Connected Car Consumer: Data Monetization

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There is no doubt that connected cars will cause exponential growth in user data. What is less certain is how best to monetize this data. The good news is that there are multiple monetization scenarios to explore, for both direct and indirect revenues. But before the benefits of monetizing connected car data can be fully realized, certain issues need to be addressed, including the need for data privacy safeguards, greater collaboration between players, and standardization.

**Connected cars are a data treasure trove**

The connected car ecosystem has the potential to generate data from a huge variety of overlapping, complementary sources. This includes data from connected external devices in vehicles as well as from digital services, payments, geolocation systems, in-vehicle diagnostics, and smart road and city infrastructure. All of these sources will enable insights at multiple levels and in many combinations, covering passenger profiles and behavior, driver behavior and driving patterns, vehicle condition and performance, and many more.

However, certain issues must be addressed for the data monetization opportunity to be maximized. For example, consumer data privacy in the connected car context would need to be regulated, and there would be a need for data collaboration and sharing. Then there is the question of consumers’ willingness to share data and the ownership of that data.
Data monetization scenarios

One of the biggest challenges of connected car data is how to monetize it. The good news is that there are multiple scenarios that could lead to revenues (both direct and indirect), as highlighted in Figure 1.

Some scenarios present clear near-term opportunities for auto OEMs and other players in the ecosystem, such as using connected car data to enhance customer engagement and service or product development. Other scenarios will take more time to develop – particularly those that involve using connected car data in the health sector, and to support richer, more interactive advertising formats and experiences.

Figure 1: Connected car data monetization scenarios

![Data monetization scenarios diagram]

Source: Ovum

Marketing engagement

Linked car data will provide insights that can be used to 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 auto OEMs, giving them a direct line of sight into customer behavior that they did not have access to in unconnected vehicles.

Service development and cost reductions

Systems that monitor vehicle functions (e.g. fuel efficiency, brakes, and tires) produce data that shows how well a particular function is performing. This data can be used to support vehicle maintenance (e.g. flagging when a car needs a service) and also trigger specific actions (e.g. flagging the need for more fuel, new tires). In a similar way, a vehicle’s performance-related data can feed back into auto R&D to improve and enhance future vehicle functionality and reduce costs.

Many services and systems that generate data insights can also benefit once data analytics have been applied. For example, passenger consumption of in-vehicle entertainment produces insights into usage patterns and preferences that can in turn be used for more effective service recommendations, personalization, and bundling.
Consumer vertical markets

Connected car data can be used to enhance the services offered by industry verticals that already target the auto market and to open up the auto market to new vertical services. Traditional autos have not been able to generate the specialized data required by vertical markets, but connectivity changes this, opening up new data monetization opportunities. Verticals that stand to benefit from connected car data include insurance, retail, banking, and health. Some of them are already using connected car data (notably the insurance sector).

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

Insurance is an early mover – with innovative, fast-moving models
Elements of in-vehicle data are 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 is appealing 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 led to a range of innovative business models such as pay-as-you-drive (PAYD) and pay-how-you-drive (PHYD). There are also smartphone apps that 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 very much a work in progress. A promising area is the use of connected car data for health-monitoring applications. Drivers can spend many hours in a vehicle, and connected car sensors and cameras can be used to monitor various parameters related to health and stress. However, health-related data is particularly 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 Audi Fit Driver service uses data from connected cars and associated wearable devices (e.g. smart watches) to monitor a driver’s wellbeing. Smart watches can also monitor a driver’s temperature and heart rate while the connected car tracks their driving style and external conditions (e.g. weather, congestion). The idea behind combining these two data inputs is that the car can actively improve a driver’s wellbeing and safety: It can give them a seat massage if they are stressed, ramp up the cold air-conditioning if they are drowsy, suggest a stop for a rest, and so on.

Retail
Vehicle and user data will be very valuable to retailers for location-based, personalized in-car advertising. But car data can help the retail sector in various 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, tailoring stock to fit the needs of a particular car user segment, for example.
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 period/slots. Richer forms of in-vehicle digital advertising such as video are not widespread.

More sophisticated digital advertising scenarios are still limited and largely experimental. 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 that is designed to stimulate an interactive response, where an action of some kind is needed to receive a discount offered by an advertising message, for example.

Powerful drivers for digital advertising are coming into play

Digital advertising will gain stronger traction in connected cars, not just because of the potential treasure trove of data available, but also due to a range of service developments and enabling technologies. Some important developments include:

- **Conversational interface**
  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**
  Digital assistants with a conversational interface have the potential to curate advertising in connected vehicles. They can tap into and create detailed consumer data sets around search history, content of emails/conversations, and journeys completed, for example. Combined with vehicle-related data, this will enable advertising and marketing to be targeted with greater precision and contextual relevance.

Augmented reality (AR)

AR has the potential to transform the windshield 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.

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.

Fully autonomous vehicles

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 widespread commercial propositions in the next 10 years, although shared autonomous vehicles may appear sooner.

In summary

Success in monetizing connected car data requires a range of demanding skills and assets, which few players possess in their entirety and for which many are at a disadvantage out of the gate. Those in the best position to monetize connected car data will have the ability to generate or access connected car data, have access to advanced analytics capabilities, experience with data monetization, and have access to, or control over, key enabling technologies (e.g. AI) and services (e.g. digital assistants).

Certain consumer tech OTT players such as Google and Baidu are in a robust position when it comes to the capabilities, services, and assets needed to generate and monetize connected car data. Many are already advanced in developing connected car technologies and already provide popular digital services via smartphone-mirroring solutions, content, apps, communications, mapping, and navigation.

Several are active in digital commerce, notably, Google, Amazon, and Alibaba. Consumer tech OTT 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

Wireless connectivity is the foundation of the connected car ecosystem, and telcos are the key enablers on this front. However, in-vehicle connectivity will eventually become a commodity that consumers expect, but not one that they want to pay much for. Competitive connected data packages are becoming more widely available and unlimited prepaid data plans have come to market.

The challenge for 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 beyond vehicle connectivity subscriptions. Digital infotainment services in connected cars are logical for tier-one CSPs that are already committed to connected cars and that 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.

Data collaboration and sharing are key

A major challenge with data integration in the connected car domain is that a host of different parties are involved in generating data, which raises issues of ownership and makes data sharing and standardization a challenge. For example, auto manufacturers manage sensor and system data; mapping and navigation vendors have access to location data; and CSPs manage cellular network-related data.

New complexity for digital advertising

Connected vehicles are an opportunity for brands, but one that will mean getting to grips with a new platform that has unique requirements and challenges. The most...
obvious challenge is that advertising in vehicles cannot compromise safety.

Digital advertising in connected cars requires skills and expertise that the majority of advertisers and agencies currently lack and that will take time to develop. Existing advertising solutions will also need to be enhanced to support connected car scenarios.

The rise of car sharing has far-reaching implications for personalization, not only for digital services but also advertising messages. In the shared-vehicle economy, drivers and passengers will use different vehicles all the time, which will make personalized, targeted advertising difficult to achieve.

Data privacy issues and regulatory scrutiny loom large
Data privacy in the connected vehicle domain is coming under increasing regulatory scrutiny, particularly as most existing data protection frameworks have not been designed with connected vehicles in mind. To make things more complex, connected cars support multiple use case scenarios and each one will have different requirements in terms of the type of data collected, its depth, and its breadth.

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