

CLOUD COMPUTING TRENDS IN CHINA

Huge private sector investment, strong government backing and young talent are together rallying behind the growth of China's cloud computing industry.

In a short space of time China has emerged as a global leader in data-intensive computing that includes Artificial Intelligence (AI), the Internet of Things (IOT), Virtual Reality (VR), Online-to-Offline (O2O) services, Smart Cars and Online Payments.

In order to support these new business verticals, China is scaling up its IT infrastructure and technical expertise. However, rather than building large new server rooms or hiring teams of technicians to manage clunky IT equipment, companies are instead turning to the cloud to power their business expansion.



Cloud sales to grow from **5%** to **20%** of the Chinese IT market by **2020**

The Chinese Cloud Market

Similar to trends in the West, companies in China are adopting cloud services such as content delivery networks, server load balancers, object storage services and database management tools to power their businesses. Although cloud technology is nascent in terms of adoption compared to more mature markets, China is by no means lagging in terms of growth and technical expertise.

Cloud computing sales accounted for just five percent of China's total IT market in 2014, behind the global average of 11 percent. However, Bain & Company predict China's cloud

market to swell to 20 percent by 2020, reaching \$20 billion in value.¹

China's technical expertise, and young talent pool of developers and cloud architects are also beginning to turn heads in the international cloud community. In 2015, China's Alibaba Cloud broke four world records at the international Sort Benchmark Competition, including its Fuxi Sort which sorted 100 terabytes in just 377 seconds.² The company has also broken records in anti-DDoS prevention, after thwarting an attack to China's largest e-commerce platform Taobao that registered 453 Gbps.



China's telecom companies plan to invest **\$180bn** in fixed & wireless connectivity

Government Support and Regulatory Trends

The development of the cloud industry in China is a major strategic priority for the central government and featured prominently in both the country's 12th and 13th Five-Year Plans. Cloud computing technology has been identified as one of the government's 11 supported priority technology sectors. The Ministry of Industry and Information Technology (MIIT) and the National Development and Reform Commission (NDRC) have already established pilot cloud schemes in five cities: Beijing, Hangzhou, Shanghai, Shenzhen and Wuxi. In addition, China's state-owned telecom companies plan to invest approximately \$180 billion between 2015 and 2017 in fixed-line and wireless connectivity to support Internet access and cloud services.³

The regulatory environment governing cloud computing in China is also closely regulated. Foreign cloud providers, for example, are unable to compete independently in the Chinese market due to certification restrictions. International providers are only permitted to offer services in China via a joint venture with a local Chinese company.

The U.S Department of Commerce explains that, because foreign cloud providers are required by law to [partner with local companies to serve customers](#), it "raises questions about how much control foreign providers will ultimately have over their partnerships and joint ventures given that their Chinese partners may fully manage daily operations."⁴





Dramatic expansion
in expertise and
demand for cloud
services



Mobile Security
will be another
major priority for
the industry

Future of Cloud Computing in China

While China trails behind more established markets in the adoption of cloud technology, those inside China's cloud industry have no intentions of seeing this trend continue. Huge private sector investment, strong government backing and young talent are together rallying behind the growth of China's cloud computing industry.

The other primary driving force will be market demand. Given the growing appetite for on-demand video, mobile gaming and online content in China, content providers will need to invest in elastic compute service, auto-scaling, content delivery networks and server load balancers in order to provide uninterrupted service and fast download speeds. Demand for cloud products will also increase as companies invest in new technologies such as O2O services, IOT integration and online payments, or expand into overseas markets.

The thirst for big data and information on consumer trends from corporate marketing departments will likewise drive demand for cloud-based database technology.

Mobile security will be another priority for the industry. As the world's largest smartphone market, China is regarded as a mobile-centric market, and different to PC-centric markets found in the West. China's tech savvy population is leading the way in adopting mobile payments, O2O services, mobile gaming and designing their lives around their smartphone. While Android is the leader in powering mobile applications for the China market, its operating system also remains highly susceptible to external attacks. To address data security and the concerns of Chinese mobile users, foreign companies will need to invest in mobile security, while still offering fast load speed and high availability to users.



Alibaba Cloud has
6 data centers in
Greater China

Alibaba Cloud Leads China's Cloud Computing Market

After launching itself during the very early stages of the cloud era in China, Alibaba Cloud has six data centers in Greater China and is the leading cloud provider for the domestic market.

Alibaba entered the cloud industry after developing expertise in servicing its own internal business network. In 2008 and after nine years of sustained growth in the e-commerce sector, Alibaba's IT

infrastructure was in desperate need of an upgrade. As Alibaba was continuing to grow, the company wanted to scale quicker in response to a higher numbers of users, payments and security attacks.

Rather than continuing to procure expensive equipment, Alibaba began replacing its existing IT infrastructure with in-house systems and migration to the cloud. Traditional servers, storage



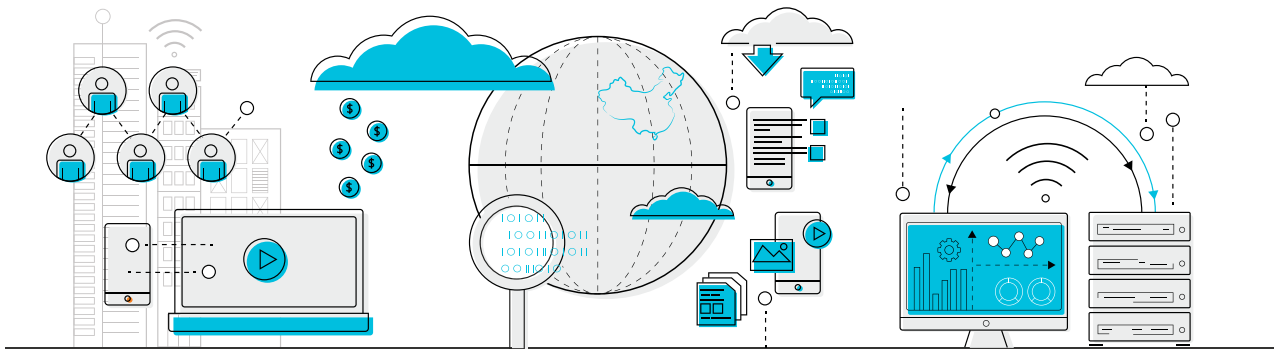
Alibaba Cloud has announced it will invest **\$1.4 billion** in global data centers

hardware and database management systems procured from Oracle, IBM and EMC were replaced with Alibaba's own infrastructure, including the Oceanbase database management system.

After upgrading its own internal systems, Alibaba Cloud was formed to provide cloud services to Alibaba's business network, and external customers. Alibaba Cloud launched in 2009 and as a pioneer of the industry the company has

played a major role in educating the domestic market about the benefits of cloud computing.

Today Alibaba Cloud accounts for approximately a third of China's cloud market, or 29.7% according to a 2015 IDC report. Alibaba Cloud is also opening global data centers after announcing that it would invest \$1.4 billion to internationalize its cloud services.⁵



The growth, investment and adoption of the cloud in China are growing rapidly. As China's expertise and cloud providers grow they will also continue to have a greater impact on global markets and shape the future development of cloud technology.

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