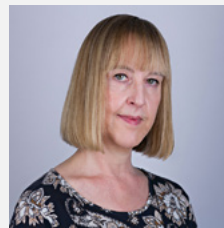


Connected Car Consumer Services: Winning at Data Monetization



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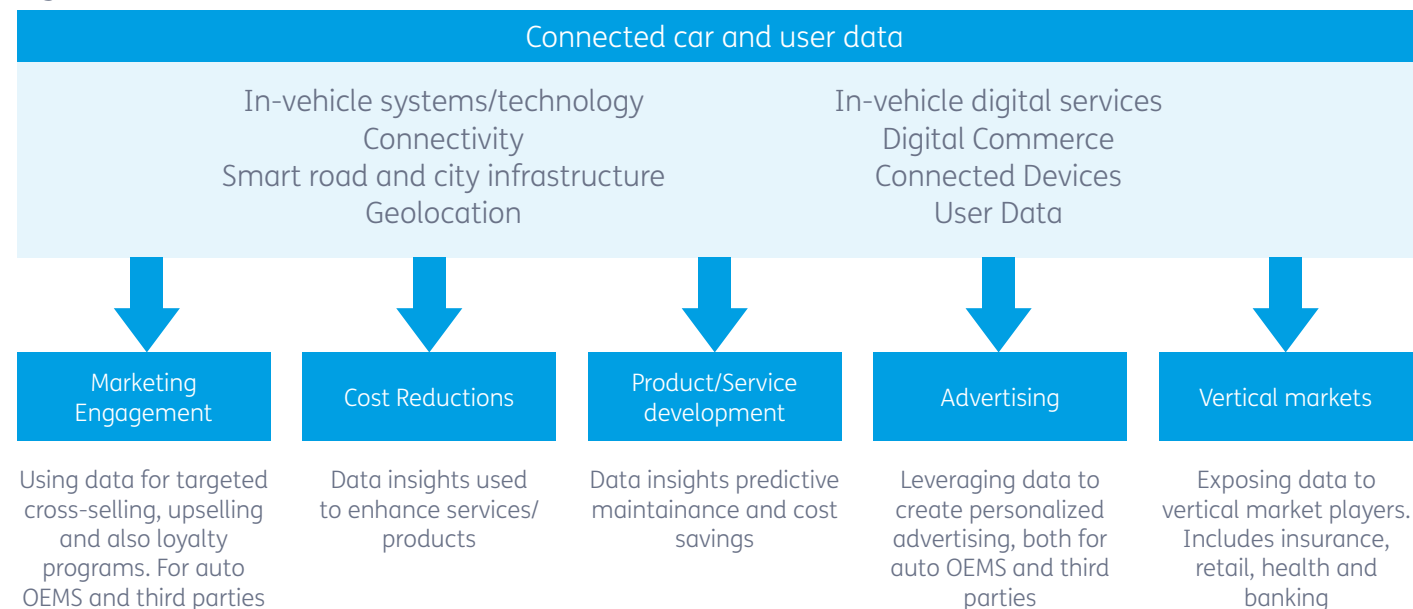
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Eden Zoller is responsible for leading Ovum's consumer digital commerce research, focusing on consumer dynamics, service provider strategies, market outlooks, and competitor analysis.

As the number of connected passenger vehicles continues to grow, the connected car ecosystem is starting to generate data from a wide variety of complementary sources. This includes data from embedded SIMs and sensors, and from connected external devices in vehicles, as well as from digital services, payments, geolocation systems, in-vehicle diagnostics, and smart road and city infrastructure.

What is less certain is how best to monetize this data, and who will be in pole position to do so. There are multiple scenarios to explore, for both direct and indirect revenues. But before the benefits of monetizing connected car user data can be fully realized, significant issues need to be addressed, including the need for data privacy safeguards, greater collaboration between players, and integration challenges.

Figure 1: Connected car data monetization scenarios



Source: Ovum

Data monetization scenarios

At Ovum, we've identified multiple scenarios that could create new revenue opportunities from connected car data, as highlighted in Figure 1.

Some are clear near-term opportunities for automotive OEMs and other players in the ecosystem, such as using connected car data to enhance customer engagement, or to feed back into improved service or product development. Other scenarios will take more time to develop – for example those using in-car data to support richer, more interactive advertising formats and experiences, or as an input to decision-making in the healthcare sector.

Marketing engagement, service development, and R&D

Connected car data will enhance a range of customer relationship marketing activities and engagement, such as loyalty programs and targeted promotions, creating upselling and cross-selling opportunities. This is particularly valuable for automotive OEMs, giving them new insight into customer and car behavior.

Sensor-based systems that monitor vehicle functions (e.g., fuel efficiency, brakes, and tires)

produce data that can be used to support not only marketing engagement, but cost reduction and product development.

Telematics platforms produce data that shows how well a particular function or part of the car is performing. This can be used to push marketing messages or reminders about vehicle maintenance (e.g., flagging when a car needs a service) or to trigger specific actions (e.g., flagging the urgent need for more fuel or new tires). AT&T recently announced a partnership with CarForce to deliver such predictive maintenance-led services for dealerships, fleet management providers, and repair shops.

Similarly, a vehicle's performance-related data can feed back into automotive R&D to improve and enhance future vehicle functionality, with a view to reducing costs or improving performance.

In-car data can also feed into better service development – and improved customer experience – for providers of infotainment and communications services. For example, passenger consumption of in-vehicle entertainment produces insights into usage patterns and preferences, that can in turn be used for more effective infotainment and data package recommendations, personalization, and bundling.

Consumer vertical markets

Connected car data can be used to enhance services offered by industry verticals that already target the automotive market, and to create opportunities for new vertical services.

A natural fit for vehicle rescue services and insurance

Vehicle performance data is useful for breakdown assistance providers and road infrastructure operators. For example, a roadside breakdown assistance provider could receive an automatic alert from a member's vehicle when something has gone wrong, and could then use vehicle location and status data to optimize the arrival time of a recovery vehicle, or discover what has gone wrong and predict the best course of action.

In-vehicle data is already being leveraged for usage-based insurance (UBI), which rewards safer, more efficient drivers with lower insurance premiums. UBI draws heavily on data from in-vehicle telematics and allows insurers to monitor a range of driving parameters including speed, miles driven, location and fuel consumption.

UBI appeals to consumers because it more accurately reflects how they drive, offering an alternative to a one-size-fits-all approach to car insurance. It has enabled a range of innovative business models such as pay-as-you-drive (PAYD) and pay-how-you-drive (PHYD). Smartphone apps from insurers provide "try before you buy" models, whereby drivers can use the app to assess how safe they are on the road and even share scores with friends and family, adding a gamification element.

Health monitoring is a promising longer-term opportunity

Connected car data in the health domain is attracting considerable interest, but is still a work in progress. Drivers can spend many hours in a vehicle, and connected car sensors and cameras can monitor various parameters related to health and stress. However, health-related data is sensitive and people may be unwilling to share physiological data.

There are also broader wellbeing scenarios that can be supported by connected car data. Auto OEM Audi's Fit Driver service uses data from connected cars and associated wearable devices to monitor a driver's wellbeing. Smartwatches can monitor

a driver's temperature and heart rate, while the connected car tracks their driving style and external conditions (e.g., weather, congestion). Combining these two data inputs allows the car to actively improve a driver's wellbeing and safety: Giving them a seat massage if they are stressed, ramping up the cold air-conditioning if they are drowsy, suggesting a stop for a rest, and so on.

Retail

Vehicle and user data will be valuable to retailers for location-based, personalized in-car advertising. But car data can also help the retail sector in other ways, such as revealing traffic patterns, journey routes, and popular stopping places, so that retailers can better plan store locations. Demographic information associated with car users, along with their preferences and service consumption habits, could help retailers better plan store inventory for drivers.

Digital advertising

Digital advertising has been available in vehicles via radio for decades, but it has typically been tied to the coverage area of the radio broadcaster and time periods/slots.

Richer forms of in-vehicle digital advertising such as video are not widespread. The main barrier – and it is a considerable one – is that digital advertising in vehicles runs the risk of distracting drivers and compromising safety. This is particularly the case with advertising designed to stimulate an interactive response, where an action is needed to receive a discount offered by an advertising message, for example. Early in-car advertising may be more focused on passengers (e.g., when consuming infotainment) rather than the driver, for safety reasons.

Conversational interface, digital assistants, and augmented reality (AR)

The provision of an AI-powered voice interface makes interacting with advertising in vehicles more viable – and safe – while driving. Advances in AI-powered speech recognition and natural language processing (NLP) are making voice interactions more accurate and nuanced, enabling the voice interface to take on more sophisticated roles. Digital assistants with a conversational interface have the potential to curate advertising in connected vehicles. They could tap into and create detailed consumer data sets around search history, content

of emails/conversations, and journeys completed. Combined with vehicle-related data, this will enable advertising and marketing to be targeted with greater precision and contextual relevance.

AR has the potential to transform the windshield itself into an advertising screen. However, advertising on AR-powered HUDs must be presented in a way that is not distracting to drivers and therefore dangerous. This will be difficult to achieve and is likely to be more viable (and of more interest) in shared or public transport autonomous vehicles than in passenger cars, in the medium term.

Digital payments

The arrival of digital payments in connected vehicles makes the

in-car advertising proposition more compelling, both for consumers and brands. Until relatively recently, it was not possible to make digital purchases directly from in-vehicle platforms. Connectivity and the use of tokenization in digital payments has changed this, enabling connected cars to support the whole shopping journey from an initial targeted advert through to payments for the product or service advertised. Early initiatives in the in-car payments space have come from Visa, Mastercard, and payments processing firm Worldline.

The impact of autonomy

Autonomous driving will have a profound impact on in-vehicle digital services and advertising.



Self-driving cars will give passengers more free time and a safe environment to engage with media-rich advertising such as video and VR in. This is a longer-term scenario, as fully autonomous vehicles will not be a widespread commercial proposition in the consumer segment in the next 10 years, although shared autonomous vehicles may appear sooner.

Success factors and challenges

Success in monetizing connected car data requires a range of skills and assets. Those best-positioned will have the ability to generate or access connected car data, access to advanced analytics capabilities, experience with data monetization, and access to, or control over, key enabling technologies (e.g., AI) and services (e.g., digital assistants).

Consumer tech OTT and e-commerce players such as Google, Amazon, Apple, Baidu, and Alibaba are in a robust position when it comes to the capabilities and assets needed to generate and monetize connected car data. Some are already advanced in developing connected car technologies, and provide popular digital services via smartphone-

mirroring solutions, content, apps, communications, mapping, navigation, and digital commerce. These players are also experienced when it comes to consumer identity management. Alongside this, they have cutting-edge data analytics and AI technology, plus existing business models based on monetizing consumer data.

The CSP challenge: Moving beyond connectivity revenues

While wireless connectivity is the foundation of the connected car ecosystem, the challenge for communications service providers (CSPs) is how to move beyond connectivity revenue and win a significant share of the value of connected car services. This is a key reason why CSPs are looking at wider, end-to-end service opportunities for connected cars. Digital Wi-Fi hotspot and infotainment services are logical for tier-one CSPs that are already committed to connected cars, especially if they have also invested substantially in media and content properties. But the problem for CSPs is that they are not the only ones eyeing this opportunity: Major OTT and consumer tech players are chasing the same prize.

New complexity, new skills for digital advertising players and OEMs

Connected vehicles are also an opportunity for brands, but for advertisers and agencies this means getting to grips with a new platform that has unique requirements and challenges, including ensuring advertising formats and timing do not compromise safety. Digital advertising in connected cars requires skills and expertise that most advertisers and agencies currently lack, which will take time to develop. The rise of car sharing also has far-reaching implications for personalization, not only for digital services but also for successful delivery of targeted advertising messages. Automotive OEMs, for their part, are looking to move beyond simply providing cars, to establishing ongoing service-based relationships with their customers. All major OEMs are exploring opportunities around in-car services, and hoping to monetize these as part of a fundamental business model shift. But – as with agencies – they do not necessarily have the right in-house skill sets or relationships to develop and leverage the large amounts of data their vehicles will be producing. Partnerships will be critical for success.

Collaboration and data sharing are key, but privacy and regulation are challenges

A host of different parties are involved in providing connected car services and generating data. This raises issues of ownership and makes data sharing and standardization a challenge. Auto manufacturers may manage sensor and system data; mapping and navigation vendors have access to location data; OTT players collect media consumption and usage information; retailers or payments providers may collect purchasing data; while CSPs manage cellular network-related data. Integration will be an ongoing challenge, creating significant opportunities for platform and analytics providers, particularly as demand grows for data to feed AI engines.

Data privacy in the connected vehicle domain is coming under increasing regulatory scrutiny, and most existing data protection frameworks have not been designed with connected vehicles in mind. Different connected car data use cases will have different requirements in terms of the type, depth and breadth of data collected. Regulatory initiatives such as European GDPR regulation make it imperative to provide transparency on who owns, has access to, and has rights over data generated by the car itself, and by drivers and passengers. Ensuring appropriate consent mechanisms are in place for data sharing and privacy will also be critical for compliance.

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