

JD Cloud sets out to deliver a frictionless user experience with 'intelligent cloud'

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Introduction

In a bid to bolster its standing in the country's burgeoning cloud computing market, JD Cloud, the cloud unit of China's leading e-commerce company, JD.com, has tightened its collaboration with the group's AI department to pursue 'full-stack, full-spectrum intelligent cloud' opportunities in key vertical segments. In China, the convergence of cloud computing and AI is taking shape, with cloud players, including Alibaba Cloud, Tencent, Baidu and Huawei, having already invested considerably in technologies and people. Nevertheless, JD Cloud believes that what sets it apart from the competition is its deep knowledge and understanding of vertical-specific requirements and its ability to deliver a frictionless user experience with AI-infused cloud services.

The 451 Take

Despite its late arrival in China's cloud computing landscape, JD Cloud's hands-on experience in managing and optimizing purpose-built cloud infrastructure allows it to define its market position on the one hand, and builds out its vertical-specific knowledge and expertise on the other. JD Cloud says the Chinese cloud computing market is still in its infancy, with rivals primarily focusing on the low-hanging fruit – the IaaS market. It believes that the future of cloud will grow beyond the infrastructure layer, and that the ability to provide scenario-based, context-aware services and integrated offerings enabled by innovative technologies such as cloud computing and artificial intelligence will differentiate leaders from followers.

Context

Starting as a cloud unit of JD.com to 'cloudify' its internal systems and an increasingly complex e-commerce platform, the engineering team was initially created for its internal cloud transformation and the deployment of e-commerce cloud. It was not until April 2016 when JD.com repositioned the cloud unit by productizing its cloud platform for external use. This not only represented a key

milestone for JD.com, but also marked the beginning of the cloud division as a commercial cloud provider called JD Cloud.

Headquartered in Beijing, JD Cloud initially focused on government customers and Chinese enterprises, with a purpose-built platform that provided basic cloud services – compute, storage, network and database. Just one year after its inception, JD Cloud, which was financially backed by JD.com, ramped up its investment in technological innovation and building a talent base as a point of differentiation. Samuel Shen Yuanqing, a Microsoft veteran of more than two decades and the former general manager of its cloud business in China, took the helm as the president of JD Cloud in late 2017. Under his leadership, the cloud team is tasked with pursuing aggressive expansion plans and building out its portfolio of cloud offerings – both horizontally and vertically.

At present, JD Cloud has a cloud infrastructure that spans northern, eastern and southern China with 10 availability zones (three in Beijing, three in Shanghai, one in Suqian and three in Guangzhou). It has approximately 2,500 employees, operating out of 30 cities across the country.

The company says demand for both public and private clouds has skyrocketed by a whopping 800% (public cloud usage grew by 900%) in the past two years. Aside from leveraging its direct channels, which include web presence and direct sales representatives, JD Cloud also sells through and with partners to address a broader market (including government customers) and solidify its position in China's fast-evolving cloud computing market. Some of its go-to partners include Talking Data, BoCloud, EasyStack, FangCloud and Terminus Technologies.

Technology and products

Since its inception, JD Cloud has tried to reap the full benefits of open source technologies as much as possible. As it continued to scale its operation, running containerized apps on bare-metal cloud using OpenStack and Docker seemed to be a logical move to meet the exponential growth of data for the cloud unit. Nevertheless, cloud orchestration and management were more challenging than ever, and the situation was exacerbated by the scalability issue. In 2016, the cloud team began to transition from OpenStack to Kubernetes for the management of its cloud clusters. In 2017, it started replacing core Openstack components with its own IP using a combination of open source and proprietary technologies. By early 2018, JD Cloud successfully replaced OpenStack with a new generation of cloud platform that is self-developed and managed by its own product engineering team.

At the core, JD Cloud's platform uses Kubernetes, Docker and other open source technologies to run vertical offerings that are tuned for Chinese enterprises across the board. The company has undergone the second phase of platform enhancement, using Kubernetes as a foundation, with the goal of delivering what the company describes as 'all-inclusive full-stack, full-spectrum' cloud offerings.

Leveraging its own machine learning capability for the management and prediction of resource optimization and management, JD Cloud says it can minimize capital spending on hardware. Actively involved in the CNCF project, the company says it has already made significant contributions to the cloud-native community, and the goal is to donate its own project to CNCF in the foreseeable future.

Taking the full-stack approach, JD Cloud platform, which is now in version 7, comprises four layers of the cloud stack (IaaS, PaaS, BPaaS and DaaS, and SaaS), with an open API to support and integrate with third-party PaaS, SaaS and databases. To enable cross-cloud migration, JD Cloud has invested considerably in automation and cloud management technologies. It has recently partnered with infrastructure automation vendor HashiCorp to deploy Terraform, which is a cloud orchestration tool based on open source technology and is touted to enable rapid deployment of cloud environments, in addition to cross-cloud migration. HashiCorp's Terraform has a strong product alignment with

services and features provided by commercial cloud providers, which is deemed valuable for organizations opting for multi-cloud deployments.

On the product front, the company emphasizes its capability and technology know-how to enable multiple cloud deployment models (public, private or hybrid clouds). Its cloud platform has been optimized for running containers. Having years of operating experience in managing the e-commerce cloud and building out an ecosystem of partners for JD.com works in the company's favor when it comes to addressing vertical requirements beyond the e-commerce domain. Aside from enabling industrial vertical clouds, such as financial, education and logistics clouds, JD Cloud is actively pursuing opportunities with government agencies at the provincial and city levels for 'smart city' projects, leveraging cloud computing, data analytics, IoT and AI technologies to address city issues such as excessive energy consumption, traffic congestion, public safety and city planning.

JD Cloud believes it has both breadth and depth in each of its offerings. Having self-developed a portfolio of more than 220 products (some products are in public beta) in six categories – cloud infrastructure services, security, big data and AI, enterprise applications, developer services, and AI-enabled IDC services – JD Cloud notes that it has an aggressive rollout schedule, releasing more than 10 new products per month. It has also partnered with key technology vendors for joint product development. At present, more than 95 products are jointly developed with key partners.

The recent announcement about deepening its integration with JD.com's AI unit has helped round out its AI-enabled cloud offerings, with more than two dozen AI-infused cloud services, such as automatic speech recognition, automatic license plate recognition and food image recognition. That being said, the company reiterates that it is not intended to sell point solutions, but rather to provide integrated cloud offerings that combine its in-house AI capabilities and open AI platform, NeuHub, with proven use cases in the retail, finance and insurance, and logistics sectors. Using the insurance industry as an example, AI has been used to develop a new generation of property insurance services, and is changing the way insurance companies handle claims settlements.

Customers

JD Cloud claims to have more than 610,000 registered users from a multitude of vertical segments, approximately 35% of which are paying customers. Having developed in-depth industry knowledge and vertical-specific expertise through managing JD.com's ever-growing supply chain and working with affiliates like JD Logistics and JD Finance, the cloud team takes pride in its ability to support a wide range of industrial verticals: energy, agriculture, education, medical and tourism, among others. Not surprisingly, it has already gained a solid foothold in the retail/e-commerce segment, and is winning multiyear contracts (three or five years) for private cloud deployments in the financial, retail, logistics and public sectors.

The company secured a major contract with the local government in Suqian, Jiangsu, to deploy a cloud cluster that accommodates a large number of upstream and downstream enterprises to accelerate digital commerce. Having approximately 175 systems running in the cloud, JD Cloud claims to have reached a nearly 100% cloud adoption rate and reduced cost by 70%. Suqian Cloud has been chosen as one of China's top eight G-Cloud case studies, and is featured by the China Academy of Telecommunications Research (CATR), which is under the Ministry of Industry and Information Technology (MIIT), JD Cloud says. Some of its referenceable customer wins include Fang Cloud, 9377 Games and Ele-cloud.

Strategy

Aside from enhancing its technology integration with the AI division and promoting open platforms with an open API and an ecosystem of digital partners across the board, JD Cloud focuses on tapping local business opportunities to the fullest extent. As the key commercial centers and top-tier cities in

China show signs of market saturation, the company is spreading its wings to tier two and three cities. JD Cloud is not the only game in town when it comes to prospecting; rivals Alibaba Cloud and Tencent are equally enthusiastic about winning the hearts and minds of local businesses in emerging cities, and the company believes that there's still plenty of room for growth in the next couple of years.

As far as go-to-market strategy is concerned, JD Cloud prefers to take a more pragmatic approach to building a solid business on the basis of enterprise demand trends. Its near-term goal is to support state-owned enterprises and the fast-evolving private sector, to align with national policies such as Internet Plus and Made in China 2025.

Competition

JD Cloud is competing in an increasingly crowded market as local competition has reached new heights. Alibaba Cloud, Tencent and Baidu continue to experience a steady demand for their AI-plus-cloud offerings. The cloud and AI business units of Huawei have been rolled up into the Cloud & AI BU as part of a companywide reorganization to provide a rich platform for service deployment. There is a growing list of niche players that are looking to capitalize on digital transformation in the internet-plus era. Companies such as ChinaC, ChinaNetCenter, GrandCloud, Kingsoft Cloud, Qingcloud, Qihoo 360 Technology, Qiniu, UCloud and West263 are in this group. For private cloud and hybrid cloud opportunities, vendors such as Lenovo, H3C, Inspur and ZTE are flexing their cloud muscles with new investments and product offerings. Open source software specialists like AWCloud, 99Cloud and SUSE could partner with JD Cloud to deploy offerings based on open source technologies on top of its cloud platform, similar to its partnership with EasyStack. Although global hyperscalers AWS and Microsoft and technology providers such as IBM and Oracle are actively pursuing opportunities in China through strategic partnerships and joint ventures, they are unlikely to present an immediate threat to local cloud providers.

SWOT Analysis

Strengths	Weaknesses
The cloud unit developed a wealth of experience over the last eight years in deploying and optimizing the cloud infrastructure as the group's core e-commerce business continues to scale. The ability to build out vertical-specific knowledge and expertise through working with JD.com's expanding business lines and affiliates also works to its advantage.	While the company realizes the importance of building a thriving ecosystem of partners, it remains a work in progress when it comes to making the AI-enabled cloud platform available for a broader array of businesses and industry verticals.
Opportunities	Threats
Investing in open source technologies with tools and platforms that drive portability and interoperability is more important than ever as businesses increasingly opt for a hybrid approach to cloud deployments. According to 451 Research's Voice of the Enterprise: Digital Pulse, Vendor Evaluations 2019, open source software is now mainstream, with 73% of organizations reporting some level of usage. Companies using IaaS and on-premises private clouds as the primary workload execution venue also post above-average adoption of open source software (80%).	Competing with the likes of Alibaba Cloud, Tencent and Baidu, which have already invested substantially in building their capability and customer base, is a tough go for any vendor.

Source: 451 Research, LLC