Automotive Cloud Service Platform Industry Report, 2020

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STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

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Abstract

Cloud service platform (cloud platform for short) can be interpreted as a scalable platform delivering basic services, middleware, data services, and software services to users over the Internet. Cloud platform is divided into: IaaS (Infrastructure as a Service), PaaS (Platform-as-a-Service), and SaaS (Software-as-a-Service). It is also classified into public cloud, private cloud and hybrid cloud types.

The public cloud platforms incorporate AWS, Microsoft Azure, Alibaba Cloud, Tencent Cloud, Huawei Cloud and Baidu Cloud. There are a large number of private cloud platform providers such as open-source Openstack and varying Openstack-based platforms. Non-open source providers include VMware, Zstack, etc.

Vehicle, infrastructure, cloud and network are crucial elements of cooperative vehicle infrastructure system (CVIS) industry chain. This report highlights the “cloud” link, with emphasis on OEM-centric automotive cloud platform services. With supplier’s cloud platforms as a foundation, OEMs build their own cloud platforms such as marketing & after-sale cloud platform, manufacturing & supply chain cloud platform, telematics cloud platform, autonomous driving cloud platform, simulation cloud platform and HD map cloud platform.

	Alibaba Cloud	Tencent Cloud	Baidu Cloud	Huawei Cloud	Microsoft Azure	AWS
Daimler	√				√	√
BMW	√	√			√	√
Audi					√	√
VW					√	
Volvo	√					
Ford	√				√	
Toyota					√	√
Honda					√	√
Renault-Nissan					√	
PSA				√		
Hyundai/Kia			√			√
SAIC-GM,		√		√		
Honda						√
SAIC Motor Passenger Vehicle	√					
FAW	√					
GAC		√		√		
Changan		√		√		
Great Wall		√				

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	Alibaba Cloud	Tencent Cloud	Baidu Cloud	Huawei Cloud	Microsoft Azure	AWS
Dongfeng Honda				√		
GAC Mitsubishi				√		
Foton				√		
Dongfeng Nissan						√
BYD	√		√			
Mazda					√	√
Jaguar Land Rover						√
Geely	√					
FAW-VW		√				
JAC				√		
WM Motor			√			
NIO		√				
XPENG Motors	√					
Bosch	√				√	
Schaeffler	√					
Continental						√
PATEO			√			
FEV					√	
LG					√	

Viewed from the tables above, AWS, Microsoft Azure, Alibaba Cloud, and Tencent Cloud are the first choice of OEMs and Tier1 suppliers. Huawei Cloud and Baidu Cloud are the rising stars. Of both top ten OEMs and top ten Tier1 suppliers that once adopted Amazon Web Services (AWS), more turn to Microsoft Azure as Amazon starts developing and testing autonomous vehicles.

Quite a few OEMs stand on more than one cloud platforms. For instance, Volkswagen Automotive Cloud (vehicles, customers and services) uses Microsoft's technology, while Volkswagen Industrial Cloud (manufacturing and supply chain management) utilizes Amazon's.

Telematics cloud platform is among the first automotive cloud platforms already in wide use. In 2017, Microsoft released the Microsoft Connected Vehicle Platform (MCVP), an Azure-based connected automotive platform which has won support from many Tier1 suppliers. The automotive cloud service platform Huawei introduced in 2020 defines more features otherwise: autonomous driving, HD map, battery safety, OTA, V2X and "three powers" (motor, battery and ECU).

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Revenue and YoY Growth of Major IT Cloud Platform Providers

Company	Revenue	YoY Growth	Q3 2020
Alibaba Cloud	RMB 40 billion (FY2020)	62%	RMB 14.9 billion
Tencent Cloud	RMB 17 billion (2019)	87%	
Baidu Cloud	RMB 4.65 billion (2019)	110%	
Microsoft Azure	USD 50 billion (FY2020)	47%	
AWS	USD 45 billion (projected in 2020)	29%	USD 11.6 billion
Google Cloud	USD 8.9 billion (2019)	53%	USD 3.44 billion

From above it can be clearly seen that IT giants post handsome cloud platform revenues at astounding growth rates, amid the booming demand from automotive sector for cloud services, which is fueled by the following:

- (1) Enhancement of automaker's production management, marketing activities and internal management, and digital revolution and synergy of related industry chains.
- (2) Digitalization of the process of automakers' development, design, test, and validation of software and hardware, and remote R&D teams' cloud synergy and cloud-based simulation (such as cloud service for firmware simulation).
- (3) Digitalization and CASE (Connected, Autonomous, Shared, and Electrified) of automotive products. This means software-defined vehicles, capabilities (e.g., connectivity, navigation, parking, entertainment and payment), and transition from a functional vehicle into an intelligent one cannot be achieved without the support of digitalized process and tools, and cloud services.
- (4) Building of the telematics platform for automakers, and the connection, service and operation platform among the four -- car users, automotive products, Internet digital ecosystems, and automakers and their industry chains, providing real-time online mobile interconnected third-space services such as navigation, entertainment and payment, for better user driving experience.
- (5) As ADAS/AD gains popularity and gets updated, AVs will generate 4TB data per day, which prompts a surging demand for cloud platform space.

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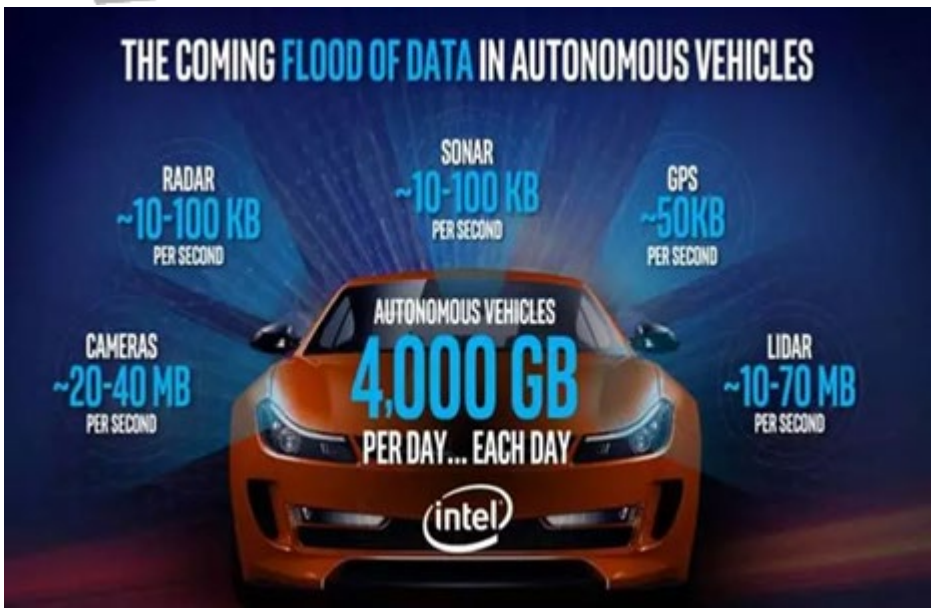

So BAT and Huawei lavish on automotive cloud platform involving operating system, simulation system, telematics system, autonomous driving software, and creation of software and application service ecosystem, considering it is the biggest source of their revenues after all.

OEMs always want to take hold of vehicle data. Currently, leading cloud platform solutions have reserved data ownership of OEMs. For instance, AWS platform retains full ownership of data, while providing functions like machine learning, and special solutions for connectivity and AVs to help OEMs freely create unique brand experience.

Quite a few OEMs set up their own cloud platform subsidiaries and big data centers. Take SAIC Cloud Computing Center as an example. The facility had a 6 or 7-person team, one data center and 5 or 6 cabinets at start and provided just basic cloud storage and IaaS environment. After evolution into Shanghai FinShine Technology Co., Ltd. in 2017, it now boasts a team with 150 talents, three data centers (Shanghai, Nanjing and Zhengzhou) and hundreds of cabinets, and adds software and platform services such as SaaS and PaaS. Up to now the company has owned more than 4,000 cloud hosts, over 10,000 virtual machines or containers, and 30PB storage space.

Companies like SAIC investing heavily in cloud platform still need help from IT tycoons. For example, in 2018, Alibaba Cloud and SAIC together released a hybrid cloud computing service platform for automotive R&D simulation: SSCC (SAIC Simulation Computing Cloud).

To reduce unit costs, IT giants not only build large-scale cloud platforms, but also enable AI algorithms and sundry tool chains and independently develop AI chips. Baidu Cloud, for example, has been a leader in autonomous driving cloud platform field by resorting to competitive DuerOS, Carlife, simulation platform, HD map, autonomous driving algorithms and Kunlun AI chip. OEM's cloud platform business cannot live without the help of IT firms.

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