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Oliver Wyman study on networked vehicles

Connected cars: the smartphones of the auto industry

- **Infotainment systems are about to undergo a dramatic transformation**
- **The fight for customers has become a bruising battle**
- **OEMs will have to adapt to the realities of the online world**

The signs are clear: a revolution is brewing in the telematics market. New technologies, apps and services will take automobile safety, comfort, communications and entertainment to a new level in years to come. In the end, the car will turn into just another mobile device in the online world. But the complete networking of the vehicle is creating some striking challenges for OEMs. If manufacturers do not want to cede authority over the complete solution to the heavyweights of the IT and consumer-electronics industries as they transition from the "connected car" to the "connected life," they must shift into high gear to prepare their business models for the arrival of the networked vehicle. An attractive, customer-driven product range is just as much a key to success as modifications to the faster innovation cycles and carefully planned partnerships along the value chain, according to the Oliver Wyman study "Connected Cars – the Smartphones of the Auto Industry."

Consumer end devices like smartphones and tablet PCs have unleashed a powerful wave of functions operated in totally new ways. At the same time, people's desire to communicate whenever and wherever they happen to be at any given moment has climbed perceptively. This megatrend is now rolling through the automotive industry, clearing the way for a completely connected car based on technology that is more and more powerful, including the new mobile-communications standard LTE. Vehicle networking will make huge strides in terms of functionality and connectivity. And prices will fall steeply. As a result, the car will become just another gadget among the endless number of intelligent end devices available in a totally connected world.

In the next five years, experts expect a massive wave of connected cars will pour into the market, touching every vehicle class as it rushes forward. In 2016, 80 percent of cars sold around the world are expected to be connected. By then, about 210 million connected cars will be rolling down the world's roads. Compared with today's level of 45 million cars, this will represent an annual growth rate of more than 36 percent. In particular, Western Europe will gain ground. While North America will continue to dominate the global telematics market with about 67 million users in 2016, Western Europe is expected to generate annual growth rates of 49 percent. As a result, the number of users will climb from 6.5 million in 2011 to 48 million, catapulting Western Europe to second place behind North America.

Tremendous uses, huge challenges
Vehicle connectivity pays off for drivers in numerous ways. In everyday driving situations, these benefits include lightning-like assistance after accidents provided by an automatic emergency-notification system, virtual real-time vehicle tracking following a theft and pre-diagnosis of breakdowns. The system can also help find a parking place and provide up-to-the-minute information like traffic updates. Furthermore, the networking with PCs, smartphones and MP3

players facilitates synchronized and, thus, consistent data on all devices at all times. This applies to telephone numbers, appointments and e-mails as well as to audio files that will be stored in clouds on central servers over the mid-term. Networking also makes it possible to tap the vast ocean of information available on the Internet.

But this requires a form of operating options and design that won't distract drivers from the main task at hand: safely maneuvering their vehicles down the road. Automakers will have their hands full as they work to introduce the systems, and these jobs can be managed only if they are incorporated into a clear strategy. For this reason, manufacturers of premium vehicles in particular are intensively exploring how platforms and the service range of their integrated total systems can be fitted together in the future. The road leading to the connected car as a new mobile end device will be filled with potholes for all manufacturers. The main challenge is to offer solutions that are easy for customers to understand, that can be operated intuitively and that are affordable. The automotive industry must adapt itself to the blistering cycles of innovation in the online world and enter thoughtfully considered partnerships in order to generate long-range profits in this convergent business environment.

Positioning will shape future direction
Individual decisions will be significantly shaped by the OEMs' positioning. These companies must clearly spell out how they intend to refine their proprietary systems, some of which are highly profitable, in order to stake a claim in the lucrative business of this new, open world. In the past, automakers have generated profit margins of up to 60 percent with their closed systems. Manufacturers with lesser innovative skills have achieved little market penetration and vertical integration in terms of modern infotainment systems.

In the area of connected cars, many of them will let others take the wheel and instead draw on complete solutions offered by strong IT and consumer-electronic partners as a way of providing customers with a competitive offer. Premium manufacturers, who have to define themselves in the marketplace through the innovations they add to these very systems, must continue to defend their turf by serving as full-solution providers. This will be the only way for them to preserve their relationships with customers. On the one hand, they should set up their own attractive service platform that will serve as a guidepost in the marketplace. On the other hand, they must establish a highly dynamic value-chain system that methodically integrates the best partners for the respective systems and services while maintaining their position of leadership.

Step by step into the open world
This will require the OEMs to gradually open their connected systems and to create interfaces in their head unit to the widest variety of mobile end devices. For instance, they could integrate the functionality of an iPhone into their system and thus continue to hold sway over the customer. In addition, manufacturers could design an attractive range of services and offer it to the broadest possible customer base. App stores are one option, enabling customers to create their own package of applications. People's willingness to shell out money does indeed continue to be limited. But customers have also realized that high-quality online services do have their price.

As a result, automakers must take advantage of the financing models in the online world, including advertising revenue, commissions and licensing fees from service providers. Combination packages can also be wrapped together, including insurance policies revolving around the eCall system that will become mandatory for new cars in the EU as of 2015. A car customer could be given significantly lower premiums for an insurance policy that is combined with a telematics offer if the driver is willing to reveal his or her movement data and, thus, his or her risk profile. Just a few years ago, General Motors successfully applied a similar strategy when the eCall was introduced in the United States. The automaker sold the emergency-call system along with a low-priced cell-phone agreement. This interface opened a pipeline for other services to be offered to the customer. The high costs of total vehicle networking cannot be covered by the

customer alone. For this reason, every imaginable value-generating source must be tapped in this business.

Tough competition
A highly complex value chain extends behind the total solution. The new Oliver Wyman study has determined that five groups of providers will battle OEMs for the best position in the networked vehicle. These five groups are: end-device makers, software companies, network providers, Web-service companies and content providers – unlike automakers, these players are well versed in the business of short innovation cycles. To go along with the development of an attractive, customer-specific total system and with innovative models designed to generate revenue from the platform and services, OEMs will have to adapt to the fast time-to-market scenario as well as the short product cycles found in the IT and consumer-electronics industry.

This will require the drawn-out development of a new vehicle generation to be separated from the fast-paced life of infotainment systems. For this purpose, a gradual opening of system architectures is unavoidable. In the end, automakers will have to forge alliances with select partners along the value chain in order to offer highly appealing and dynamic total solutions. At the same time, this alliance-forming effort should be arranged in such a way that control over the entire system remains, as much as possible, in the hands of the OEM. Addressing these challenges must be placed at the very top of the to-do list for extremely innovative automakers. It is a fact of life. In the next five years, anything related to the connected car will take off. Automakers must get ahead of the pack if they intend to maintain their profit margins in this field and lend new innovative strength to their brand.

In 2016, about 210 million connected cars will be rolling down the world's roads. Compared with today's total of 45 million such vehicles, this will represent a compound annual growth rate of 36 percent.

Market penetration of connected cars
in millions of units

210

18%

CAGR
36%

45

5%

2011

2016
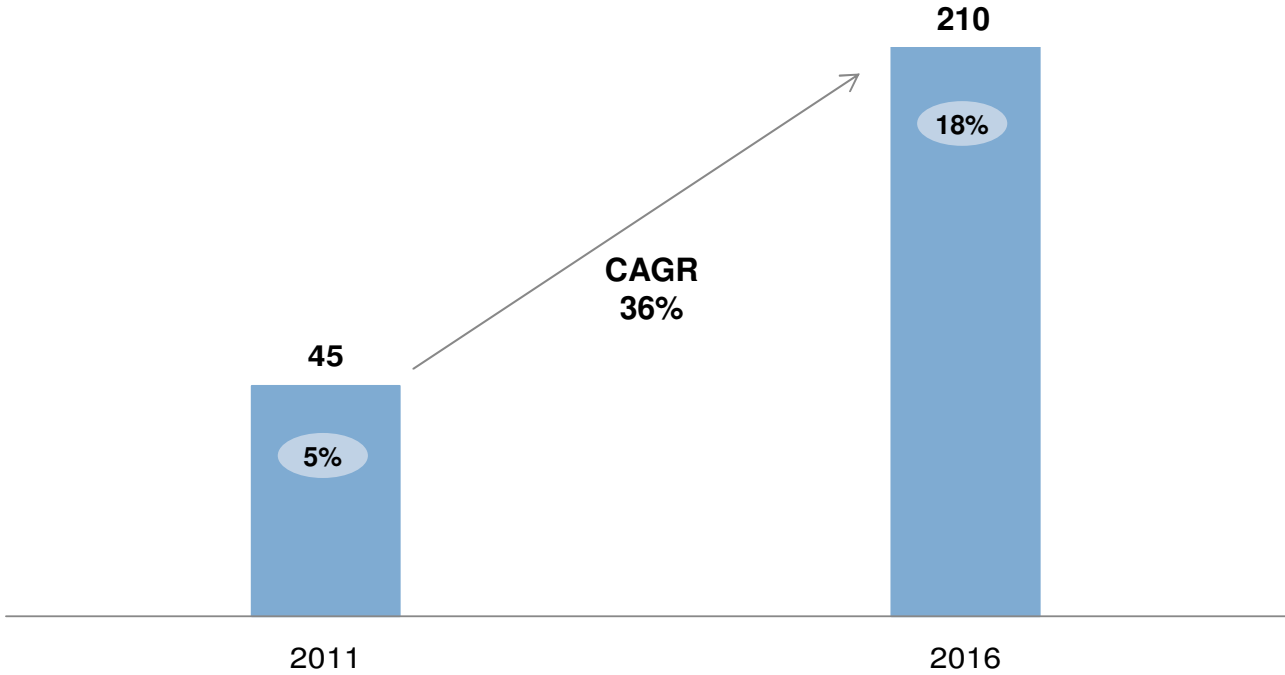
x%   Share of vehicle stocks worldwide

Automakers' positioning characterizes the system solution. Particularly innovative OEMs must prove themselves as providers of complete solutions.

	Proprietary system $\longrightarrow$ Open platform		
Integrated solution	**Proprietary service platform of the OEM**	**Service platform tailored for the OEM that is based on a standard solution**	**Service platform tailored for the OEM that is based on an open-source solution**
Mobile solution	**Proprietary mobile device of the OEM with an exclusive service platform**	**Proprietary mobile device of the OEM with a standard service platform**	**Third party mobile device with a standard service platform**

Proprietary system $\longrightarrow$ Open platform