

Tech innovators in the auto space: Interview with Baidu AI Cloud

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Q&A with Baidu AI Cloud

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.



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Founded in 2000 and headquartered in Beijing, Baidu Inc. is an AI company. Baidu AI Cloud serves as the company's infrastructure for the smart era. With a range of AI technology capabilities, Baidu AI Cloud supports clients across various industries with its technology and solutions. To learn more about this business and how it is strengthening its foothold in the automotive industry, we spoke to Xiao Meng, Vice General Manager of Automotive Business, Baidu AI Cloud.



Key takeaways:

- Original equipment manufacturers have diverse cloud resource needs, including IT systems and private clouds for digitalization. They also require data storage for customer operations, connected cars and third-party applications, which can be fulfilled by Baidu's public cloud resources. AI research and development (R&D) for autonomous driving demands increased graphics processing unit (GPU) compute power. Compliance is paramount, as sensitive data must be processed and stored separately in the cloud.
- Baidu serves various sectors, including technology, government, power and automotive companies. "There are 20-30 major automakers with fierce competition. The top 15 major automakers and many new energy vehicle brands are Baidu's customers. Baidu provides excellent basic cloud services and various AI capabilities including large models." Collaboration is key, as Baidu works closely with OEMs to develop better services and

products.

- Automakers are collaborating with non-traditional tier 1 tech companies like Baidu Cloud, which offers cloud resources and AI capabilities. This trend is expected to grow, transforming vehicles into intelligent connected cars. In China, four to six major cloud service providers compete fiercely. Larger companies offer standard public cloud services, while smaller ones focus on personalized projects. Baidu aims to leverage AI to provide better services and products to OEMs.
- In the short term, Large Language Models will not change the automotive industry's car-selling model, but can enhance efficiency and the digital experience. They may lead to subscription services for automated driving and improve in-car interactions. LLMs also boost marketing, automate office tasks and aid R&D. Long-term, LLMs and AI could impact the business model, as seen with Baidu's robo-taxi, but the shift from car ownership to shared mobility is uncertain.

The following is an edited transcript of the conversation.

S&P Global Mobility: Could you share an overview of Baidu's strategy, involvement and motivation in the automotive industry, particularly around the areas of the cloud, vehicle experience?

Xiao Meng: OEMs have diverse cloud resource needs. They require cloud resources for their IT systems and private clouds to facilitate digitalization. Customer operations, connected cars, and third-party application data also necessitate data storage, including Baidu's public cloud resources. AI R&D for autonomous driving also demands increased GPU compute power.

Compliance is another important aspect, as sensitive data must be processed and stored separately in the cloud. Baidu's strategy aligns well with these OEM needs as they provide compute power, cloud platforms and architecture. Baidu is also a significant player in the Chinese mapping industry, which is important for compliance purposes.

The development of an autonomous driving tool chain and AI capabilities, such as large models and digital assistants, further contribute to the revenue growth of cloud services to meet OEMs' needs. We offer OEMs access to large models for model building and the development of new applications.

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

The automotive industry is a vital sector in China, accounting for approximately 10% of the country's GDP. Within this industry, Baidu provides services to various sectors, including technology companies, government entities, the power industry and automotive companies.

The automotive sector has a high concentration of 20-30 OEMs, giving them significant pricing power and making the cloud service market highly competitive. Baidu stands out by offering superior services, some of which are personalized according to the specific requirements of their clients. The top 15 major automakers and many leading new energy vehicle brands are all using Baidu's services. We provide cloud services and various AI capabilities, including large models, which will help our customers enhance their competitiveness in the era of new energy vehicles.

Collaboration is a key aspect of Baidu's approach, as they work closely with OEMs to develop and deliver better services and products.

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?

Automakers are now collaborating with tech companies that are not traditional tier 1 suppliers. Baidu Cloud, for example, offers cloud resources and AI capabilities to OEMs. This collaboration between tech giants and automakers is expected to increase in the future. Vehicles are no longer just modes of transportation; they are becoming mobile homes, robots and even second living rooms. AI and technology can be applied in intelligent connected cars to enhance the user experience.

In China, there are four to six major cloud service providers, and the competition among them is fierce. The auto cloud business is projected to grow, but it is challenging to predict market share due to the intense competition. Different companies have different strategies: Larger companies focus on providing public cloud services with standard offerings and lower costs, while smaller companies focus on personalized projects to create more touchpoints with customers and drive business growth.

In the future, AI will drive more demand from users and foster innovation. Baidu, with its AI capabilities, aims to provide better services and products to its OEM clients.

How do you see large language models transforming the automotive industry and its business models? What potential applications could we anticipate in the automotive sector?

In the short term, large language models will not fundamentally change the automotive industry's business model, which revolves around selling cars. However, LLMs can enhance company efficiency and improve the digital experience for customers. While subscription services for automated driving functions may emerge in the future, they are unlikely to alter the business model significantly. LLMs have the potential to enhance the digital experience within the car, such as through multiround conversations with drivers and passengers. For instance, an LLM integrated into the cockpit operating system can understand and respond to commands like "The weather is a bit stuffy and hot," automatically adjusting the climate temperature. LLMs can also serve as virtual assistants, welcoming occupants, providing active alerts and connecting to emergency services.

LLMs have applications beyond the car as well. They can be used in marketing, such as livestreaming with digital human assistants to boost vehicle sales on social media platforms. LLMs can also automate office tasks for thousands of colleagues and assist in research and development by creating vehicle requirements, writing test cases and optimizing codes.

In the long term, the combination of LLMs and AI technology could have a significant impact on the business model. For example, Baidu's robotaxi service operates hundreds of autonomous taxis without human supervisors in the city of Wuhan. As autonomous driving technology advances, more people may choose autonomous ride-hailing services. However, the turning point between shared mobility services and passenger car ownership is still uncertain and will require further analysis and time.

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