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Mobility

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Featured Interview with OPPO

The Shift to Software-Defined Vehicles

May 2024

Background

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The emergence of software defined vehicles (SDVs) represents a seismic shift in the automotive industry and the broader mobility ecosystem. SDVs go beyond being traditional vehicles and function as platforms for connectivity, data generation, personalization and monetization. They have the potential to disrupt established business models, drive innovation and reshape our perception of vehicles. SDVs have implications that extend beyond the automotive sector, impacting public transportation, city planning and the energy industry. However, there are still unanswered questions regarding consumer acceptance, regulatory adaptation and the leadership role of traditional automakers versus tech giants in this new era of computers on wheels.

OPPO is a mainland Chinese consumer electronics and mobile communications company. It is best known for manufacturing smartphones, but it also produces other electronic devices such as audio devices and smartwatches, and it is moving into the automotive space. For example, it has partnered with SAIC to develop a universal connected-car experience. SAIC aims to connect its vehicles to a seamless and intelligent user experience that pairs with smartphones and other smart devices. The partnership will provide the software expertise to deliver this vision. SAIC envisions a future where a driver's smartphone automatically connects and configures the vehicle upon entry, with a service-oriented universal user interface that adapts to any dashboard screen. To learn more about OPPO and how it is strengthening its foothold in the automotive industry, we spoke to Mr. Zhang Xin, general manager of OPPO's Smart Trip Business.

Key Takeaways

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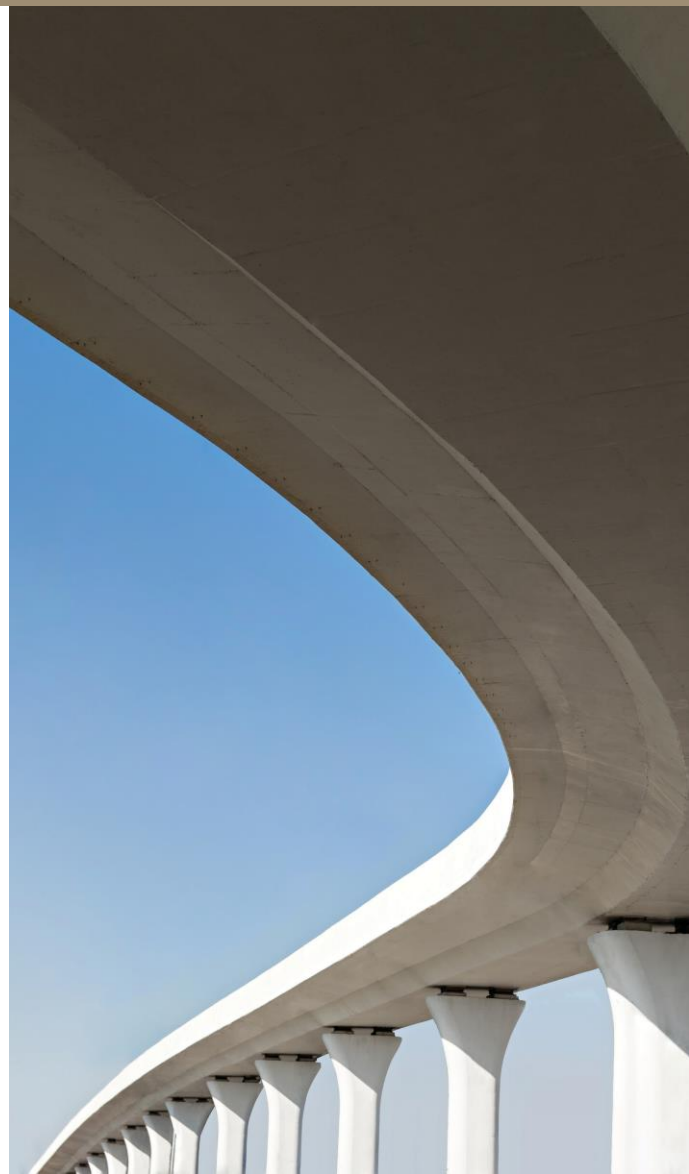
Could smartphones become the sixth vehicle domain?

- OPPO was instrumental in founding the Intelligent Car Connectivity Open Alliance (ICCOA), aiming to integrate smartphones and connected cars.
- OPPO collaborates with OEMs to integrate smartphone capabilities with vehicle capabilities and envisions a significant opportunity to leverage the computing power and sensor perception of vehicle sensors.
- Responsibility in car sharing during higher levels of autonomy is a key issue, as it is unclear who will be held accountable in the event of an accident. Collaborating with automakers is important to create a seamless connection between smartphones and in-vehicle entertainment, although there are uncertainties regarding the rules and restrictions.



Question 1

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S&P Global Mobility:

Could you share an overview of OPPO's involvement and motivation in the automotive industry, particularly around the areas of the cloud, driver experience and autonomous driving?

OPPO:

“In the automotive industry, we are focusing on various components. Firstly, we are working on hardware that is connected to charging smartphones in cars. OPPO holds the IP and supplies it to tier one players. Normally, wireless smartphone charging in cars is around 15 watts, but with our IP, the capacity can be increased to 50 watts. We are also involved in developing a variety of components such as the smartphone ecosystem, software, internet and e-connections.

Since 2019, we have collaborated with a Chinese OEM called Chang’an and BYD for the digital key. Over the years, this collaboration has led to the formation of the ICCOA association, which now consists of over 200 companies. The goal of this association is to create an ecosystem that seamlessly integrates smartphones and connected cars, allowing for faster implementation and fusion of smartphone applications with connected vehicle applications.

We are also working on an AI model, which is a large language model. The idea behind this model is to expand the vehicle domains, which currently include the digital cockpit, ADAS [advanced driver assistance systems], body, chassis and powertrain, to include smartphones as the sixth domain. This aims to enable bidirectional interaction between smartphones and vehicles, moving away from one-way smartphone projection.”

Question 2

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S&P Global Mobility:

How does the nature of collaboration between OPPO and your automotive customers differ from other industries?

OPPO:

“This is an ecosystem partnership between OPPO and car makers in the automotive industry. OPPO acts as a client for the automotive industry, collaborating with car makers to gain insights from a consumer's point of view. Based on their experience, OPPO has understood that younger consumers prefer using different apps and seeking quick answers to their questions. Therefore, OPPO believes that it is crucial to integrate smartphone capabilities with vehicle capabilities.

In the connected car space, vehicles have sensors that perceive the external environment. OPPO sees this integration as similar to having a smartphone and a smart office within the vehicle. While a smart home and office have numerous connected devices, the car scenario typically involves two major devices: the smartphone and the smart vehicle. OPPO believes that meeting consumer needs with different applications and fusing smartphone capabilities with vehicle sensors is essential. Vehicle sensors currently have more computing power and better sensor perception, presenting a significant opportunity for OPPO.”

Question 3

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S&P Global Mobility:

Considering the gradual progression towards fully autonomous driving, how do you anticipate the dynamics of car ownership, car-sharing and in-car entertainment to change, especially with the emergence of streaming and gaming services in electric vehicles?

OPPO:

“For levels 3 and 4 of autonomy, OPPO does not yet have products in the ADAS area. In China, there is a focus on software, leading to many creative and innovative applications and developments. In the car scenario, there are examples of gaming, video conferences, and even using the car for rest during noon time with comfortable seats and interiors.

Responsibility is an important point, especially in car sharing during levels 3 and 4. In the event of a car accident, it is unclear who will take responsibility, whether it is the ADAS service provider or the driver. This lack of clarity impacts the laws in different countries. However, as higher levels of autonomy become more prevalent, there will be more possibilities for entertainment and lifestyle applications.

From OPPO's perspective, collaborating with automakers for smartphone projection and applications is important to create a seamless connection between smartphones and in-vehicle entertainment. There are some rules in place, such as restricting access to vehicle video applications while driving, but it is uncertain whether these rules are right or wrong at the moment.”

Question 4

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S&P Global Mobility:

What are your long-term objectives in securing a significant market share in the automotive industry, particularly with the advent of autonomous driving and software-defined vehicles?

OPPO:

“Let me give you an example of using an in-vehicle app that we already produce for the mass market. We have an application called Desktop a product subset of OPPO Carlink. When you click on the app, it displays all the smartphone applications. This provides a quick and seamless integration of smartphone applications into the in-car infotainment system.

In this association, 14 different brands use the same protocol to quickly equip connected cars with smartphone applications. This allows for the development of in-house applications as well as smartphone-linked applications. It creates a rich ecosystem in the Chinese market

In the future, there will be smartphone application links that can be personalized and projected onto the car. This will enable users to have the same consumer habits and create a widget that can project smartphone applications onto the car's infotainment system.”

Question 5

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S&P Global Mobility:

As vehicles evolve to become software-defined, there is a potential for recurring software revenue. How do you plan to leverage this opportunity, and what monetization strategies are you considering in the automotive software market?

OPPO:

“I helped create the ICCOA to integrate smartphone ecosystems with smart car ecosystems as an innovation hub. This is important because software-defined vehicle OEMs need to provide the SOA [service-oriented architecture] framework, which allows for the fusion of smartphone and smart car applications. This is the first step in achieving a software-defined vehicle.

The second point is the potential for service revenue. In my opinion, service providers have the opportunity to generate revenue from providing services. For example, when we arrive at our office in our car and need to find a nearby shop to order a coffee, the service can be automatic based on location-based services. The coffee provider can understand consumer behavior and offer personalized services. The foundation of this is a seamless digital experience.”

Question 6

S&P Global Mobility

S&P Global Mobility:

With the emergence of Chinese suppliers and increased collaboration between tech companies and automakers, how do you anticipate the collaboration landscape to evolve in the future, and what opportunities could this create for further partnerships and innovations?

OPPO:

“The ICCOA is building a platform, similar to building a highway. Just like a highway with fueling stations, this platform presents numerous opportunities. The association's goal is to create a platform that enables carmakers to innovate and develop new technologies.

In the Chinese market, there are over 200 car brands and more than 10 smartphone brands. If developers from the smartphone industry can create different apps for the vehicle platform, a standard protocol is necessary. This standard protocol allows IoT [internet of things] devices to connect to the car, enabling the development of various apps within this business model.

Scale is crucial because one application cannot meet the requirements of all users. Therefore, a standard protocol is needed to serve hundreds of thousands of end users. The standard protocol serves as the key to connecting IoT devices to connected cars.

The ICCOA is working on standardizing the platform to ensure that all ecosystem partners use the same system protocol.”

Moderator

Matthew Beecham

**AutoTechInsight Research Manager,
Supply Chain & Technology,
S&P Global Mobility**

Matthew Beecham is a research manager for
S&P Global Mobility's AutoTechInsight platform.

Matthew brings almost three decades of industry knowledge and an extensive network to his role. His expertise spans ATI domains, providing shop floor insights and conducting high-level interviews.

He has worked for GlobalData plc, Just Auto, HORIBA MIRA, Economist Intelligence Unit (EIU), McKinsey, AT Kearney, and Supplier Business, a predecessor of ATI.

Matthew's academic credentials include a PhD in Automotive Technology Transfer from Cranfield University.

Fanni Li

**Principal Research Analyst,
Automotive Supply Chain & Technology,
S&P Global Mobility**

Fanni is Principal Research Analyst focused on Connected Car and related technology at S&P Global Mobility. Her responsibilities include China market research and analysis of digital cockpit and connected car, as well as global market analysis of over the air updates, connected services and vehicle software paid updates.

Fanni has more than 10 years working experience in automotive industry with engineering background. Prior to joining S&P Global, she worked for global OEM engineering centre in China for several years focusing on project management and product development of infotainment domain products.

Fanni holds a Master of Engineering in Mechatronic System from University of Technology of Compiegne in France, along with an MBA from University of Canberra.

Partner

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Zhang Xin

General Manager

OPPO's Smart Trip Business

Mr. Zhang Xin has 16 years of working experience in TMT industry, previously pioneered technology innovation in AI gaming, Digital Twin fields in OPPO. Currently is responsible for OPPO's Smart Trip business.

Corporate Profile

S&P Global Mobility

S&P Global Mobility

S&P Global Mobility enables customers to anticipate change and make decisions with conviction.

We help them to optimize their businesses, reach the right consumers, and shape the future of mobility. Leveraging technology and data science, we provide unique insights, forecasts and advisory services spanning every major market and the entire automotive value chain—from product planning to marketing, sales and the aftermarket.

With a legacy dating back to the 1920s when R. L. Polk published the first vehicle registration reports, our solutions are used by nearly every OEM, more than 95% of tier one suppliers, media agencies, governments, insurance companies, and financial stakeholders to provide actionable insights that enable better decisions and better results.

OPPO's Smart Trip Business

"Technology for Mankind, Kindness for the World" is the driving force behind OPPO's innovation and technology development. In other words, OPPO is committed to helping every individual with innovative spirit to grow, as well as helping the society as a whole to develop, while practicing the BenFen culture, helping humankind to build a mutually beneficial and inclusive society.

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