Connected & Autonomous Cars – Industry Overview One: Shifting Frontiers

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This is the first of four analyst corner reports that will look at why the dynamics of the connected and autonomous car space are so fascinating, and how understanding the complex and interconnected technologies and trends can assist ecosystem players to be best positioned for future success. The first three blogs will look at factors causing a tectonic shift, how being blind to adjacent and shoulder technologies can be dangerous and why pivoting to adjust to new global technologies is essential. The fourth blog will look at how Globetouch, sponsor of these blogs, has successfully inserted its business model at the intersection of telecoms and automotive markets and created a unique service offering taking advantage of these themes.

There is change occurring at the frontier of every industry, but it's particularly noticeable in telecoms and automotive, partly due to the impact of digital transformation and the progressive march of IoT. It also involves the disaggregation of business models by digital startups, and the application of new technologies that fundamentally change the nature of the products being sold, as well as the services and support around them.

In most cases, these businesses have established beliefs and customs which are the paradigms that drive their business models. To support these paradigms and related business models, organizations are created with a single focus on efficiency and effectiveness, but these organizations can also become isolated and intolerant of new ideas that affect this efficiency. It can also lead to organizations becoming blinded to the risks and opportunities in their operating environments. This paradigm and silo effect is something that businesses have been struggling with for many years.

When the disaggregation to business models and introduction of new technologies occurring at the frontiers of every industry are combined with the paradigm and silo effect plaguing most established businesses, many consequences are likely to follow; some are just starting to materialize and others are yet to emerge. These factors can also cause companies to lose touch with the changing needs of their customers, particularly in a 24/7 news cycle and whirlwind of social connectivity, resulting in the push of products and business models when customers are pulling other products and services into their lives. This is not a totally new phenomenon but it's one that's accelerating.

A classic example of this is the demise of Motorola, Blackberry, Nokia and Ericsson's handset and infrastructure businesses that has occurred over the last ten years in the wake of Apple's introduction of the iPhone, the growth of 3G and 4G cellular technologies and the continued rise of South Korean and Chinese manufacturers.

It can be argued that several factors are driving a similar early-stage tectonic shift in the auto industry, and these are a result of a series of new technologies, platforms and business models that are redefining the concept of the car.

One factor that leverages the rise of the smartphone app is the emergence of a gig economy that allows people with talents, skills and time to perform tasks in a disaggregated business model on a self-employment basis. This has enabled Uber to redefine its ride share and taxi business models, and has taken advantage of the increasing levels of city dwelling and the shift in millennials' preferences away from owning cars in cities to exploit the shared economy.

Another factor is the arrival of Tesla, which has proven that a radical rethink of the car as a platform, and the utilization of new technologies wrapped together with the three lessons learned from the iPhone -- sleek design, over-the-air updating and revolutionary user experience -- can shift an entire industry. Frankly, few in the industry really believed that a battery-powered car could achieve the acceleration and range of the Tesla Model S. However, the real threat is that the unique capability of

every car manufacturer -- the ability to design and build complex, high-performance combustion engines -- was proven to be less unassailable than everyone assumed.

Further, the fact that a battery-powered car requires 90% fewer parts means that it is simpler to build so that in the future, as scale and efficiency increases, the cost differentials will erode. Therefore, the 20-plus Chinese auto manufacturers that are building cars for the largest and fastest-growing car market pose such a threat in the future. As they gain cycles of manufacturing experience, and as they design and build increasingly simpler electric cars, encouraged by the national government to overcome city pollution, the economic advantage will shift their way. It is totally realistic to believe that at least three of these manufactures will turn their attention to global markets, and pose significant threats to the established OEMs in the next five years. People who doubt this should consider the rise of Korean brands over the last five years.

A third factor driving this tectonic shift is the unprecedented advances in the development of autonomous vehicles by companies, such as Google, that are outside of the car industry. These early-stage autonomous cars are leveraging the artificial intelligence (AI) and computer vision (CV) technology advances made in recent years. Additionally, they are being aided by staggering innovation in the semiconductor industry, with graphics processing units (GPUs) and combination solutions that blend the capability of high-performance CPUs with GPUs, as well as application-specific chips (ASICs). Progress has been so staggering that it has prompted all the major OEMs to participate in collaborative efforts, and accelerate their own development. It's anticipated that nearly all the manufactures will have some form of autonomous vehicle in the model line-up by 2021.

Autonomous vehicle advancement is also something that the rideshare companies, such as Lift and Uber, are actively working on with partners, which could radically change their economic business model as human drivers account for 70% of their operating cost.

Consequently, the OEMs have had to finally wake up and realize that their existence could be in jeopardy if they fail to recognize and embrace these changes. This has prompted their shift in focus to providing mobility as a service, rather than simply providing a car for the consumer.

The article is sponsored by Globetouch Inc., a leader in global connectivity services for the connected car and the IoT. The company fully supports the premise of this article and has built an ecosystem of mobile operator networks to provide seamless M2M and IoT solutions through its enabling infrastructure and next generation control center. It provides datacenters in multiple global locations, enabling it to provide connectivity for a wide range of devices and operators, while empowering a multitude of business models internationally, including the evolution to MaaS scenarios. To learn more, please visit ***www.globetouch.com***