

Guangzhou

Shaping urban perfection with government cloud



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The perfect city – one that’s both highly livable and business friendly – is a simple aspiration that’s been around since ancient times. With today’s technology, the true smart city is within reach. We can anticipate a time of good governance, good business, and a high standard of living. In a smart society, technology is a tool for increasing government capabilities and efficiency. And government cloud sits at the heart of smart society.

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Guangzhou Municipal Government (GMG) first proposed its Smart Guangzhou plan in 2010. Top-level design started in 2012 and construction in 2013. Then in 2014, GMG adopted Huawei's government cloud platform for all its bureaus, commissions, and offices, culminating in the GMG Information Cloud (GMGIC). GMGIC provides nine major support services, including computing, storage, networking, security, and basic software. Procurement takes place centrally, but contracts are signed individually with each department. Over 240 departments have deployed in excess of 900 service systems and, in November 2017, IDC awarded Guangzhou a digital transformation prize for its excellent digital infrastructure and strong operations and management systems.

Just how big is China's largest government cloud?

As of October 2017, GMGIC comprised 3,860 virtual servers, 857 physical servers, and 4,546

TB of storage. Underpinned by Huawei's open and trusted unified management platform, GMG's various bureaus, commissions, and offices cut the numbers of its servers, storage, and other hardware by 75 percent and shortened project implementation by more than 70 percent. Initially, the GMGIC mainly provided IaaS services, but it now includes a PaaS layer, SaaS layer, and DaaS service layer.

In the past, GMG invited bids every few years for new cloud services, leading to long deployment cycles. To solve this, GMG is building its own government cloud services marketplace with a more flexible mechanism, so that emerging technologies and new customer requirements can be quickly provisioned and applied.

Just how good is China's largest government cloud?

GMGIC supports numerous important government applications. A good example of a successful one is the municipal

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government information sharing platform. Information silos between departments are a key factor behind inefficient government administration. The cloud platform enables information and data via the information sharing platform, eliminating silos and connecting departments, substantially increasing efficiency. According to Xing Yihai, director of Guangzhou Municipal Information Center, “The information sharing system has 6.8 billion data points. Government departments exchange more than 17 million pieces of data every day – the highest volume in China.”

Goodbye fraud

The information sharing system hosts more than 30 special services. Pre-deployment, for example, the business tax collection rate for all of Guangzhou sat at only 69 percent. Post-deployment, the rate increased to over 98 percent for nearly all sources of tax revenue in Guangzhou, boosting government tax revenue by more than 5 billion yuan

(US\$790.3 million) a year. It also facilitates big data analysis of the entire city’s economic performance and tax collection operations.

The government can now run special services such as financial checks for low-income families and a license plate lottery for small and medium passenger cars. The Civil Affairs Bureau (CAB), for example, has to check the financial status of a large number of low-income families that apply for income support. In the past, this used to be done manually and it was very difficult to verify applicants’ personal information, leading to cases described as “BMW drivers applying for low-rent housing” and people falsely claiming welfare payments. By deploying the shared special services on the information sharing platform, the CAB was able to implement automatic cross-departmental, cross-sector data verification that included information on insurance, real estate registration, and financial assets. This slashed the number of false claims, with statistics from 2016 indicating that



around 15 percent of applications put through the system were determined to be unqualified, realizing savings of over 100 million yuan in government funds.

Licensing and credit

In 2016, GMG initiated electronic license services and public credit services based on the information sharing system and government cloud infrastructure, providing a unified and systematic shared service for all departments in the city. Today, when applying for services from government departments, residents only need to carry one license, rather than lots of photocopies or original documents.

The GMGIC also got the authority thinking about new approaches and ways of operating, including video cloud. More than 80,000 video surveillance signals have been connected to Guangzhou's video cloud system and the smart system can automatically detect important surveillance signal information.

For example, thanks to automated video surveillance and algorithms, the system automatically calculates the rate of duckweed growth in Guangzhou's rivers and automatically alerts the relevant department if the threshold is reached. In the past, river flooding in summer used to cause duckweed to multiply quickly and block the main waterways, causing a range of problems, including pollution, which required teams of people to be assembled to regularly inspect the rivers.

The video cloud can also automatically detect when construction work is being carried out against regulations, like at night, which is difficult to detect through inspections. The system can then automatically notify the police and the government.

Data is key

Introducing new technology is the first step in the journey, but high-level service and technology integration is yet to be achieved. "Many requirements arise from services,"

“The top-level design of the government cloud has shifted to overall service architecture, whereas the previous focus was overall technical architecture.”

says Xing. “The relationship between technology and services is no longer one of supporter and supported; now they’re a fully integrated whole.”

First, the top-level design of the government cloud has shifted to overall service architecture, so that services are fully considered, whereas the previous focus was overall technical architecture.

Second, traditional cloud construction for governments used to be application-centric, but it’s now data-centric. Xing gives an example, “In lifecycle management, the system lifecycle, which is quite short, used to be the emphasis. Now it’s the data lifecycle, which is almost infinitely long. So, we need to adjust our approach accordingly.”

Third, business investment previously focused on internal benefits. In contrast, the GMGIC is an investment in government informatization, so the government is more concerned with external benefits and driving the overall development of society.

The preliminary planning and design objectives of the GMGIC platform are now completed. By the end of 2018, the business information systems of 80 percent of all government departments will be migrated to the cloud platform, and by 2020, that figure will reach 100 percent. GMG will fully leverage next-gen information technologies, such as cloud computing, big data and artificial intelligence, to build and quickly deploy a new government IT framework. This will promote a flatter service management model, solving chronic problems like information silos that have arisen because different government departments have built, managed, and used their own systems, often duplicating construction and wasting resources.

Now though, we’re entering a new age of innovation and development that will benefit all [www](#).