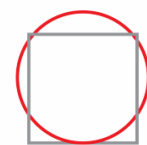Industries > Automotive

Connected Cars – What Can I Do While I Wait for My Self-Driving Car to Arrive?

We look at the connected car industry outside of autonomous vehicles.

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GROUP

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ABSTRACT: While the promise of self-driving, "autonomous vehicles" has captured the attention of the media and consumer, the automotive industry and connected car ecosystem has been rapidly developing a diverse array of applications, services, and consumer experiences. Automotive OEMs and application providers are responding to rising consumer demand by including embedded connectivity in an increasing number of new vehicles. Applications in the infotainment and ADAS segments, geared towards entertainment and safety respectively, have proliferated and will continue to develop parallel to autonomous vehicle targets. Moreover, mobile connectivity will eventually become a standard on any new automobile – most importantly, OEMs that do not adapt to this new ecosystem will be "left in the dust."

The automotive industry has been abuzz about the "connected car" and the potential services, revenue pools, and enhanced customer experiences it can inject into what was perceived to be a mature industry. The gradient of technological applications range from the simple (e.g., preventive maintenance) to the embracing of advanced AI capabilities (i.e., autonomous driving) – nonetheless, the concepts put forth are exciting and have the potential to change how people around the world go about their daily lives.

While Google, Tesla, and Uber have announced aggressive initiatives to pursue autonomous vehicles, it will be years before the technology, and legal framework, is developed and catalyzes true widespread adoption.

In the meantime, OEMs, middleware vendors, application players, and cloud and telecommunications leaders are coalescing to form the connected car ecosystem. See Exhibit 1. While OEMs continue to exert a "walled garden" strategy to ensure brand, valuable CRM, user experience, and monetization of an existing infrastructure (e.g., dealer-networks), application vendors have proliferated, especially in the consumer facing segment of the market. Some estimates put the potential market size for connected car services at $40B by 2020.

The "Apps" Segment

Unsurprisingly, the entertainment segment has experienced rapid development, both for tethered and embedded modalities: music services like Spotify, Pandora and Google Music have previously connected to a vehicle's speaker system in a mirrored or tethered form through a user's Bluetooth connectivity. However, increasingly, automobile OEMs have entered into agreements with application companies to provide embedded application capabilities into an automobile's system itself, prompting future questions related to the role of telecommunications players in the equation and shared business models.

Exhibit 1: Connected Car Ecosystem (Note: Not Exhaustive)
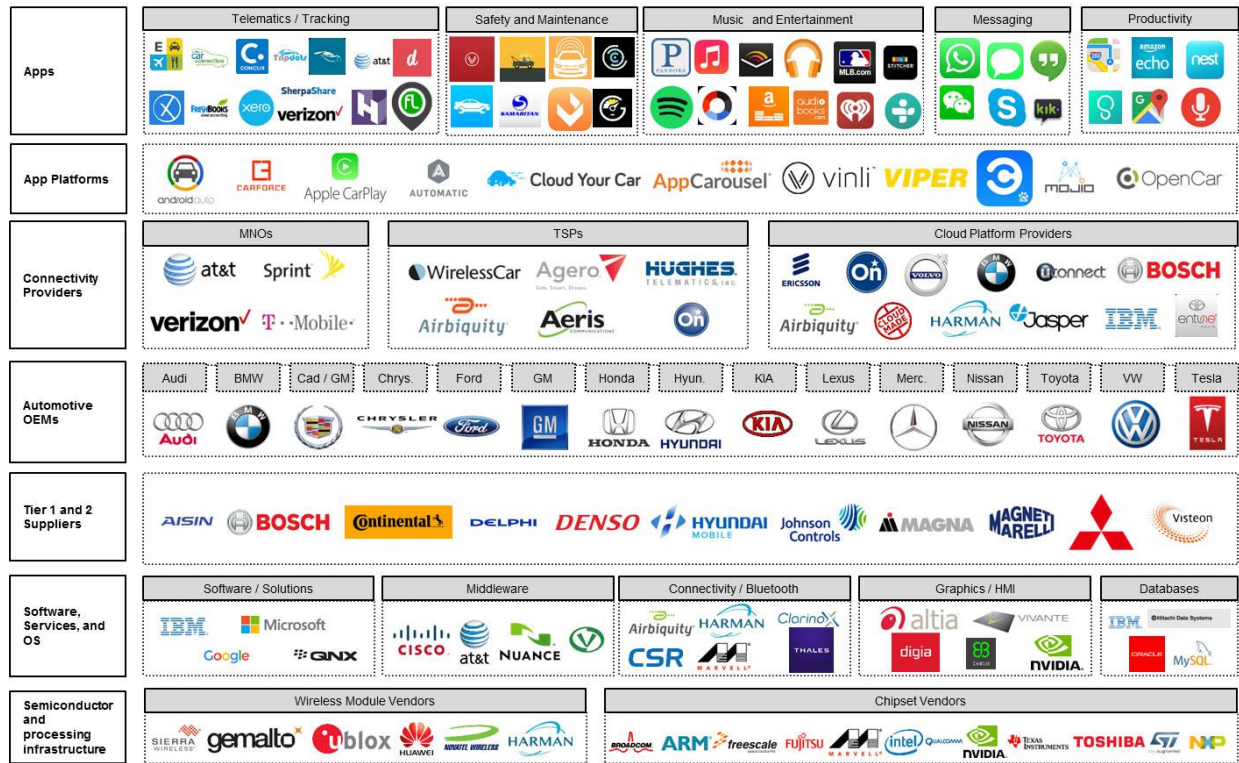
Application Platforms

The connected car application ecosystem is expected to exhibit similar development as the mobile phone ecosystem – application "platforms" such as Android Auto and Apple CarPlay have afforded developers a platform to create, distribute, and monetize on applications tailored for a diverse array of OEMs, model types, and consumers (albeit, most current offerings entertainment-focused). The developer community

Connectivity

As wireless and LTE infrastructure continues to penetrate, OTT players like Netflix will take advantage of bandwidth thresholds to stream directly into vehicles and

MSOs players can distribute their OTT add-ons in a similar fashion. Other connectivity-driven services, such as videoconferencing or enterprise applications (e.g., mobile office suits) will also experience development, but will be dependent on autonomous driving capabilities as service features are limited without significant driver assistance.

Naturally, proliferation of connectivity-driven services will be dependent on the inclusion of mobile connectivity or antennas in new vehicles by OEMs, though there are no indications that OEMs are against putting additional connectivity infrastructure in new vehicles. Most car manufacturers have begun including mobile connectivity in some of their vehicles and customer demand will quickly push this feature to be standard on most vehicles.

Advanced Driver Assisted Systems (ADAS), Enterprise, and Data

After entertainment, the safety and operations segment of the connected car industry will be the fastest to develop. These services have had predecessors, such as stand-alone GPS units and driver assistance programs like OnStar, but including them directly on the car's computer system opens up a wider range of possible applications.

For example, automatic emergency services notifications and immediate roadside assistance are essential services that are made possible with constant mobile connectivity and do not require much additional development. Also, navigation and maps embedded directly into the console can make traveling much easier and reduce traffic congestion by providing better real-time traffic data. While underlying data, functionality, and overall experience can be ported over from existing applications, connectivity will represent the biggest obstacle to deployment.

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An enterprise application that is quickly adaptable is vehicle tracking / telematics. While these types of solutions are available on large container trucks, installing this type of tracker is presently not cost-effective on passenger-size vehicles. That said, on-demand driving services, and other public tax and small-scale logistics companies that enable fleets with mobile connectivity can efficiently track fleets and improve operational efficiency.

Services like preventive maintenance, health monitoring, and performance metrics will take much longer to see widespread usage due to inaccessibility of data and longer application development times. While some companies have come out with hardware that can be attached to the car, adoption is low implying OEM relationships and alliance to drive adoption.

Notably, the true value across most applications may converge around the data collected – for the first time, companies across the value chain, with appropriate access, can analyze day-to-day usage, operations, and interactions intra-car and inter-car (e.g., vehicle-to-vehicle).

If the data is aggregated and analyzed, for example, insurers could develop tailored, custom pricing model driven by variable credibly linked to risk: route-specific risks, infrastructure exposure, driving patterns, regional data, and related parameters. Moreover, OEMs can leverage data optimize offerings, incent consumers, and differentiate.

As the ecosystem develops, both core participants, technology "disruptors," and ancillary players (e.g., insurers, mobile network operators) will be confronted with common themes: disruption, business model innovation, "co-opetition", partnership strategies, M&A, and consumer value propositions. However, the continued development of the ecosystem is accelerating, fragmenting, and at an inflection point. As the industry develops, there are a number of key topics to monitor:

- **Partnership Strategies –** with OEMs actively investing in telematics and new technologies, how will partnerships evolve to balance complementary advantages: supply chains, software, innovation, and consumer interactions.
- **Strategic Scenarios –** while many champion a disrupter-take-all strategy, how will OEMs react to the fragmented ecosystem and complex / increasing transaction costs being incurred to add connected capabilities to future models?
- **Autonomous Driving Innovation** – with many companies now investing heavily in autonomous driving, progress on a working, scalable solution may be faster than expected. Since self-driving cars require connectivity, faster advancements in that segment could increase interest and investment into the connected car ecosystem as a whole.
- **Security Concerns**– connectivity in cars make them vulnerable to outside cyberattacks, which could have disastrous consequences, as the FBI recently warned. While some cybersecurity companies like Gemalto have already began creating auto-focused solutions, assuaging consumer concerns about hacking, as well as how the data generated is used will take some time.
- **Regulatory Framework** – there are only a few companies with permits to test self-driving cars, and as they get more advanced they will likely face heavy regulatory scrutiny. While does not affect entertainment services as much, safety services may have regulations put on them
- **Standardization** – the connected car landscape is very fragmented right now, with every player fighting for market share. It may lead to a split app market, much like the one in the smartphone industry, and make data aggregation difficult if each car / device measures things differently. In addition, if the various self-driving cars use proprietary technology and cannot talk to vehicles from a different manufacturer, adoption will be slowed. A standard platform would alleviate many of these concerns, and will accelerate development into autonomous vehicles.

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About Red Chalk Group's Management Consulting Practice

Red Chalk Group is a premier, boutique strategic advisor to senior executives at leading, global organizations. We are routinely engaged to advise on strategic growth platforms, technology disruption, investment decisions, and business-related intellectual property matters.

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