The 'Connected Car'

Advancements in technologies are enabling the automobile to extend the driving experience beyond traditional vehicle transport.

By Prasad Satyavolu

Over the last few years, automotive electronics and wireless technologies have grown by leaps and bounds. Advancements in these technologies, combined with device convergence and changing lifestyle demands, are enabling the automobile to extend the driving experience beyond traditional vehicle transport. Today, the 'Connected Car' zooms beyond traditional in-vehicle infotainment. The connected car may well have faced challenges in taking off, but the inflection point is just around the corner. The next wave of connected cars will see businesses leverage technology to address issues of urbanisation—road congestion, pollution and safer mobility. The features of a connected car are now a part of a car buyer's basic expectation. With the help of digital technologies, greater personalisation will be the next move for businesses to stand out in this industry. In emerging markets, millennials with growing purchasing power do not view cars as mere means of transport. The car is becoming an extension of consumer individuality and consumers want to travel in the most efficient and entertaining way possible.

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Transcending boundaries

The connected car, as a concept, is branching out into multiple areas of consumer convenience such as seamless urban mobility, assisted driving, driverless cars, and car-sharing. These are targeted at addressing issues such as road congestion and driving stress, and offering better freedom of mobility to senior and differently-abled citizens. Moreover, the connected car initiative is a collaborative effort between different technologies and competencies. The broad array of end-to-end connected car solutions and services can be categorised from the car OEM standpoint as 'Inside the Car' (in-vehicle systems development, testing and implementation), 'Outside the Car' (consumer-facing apps, integration with dealer/OEM systems, etc.), and 'Around the Car' (urban mobility, cross-industry monetisation, etc). Such Machine-to-Machine (M2M) interaction presents a world of new mobility, new opportunities and new challenges for an emerging ecosystem of companies — from automakers and OEMs, through banking and financial services and insurance providers and retailers — to generate new streams of linear and nonlinear revenue, all the while providing a unique experience to customers.

Looking down the road

Connectivity solutions and embedded telematics present a market opportunity of over $20bn by 2025. Existing services may soon be superseded by V2V (Vehicle-to-Vehicle) and V2I (Vehicle-to-Infrastructure) technologies that will help millions of cars inter-communicate on traffic, safety and real-time information.

Pan-industry applications, like pay-by-insurance and advance tolling, will pave the way for further networked industry applications. The connected car business will thrive on the aforementioned factors if automotive majors, wireless carriers and engineering IT service providers form effective partnerships to build open platforms using technologies like LTE broadband, HTML5, virtual network computing and cloud computing.

Going forward, players across the ecosystem should be mindful of the following:

- A growing number of telematics mandates are being introduced by governments for services (like, e.g. the European Union's eCall initiative or stolen vehicle tracking).
- Integration of advanced driver assist systems with V2V and V2I communication holds promise to reduce crashes.
- The separation of services between smartphones and on-board communication devices will also reduce complexity with respect to connectivity provisioning.
- Future connected car services may require combination of two or more wireless data communication technologies.
- The development of sophisticated and integrated human machine interfaces to avoid driver distractions will become more viable as more cooperative systems become available.

The author is Head of Innovation, Manufacturing & Logistics, Cognizant