Automotive industry: Balancing growth amidst challenges

The auto industry continues to make headlines every day - from connected vehicles to autonomous driving, the industry is seeing revolutionary changes. In our last article, we highlighted precursors towards a new transportation ecosystem, wherein customers no longer buy vehicles but instead purchase a suite of eco-friendly mobility services, end-to-end.

However, the path to this future is more complex for traditional OEMs (Original Equipment Manufacturers), industry outsiders and startups than a first glance might suggest. In this concluding article, therefore, we draw upon our research to present three key challenges that the aforesaid ecosystem is scrambling to address.

1. Shared mobility – a wealth of opportunities amidst a bumpy ride ahead

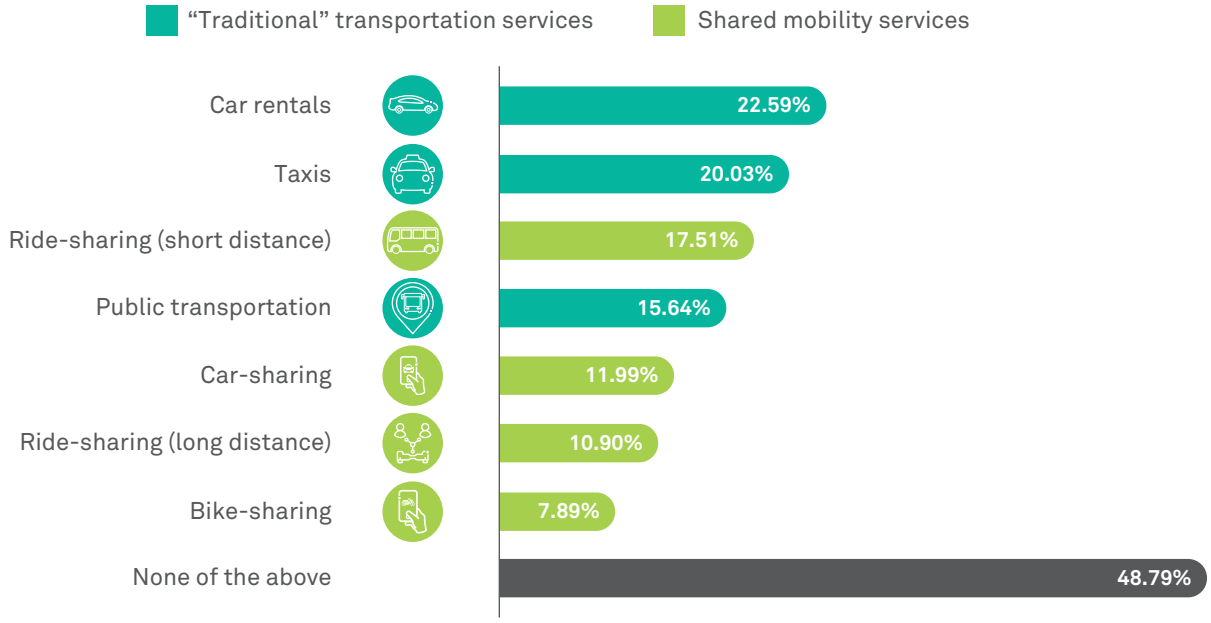
Shared mobility is easily the biggest hurdle to surmount. The fundamental definition of an automobile as 'a physical device for transportation' remains intact. However, the creation of completely new services for monetization requires collaboration across the value chain on a scale never imagined earlier.

> We move away from the conventional mindset as people no longer need to own an automobile but can still move effortlessly from point A to point B. The infrastructure to get this going is a collective challenge to overcome.
>
> **Raghavendra Vaidya,** Senior Vice President- IT at Mercedes-Benz R&D, India

Further, statistical evidence indicates that shared mobility is yet to reach mainstream adoption

Shared Mobility Adoption

Which of these services have you booked online (website or app) in the past 12 months?



Based on a survey of 2,027 Americans aged 18 to 64 conducted in Q4 2017
Multiple answers allowed
Source: Statista Global Consumer Survey 2018

In this regard, public authorities and policymakers have already begun planning for the long term. In Western Europe, governments are working to create standards and specifications for Intelligent Transport Systems (ITS), encompassing services such as travel assistance, passenger information and trip planning. Similarly, China's State Grid is speeding up plans to build 120000 public EV charging facilities by 2020 to support the proliferation of electrified vehicles.

Our viewpoint is further validated by Raghavendra Vaidya as follows:

In China, the government has built a solid roadmap and is pushing OEMs to develop and launch electric vehicles. Both the USA and Western Europe have a mature mindset towards the concept of driverless cars and are building shared infrastructure to support the 'connected' vision. India, on the other hand, can move quickly up the ranks, with the government drafting plans to transition to electric vehicles by 2030.

OEMs, meanwhile, are partnering with mobility startups in anticipation of a future of reduced car ownership. For instance, Toyota Motor Corp has invested $1 billion in ride hailing app, Grab , while General Motors Co. has invested in ride services firm Lyft.

Overall, we observe concerted public-private participation in mature markets to enable seamless mobility. This gives enormous potential for all ecosystem players to work progressively on combining autonomous driving and connectivity-based revenues through delivery of mobility services.

As mobility matures, a vehicle becomes an office, a meeting room and a device—all rolled into one and talking to each other, introducing a plethora of opportunities. Emergence of ride-hailing and ride-pooling initiatives have already changed the contours of shared mobility. As government regulations catch up and per-unit travel cost comes down through optimal utilization of resources, this sector will flourish. From a business standpoint, mobile-app based services will face a serious challenge scaling up to cover a broader scope of interactions from sectors and suppliers currently non-existent.

Gaurav Suman, General Manager - IT Wholesale, Daimler South-East Asia.

2. The insurance conundrum

To support AV and connected future, insurers are constantly re-evaluating their business models. For instance, insurers in the US have come up with a usage-based or pay-as-you-drive (PAYD) model whereby costs are dependent upon vehicle type measured against time, distance and place. Coupled with advancement in telematics, drivers can have flexible premium fees, with optional value-added services such as tracking of stolen vehicles.

The advent of autonomous vehicles does not signal the death knell for traditional automobile. There is still going to remain a hybrid market from traditional cars to semi-autonomous to fully vehicles.

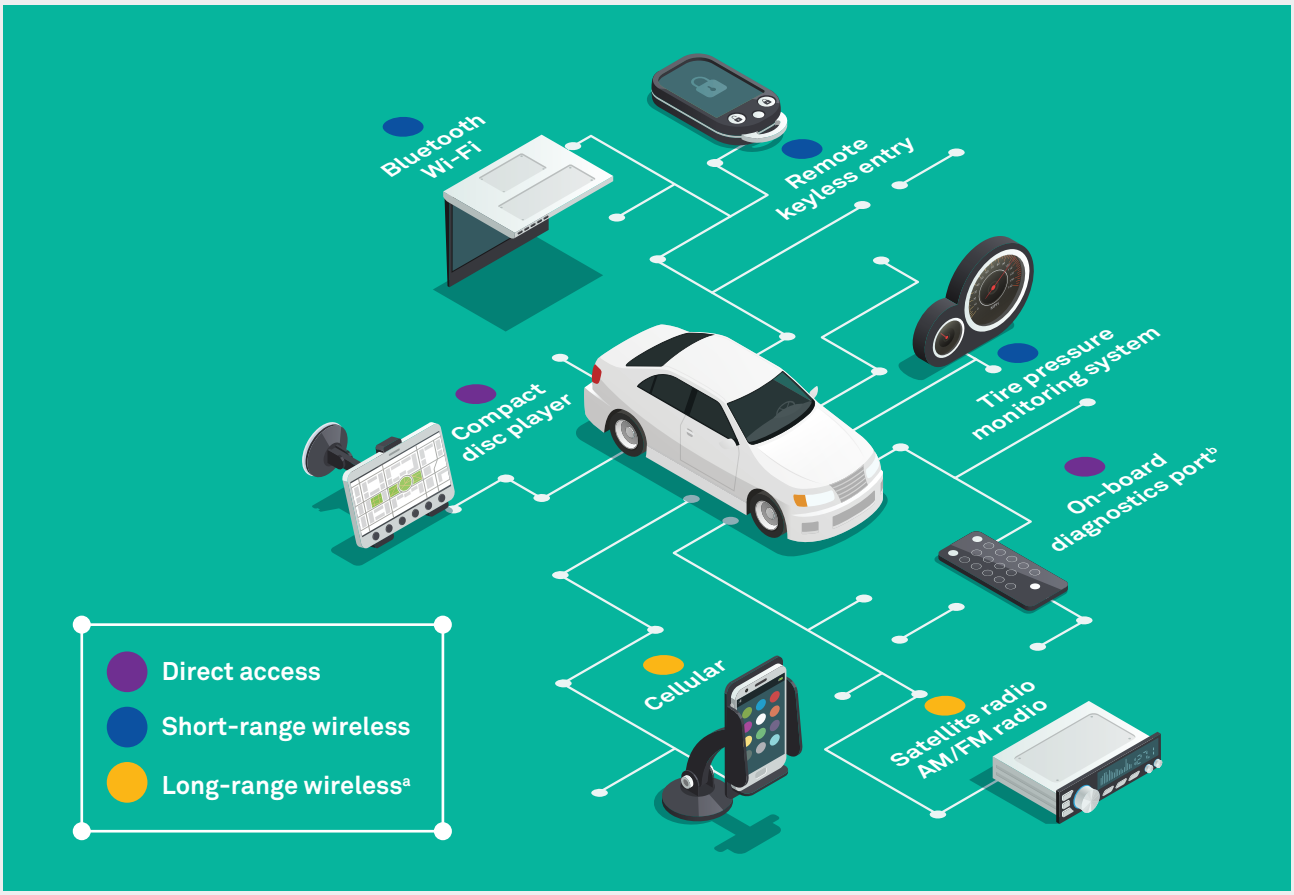
Raghavendra Vaidya, Senior Vice President- IT, Mercedes-Benz R&D, India

Overall, there is a host of challenges for incumbents and startups to collaboratively resolve.

3. Automotive Cybersecurity – Mounting threat surfaces

With connected vehicles, evolve a software-centric ecosystem. Historically isolated in-vehicle components are now becoming part of a network. Furthermore, as V2V communication gains traction, a susceptible system in a car can put every vehicle in proximity at risk.

From ECUs to the federally mandated OBD-II port to infotainment systems, potentially vulnerable threat surfaces continue to expand.



To tackle this, regulators worldwide are establishing systems and processes at multiple levels – across supply chain, gateway, infotainment and aftermarket services. Prominent here is the 'layered approach' to vehicle cybersecurity by National Highway Transport Safety Association, USA, briefed below:

- Isolation of hardware and software safety-critical control systems
- Continual monitoring of electronics systems architecture for real-time detection and response
- Industry-wide information sharing, standards and collaboration through Auto-ISAC (Automotive Information Sharing and Analysis Centre)

Clearly, there is increased impetus towards building a "secure" automotive computing system.

Conclusion

As technologies and markets evolve, only a sustainable business model can support the vision of automobile as a "software on wheels". Through this article, we have attempted to identify the myriad challenges towards achieving this vision. We believe that this understanding can help the entire automotive ecosystem to adopt a scenario-based approach to strategy, one that is future-proof to drive innovation more efficiently.

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