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Connected Cars Require a Shift in Mindset

By Steve Bell, Senior Analyst, Heavy Reading

The connected car is a complex machine comprising 50-plus sensors and, by some estimates, 100 million lines of software code. It is being subject to an intense period of innovation, both within the vehicle as well as the environment in which it operates. Consequently, the auto industry is at a decisive inflection point in terms of the core product that it produces, and the essence of the business model that has sustained it for the past 100 plus years. We shall explore some of these factors of inflection in this paper. >>

Industry Trends:

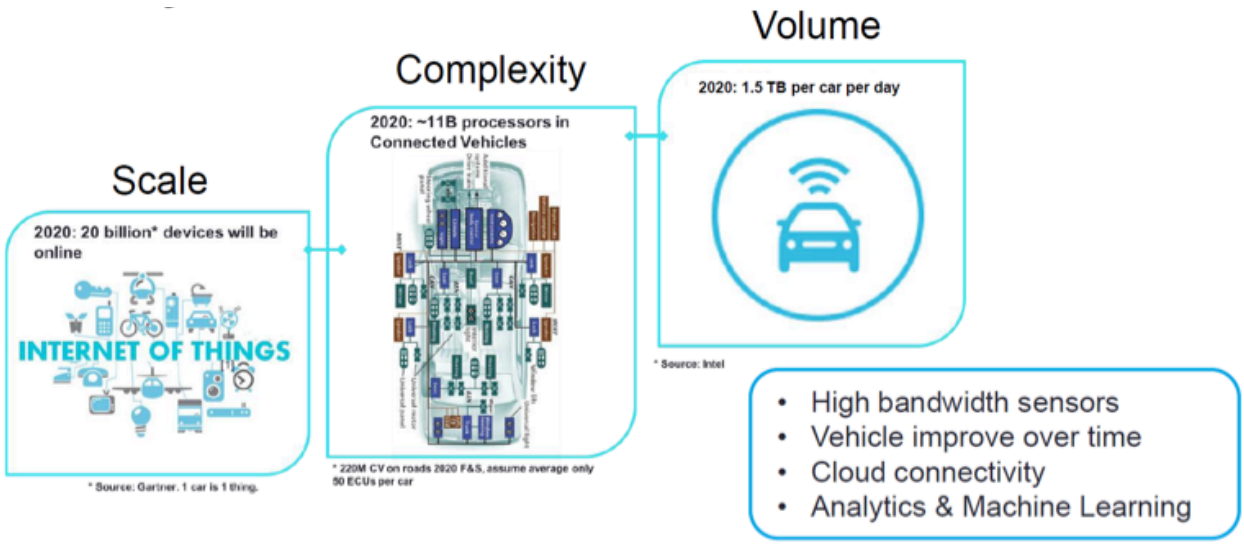


Figure 1: Automotive Industry Trends

In a presentation at the 2017 TU-Automotive Europe Conference on connected cars in Munich, Cisco Jasper shared the chart in **Figure 1** which notes that, with a minimum of 220 million connected vehicles each with 50 sensors, the total number of connected sensors in the automotive space will be at least 11 billion by 2020, and these could be transmitting as much as 1.5 terabytes of data per day. This flood of data will be taking advantage of enhanced cellular and cloud connectivity, and utilizing analytics and machine learning to enhance performance, reduce accidents and improve navigation and congestion.

This futuristic perspective - possibly an optimistic and idealistic scenario - sees the industry taking full advantage of the available and upcoming technologies. However, there's evidence to suggest that there are obstacles to achieving this situation. As an example, the total number of connected cars today is already at 280 million, or 23% of the installed base. However, the active connections are only 56 million, or approximately 20%. Based on material presented by Strategy Analytics at the same event, BMW vehicles - considered by many in the industry to be the most advanced in connected cars - collect about 1 petabyte of data annually in Europe and the US, which equates to approximately 1 gigabyte of data per car per year. Clearly, there are issues that need to be addressed and realities to be considered in order to move from today's situation toward tomorrow's possibilities.

In a previous paper, we identified the mindset shift that's occurring within the auto industry, where the product being sold is presented to the consumer not as a car but "mobility as a service." This might be as a single car or through ride sharing, car sharing or carpooling, all based on a single preferred subscription. The current estimation of this business is $87 billion, and it is forecast to grow to about $600 billion by 2025. >>

Part of this mindset shift is the requirement for automotive OEMs to think about connectivity not as a cost, but rather as a mechanism to access data that has infinite value. The uses of this data within a company are numerous, including personalized brand-specific services, preventative maintenance and better car design, and user experience based on driving and driver profiles. In an anonymized format, this data can also be used for third-party services that are part of the emerging connected car ecosystem, such as insurance and mapping companies. HERE Technologies, for instance, uses sensor data from windscreen wipers to detect when it's raining, informing drivers of slick roads, flash floods and increased breaking distances. HERE also takes vision data from on-board cameras to update maps with new signage, such as speed or lane restrictions in construction zones.

The key to achieving this mindset shift is going to be the ability to easily and rapidly extract and move data from the vehicles, and derive two things: one is monetizing and creating a business value from the data, either directly as a business or via sharing the data with third parties. Secondly, and of growing importance, is creating a fair value exchange for the consumer, who is the ultimate owner of the data, so that they agree to share it in return for services such as lower subscriptions, reduced ownership cost, or enhanced loyalty payments or services.

During a recent webinar, Cisco Jasper addressed the challenges of managing connectivity from a global stance, and shared its perspective of the four issues **(Figure 2)** that seem to dog the ability of OEMs and mobile operators in advancing the adoption of connectivity.

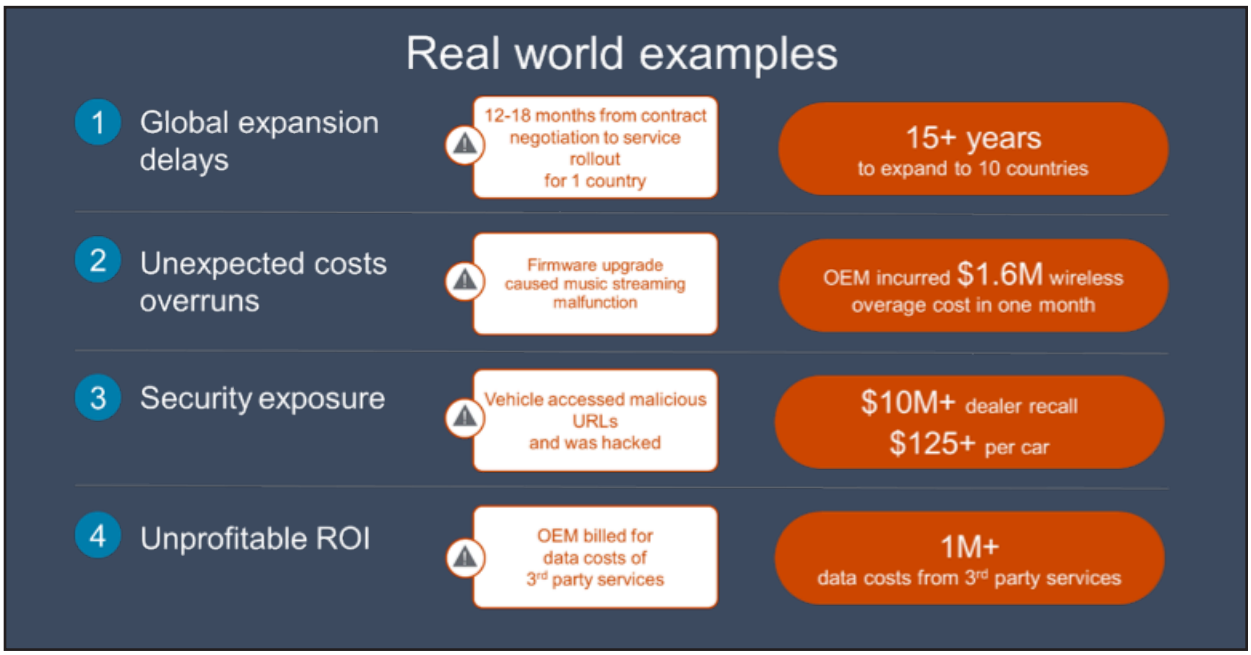
The number one issue is the time commitment is takes to roll out services in each individual country. This involves contract negotiation and service deployment which can take up to 18 months. This could potentially take up to 15 years to complete across ten countries, although it will probably take less time since most operators/companies would deploy more resources to accelerate the process - which just emphasizes the time-consuming and resource-hungry process involved.

The second issue is the cost associated with overage where plans are not set up and administered effectively, and could result in monthly overage of data charges for customers. One example quoted was an OEM that incurred a $1.6 million overage charge because of music streaming malfunction.

A third issue is security, where the lack of ability to track and update vehicles with up to date software, or to recognize when a vehicle's codes have been tampered with, can cause severe jeopardy for all parties involved. The example shared was where an OEM had to live with the dealer costs of a vehicle recall following a vehicle hack that had cost $10 million.

A fourth challenge is one that many in the IoT space are struggling with - return on investment (ROI). Part of the issue is being able to create and support a flexible and agile business model, and track it so that third-party costs don't swamp any revenue from services deployed with customers. >>

Figure 2: Real World Challenges to Connectivity



More significantly, OEMs don't need to be burdened with the issues and cost of managing a global connectivity network when they should be focused on the business of extracting value from the data. They can use third parties to manage connectivity or acquire a platform. Cisco Jasper, for example, has the capability to do connectivity management via an ecosystem of already established relationships, provide 24/7 security, analytics for monitoring and the opportunity to easily monetize services.

This is the ideal routing toward managing a connected car fleet, but the reality is that the current business context and consumer preferences have to be considered. During a recent Cisco Jasper webinar on the four pillars of a connected car program, we asked the audience to share with us their views on a couple of topics that are relevant to the development of this business. The first question was the most fundamental: Who should pay for connectivity? The responses are shown in **Figure 3,** and what's clear is the assumption that the consumer pays is out of step with general expectations, and probably explains the 80% dark scenario for existing cars. The opportunity to share the cost is not rejected out of hand (30%) but the preference appears to be for OEMs and/or third party to pay for the connection, potentially in return for access to data. >>

Figure 4: What's the Biggest Connectivity Management Problem for Your Company?

Which of the real-world connectivity management issues has been the biggest problem for your company?	64 Total Votes
Global expansion delays	14.1%
Unexpected costs overruns	12.5%
Security exposure	23.4%
Unprofitable ROI	7.8%
All of the above	28.1%
Other	14.1%

The audience was asked to share which real-world issues were causing them the biggest problem. As shown in **Figure 4**, the interesting thing that emerged was that all four are problems for 28% of the audience. Of the other 72% of respondents who chose a single issue, security exposure is the biggest, followed by global expansion and unexpected overruns. Unprofitable ROI is not considered an issue but the observation made by my co-host on the webinar, Pranav Dharwadkar, Cisco Jasper's Principal Product Manager, Connected Car Vertical, was that this could be a function of maturity; in other words, once the other issues are resolved, ROI could become an increasing problem.

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The "other" category scored high (14%), and comments from the audience indicated that concern about poor customer experience from connected services was uppermost in most people's minds, since this could impact customer loyalty. This is something that all players in the ecosystem must become cognizant of, as poor customer experience can be amplified and shared globally via social media.

Ultimately, a platform can assist with creating and scaling monetization opportunities. However, the most important thing to realize is that creative business solutions which leverage the available data in a way that's transparent to the end user, and at the same time provide fair value-added services in compensation for the data, are the pathway to success.

About Cisco Jasper

Cisco Jasper is a global Internet of Things (IoT) platform leader. We believe that IoT is more than a smart thing, a great app, and a way to connect to the internet. It's not about things, it's about meeting the changing needs and expectations of customers with new services, experiences and business models that deliver bottom line growth.

For more than a decade we've been helping companies launch, manage and monetize connected IoT services to drive business transformation and deliver innovative connected services.

Companies of all sizes use Control Center, our automated connectivity management platform, to ensure the secure, reliable delivery of IoT services that enhance customer experiences and drive revenue.

For more information, please visit jasper.com/connected-cars