrid product or service offerings that may strengthen customer relationships via frequent interactions.

Opportunity: Ecosystem partners can help insurers develop new services—for instance, smart-parking applications or advanced remote-maintenance services.

Opportunity: Ecosystem partners may support insurers with access to big data, data-mining technologies, and advanced-analytics methodologies.

¹Original-equipment manufacturers.

Source: McKinsey analysis

portfolios (and those of competitors) to decide whether to make or buy new products and services or to establish new partnerships. Of course, a critical factor in these discussions and decisions is insurers' existing and projected technology capabilities.

Addressing the technology imperatives

To successfully participate in the connected-car ecosystem, insurers will need to continue to make significant investments in information technology. In our research, we identified four critical areas that CIOs, C-suite executives, and IT professionals at large insurance firms (and at other companies seeking to capitalize on connected-business opportunities) will need to focus on: incorporating mobile sensors and analytics in products and

services, enlarging the customer data pool, digitizing customer interfaces, and building up internal digital know-how and capabilities.

Investing in mobile sensors and analytics

Companies will need to incorporate three technological building blocks into their IT infrastructures and digital strategies.

Mobile sensors can take the form of smartphones that directly collect and transmit car data, retrofitted devices such as dongles that are installed in vehicles professionally or by drivers to capture data and transmit them through a SIM card or smartphone, or other devices with built-in sensors that can collect vehicle information and transmit it through

a SIM card or smartphone. The insurer's choice of sensor and transmission technology depends on the level of data quality and reliability required. The use of smartphones may be economical, but this approach can limit insurers' ability to deploy certain applications—an accurate assessment of driving behavior, for instance. To get access to higher-quality and more reliable data—such as those used in the pay-how-you-drive programs offered by multiple insurers—companies may need to invest in more costly retrofitted devices or engage in formal partnerships with automakers. The expense of such devices is a factor, but the cost of sensors is rapidly decreasing.

Analytical tools are computing platforms that incorporate sensor data, geographic information, context data (such as traffic and weather conditions), and the appropriate business rules to analyze that information. Platforms should be configured so that insurers can easily and seamlessly integrate standardized data from new sources (including third parties), which can then be combined with other information such as legacy insurance data. Such platforms must be flexible and scalable, with the potential to link to various applications and analytic capabilities, including scoring models and segmentation, driver identification, and risk projections based on variations in route.

Customer interfaces include web portals and apps for retail and business customers as well as interfaces to third-party databases and applications. Relative to the other two building-block technologies, interfaces are not expensive, but they are critical to the customer experience and thus should emphasize user-friendliness and features that directly enhance customer interactions. There is no one-size-fits-all approach, and insurers can opt for an open or closed platform. We expect that open systems will most likely take hold, however, because central telematics technologies like OBD-II ports are already standardized, and regulation in the industry is trending toward support of open systems with customers owning their driving and vehicle data.

Enlarging the customer data pool

Through active participation in the connected-car ecosystem, insurers can build on their current customer base, distribution power, and stock of personal data related to motor-insurance contracts. Most insurers already possess a lot of historic claims data, but these data likely will not have been collected, categorized, and stored in a way that would make them immediately useful for developing or supporting connected products and services. Insurers will therefore want to build up their own connected-driver databases—a course of action that could put them in direct competition with automakers, digital players, and other companies in the ecosystem. In the short term, insurers will need to secure access to connected-driver data through their own sensor technologies (for example, smartphones or retrofitted devices) or through partnering with automakers to access data from manufacturer-installed devices. Over the medium term, insurers must prepare for an era in which installed devices from car manufacturers will dominate the market. At that point, insurers will possibly have already achieved such a strong position in the market that car manufacturers will see the potential benefits of partnering with them. For example, insurers could be regarded as the trusted data owners, or they could offer attractive value-added services such as providing customers with information on risky street locations based on the frequency of accidents.

Digitizing customer interactions

Insurers have typically had limited points of interaction with customers. Moreover, those interactions are generally disagreeable because they often deal with contract negotiations, claims management, and other potentially contentious processes. Participating in the connected-car ecosystem opens up opportunities to increase and improve the tenor of those interactions, helping insurers become trusted partners to their customers. Insurers could assist in the supply and installation of dongles and other stand-alone devices required to connect vehicles to wide-area networks,

for instance, or deliver other physical services. As insurers increase the number and frequency of their customer touchpoints, they should consider different ways to digitize those interactions to collect valuable information from them (in compliance with consumer-privacy regulations and standards). Smartphone apps, for example, provide a natural mechanism for insurers to interact with customers and to gather important information that will make it easier to share the most relevant offers, products, and services with customers. In this way, insurers can increase customer loyalty and reduce churn. Additionally, insurers will need to carefully decide when to invest in direct customer interactions and when to use intermediaries. For instance, insurers may provide assistance services, such as towing and remote maintenance, that are delivered by partners but coordinated internally.

Building up internal know-how and capabilities

Competing in the connected-car ecosystem may require capabilities in areas that have not typically been needed in the insurance industry—for example, product development, data analytics, machine learning, and supply-chain management. Companies must decide on the critical layers of technology that should be developed in-house (analytics capabilities, for instance) and the core skills and assets that are unlikely to become commoditized anytime soon (such as product development and network management). One in-house capability that will become increasingly important for insurers is the ability to work in cross-functional, agile teams.¹ These teams will typically include actuaries with the skills to calculate scoring, data scientists with big data expertise, market-management experts to understand customer demand, operations experts to provide services, and product developers with platform experience in different applications. In addition, IT will increasingly need to work with different business units to identify new market opportunities. Not only will cross-functional collaboration be necessary, but external

collaboration with partners and suppliers will become increasingly important. Many of these collaborations will span not just companies but also industry borders. In those instances where insurers and other ecosystem players are competitors in connected-car services but traditional partners in other lines of business, a commitment to “coopetition” may be required—managing relationships that are alternately cooperative and competitive.



The connected-car ecosystem is fast becoming a reality with the continual release of new applications. Indeed, innovations in the field seem limited only by the imagination of the businesses involved. Take, for example, how additional data provided by a connected-car device could be used to understand the force of an accident, leading to better medical diagnoses and treatments of those injured. Such novel applications will help open up new sources of profitability even as existing revenue streams are being redistributed. For insurers, that means moving fast to build the right IT assets and capabilities. After all, in any fast-changing market, it’s typically better to play the role of the innovative disruptor rather than the company being disrupted. ■

¹ Satty Bhens, Ling Lau, and Shahar Markovitch, “Finding the speed to innovate,” April 2015, McKinsey.com.

Markus Löffler is a director in McKinsey’s Stuttgart office, **Christopher Mokwa** is an associate principal in the Cologne office, and **Björn Münstermann** is a principal in the Munich office, where **Johannes Wojciak** is a consultant.

Copyright © 2016 McKinsey & Company.
All rights reserved.