FUJITSU
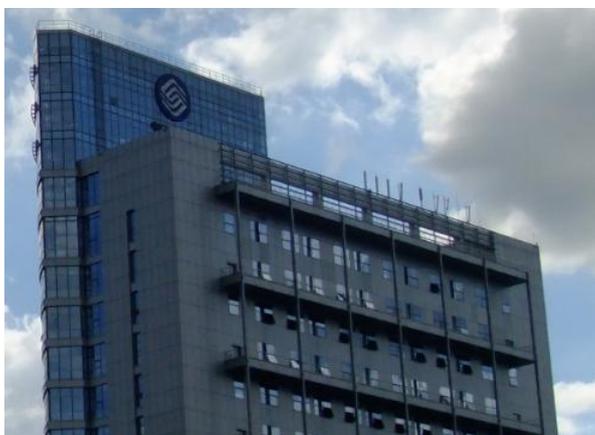
CASE STUDY
HEILONGJIANG MOBILE COMMUNICATION CORPORATION

»FUJITSU SPARC ENTERPRISE M9000 SOLARIS SERVERS TAKE HEILONGJIANG MOBILE, A CHINA MOBILE SUBSIDIARY, INTO THE VIBRANT "CLOUD COMPUTING AGE"«

THE CUSTOMER

Country: China
Industry: Telecommunications
Founded: 2000
Project Period: 2009-2010
Website: http://www.hl.10086.cn/

中国移动通信
CHINA MOBILE
移 动 信 息 专 家

THE CHALLENGE

■ In order to meet growth in business and network scale and enhance management, new IT support systems are continuously required at the customer's site.

■ Further, in solving the management of the existing enormous IT system, the customer required large-scale professional integration of their system development.

■ The customer also required to meet social obligations in energy conservation, low carbon emissions, cost reductions and management efficiency

THE SOLUTION

Based on SPARC Enterprise M9000 servers, Fujitsu proposed the SOP (service-oriented platform) to build the "Cloud Computing Platform Structure" which integrates server, storage, network and security systems, and manages virtualized environments and application systems. This architecture would provide a standard platform solution in support of flexible and large scale IT support systems for future business expansion as well.

THE CUSTOMER

Heilongjiang Province (http://en.wikipedia.org/wiki/Heilongjiang) is located in the most north eastern region of China. Heilongjiang literally means "Black Dragon River" and is one of the top 3 rivers in China and one of the top 10 rivers in the world; stretching across Russia, Mongolia, and China. The river also acts as the border between Russia and China making the province an important economy zone in China-Russian trade. With a high growth rate of 11.1% (in 2009) and total more than 30 million phone users (including more than 22 million mobile phone users) in the province (in 2010); the business scale of Heilongjiang Mobile, one of the national China Mobile companies, was also growing ever larger. So much so the existing IT infrastructure could not support their needs and needed urgent expansion.

PROJECT BACKGROUND

Heilongjiang Mobile owns more than 6 million users (in 2007). But the requirements for applications from end users, their various operational support systems and value-added application systems kept on increasing, becoming ever more complicated. The previous "Silo" IT system structure, where one IT system responded to one application was now, not only causing a vast waste of resources, but also rapidly increasing the cost of maintenance and construction. Further, it could not meet China Mobile's overall requirements for integrated, large scale and professional development. This included socially responsible energy conservation, low carbon emissions, plus operational cost reductions and efficient management in the new IT age.

THE CHALLENGE

The entire IT infrastructure at Heilongjiang Mobile had been planned and built independently. It had a classic "Silo" IT system, where almost all of the IT equipment could not be shared. Replication of IT systems was very wasteful of resources and required complex hardware and software models. It was also difficult to maintain, consumed large amounts of power and required massive data center floor space.

In addition, building new process, within that traditional IT infrastructure, required long lead times. This process required confirmation of the construction proposal; negotiation for the IT equipment; confirmation of contracts; delivery and installation; plus hardware and software testing. Further, in some cases even power supply and air-condition system expansion issues had to be seriously considered. The results were problems of low productivity and late responses to new requirements.

One other effect of the Silo approach was planning for peak loads. The requirements for hardware and software operation had to consider peak

THE BENEFIT	PRODUCTS AND SERVICES
■ Cost of maintenance and cooling were greatly reduced. ■ Existing hardware and software assets were protected ■ Virtualization of hardware equipment, standardization of software versions, automation of system management, and integration of service flow and process were all realized. ■ Fujitsu IaaS Cloud Computing Platform is able to meet the future challenges of new IT applicationsy.	■ FUJITSU SPARC Enterprise M9000 as the core of the cloud computing platform. ■ Fujitsu's excellent services and support for IT products
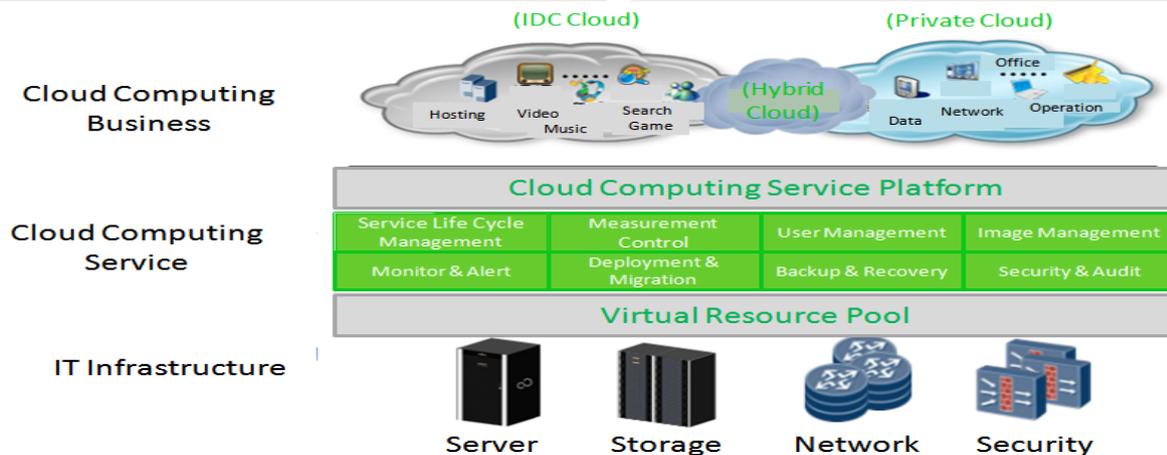
times. While essential for good operation, they only occurred for short periods and where a relatively low percentage of overall use. This meant many resources where idle during normal operation. The slow step by step implementation lead times further exacerbated this; creating difficulties in meeting rapidly growing business requirements later in the implementation phases. Users were usually forced to purchase new equipment with much more powerful computing ability to replace those originally planned, negating any protection of their original IT investment.

SOLUTION PROPOSED

In order to solve all of the above problems, the model for IT system construction had to be fundamentally changed. Ideally, system integration would need to be conducted at the physical level first, and then, according to different system requirements, resources could be allocated dynamically as and when required

This solution was achieved by providing storage and computing ability in the form of a resource pool. This enables high equipment usage rates, reduces investment costs, and allows new requirements to be implemented rapidly. The emerging cloud computing technologies provide the best solution to the challenges, and allow Heilongjiang Mobile to build a strong base while saving energy, reducing carbon emissions, lowering costs and increasing efficiency.

After careful planning and evaluation, Heilongjiang Mobile finally chose Fujitsu as their partner in constructing the cloud computing platform. They also decided to use Fujitsu SPARC Enterprise M9000 servers as the core of the cloud computing platform. Different from the public clouds they had previously heard about, this time Fujitsu helped Heilongjiang Mobile to build a mission critical Solaris-Unix Private Cloud environment.

IaaS (infrastructure as a Service) became the base for achieving the required computing environment. It allocates the computing and storage resources dynamically, using virtualization technologies.

On the vertical axis of flexibility, an IaaS Cloud implementation based on virtual machines, removes the fixed relationships between operating systems, application software products, and hardware equipment. It also makes any deployment much more flexible and speedy. In addition, each virtual machine can be automatically and easily changed to another server in the cluster system if one server fails – greatly increasing system reliability.

THE BENEFIT AND CONCLUSION

By leveraging the resource supply model of Fujitsu's IaaS cloud computing platform, the traditional jobs of building IT systems and maintenance were unified and controlled within the IaaS cloud computing platform. Heilongjiang Mobile's administrators now only need to select the platform models and resources required to be supplied with the IT resources they require. Now the Heilongjiang Mobile cloud computing service platform easily meets the requirements for new IT technology and effectively reduces their total cost of ownership (TCO).

After deploying the cloud computing platform structure, the cost for hardware and software assets plus maintenance was reduced by more than 14 per cent. The expense for power consumption and cooling was also reduced by 55 per cent. The conclusion is that at the same performance level as the larger volume of old equipment, the cloud platform saves CPUs, space, weight, and power consumption, with greatly reduced maintenance fees.

The other benefit of the IaaS cloud platform, based on Fujitsu SPARC Enterprise M9000 servers, is the new virtualized and high reliability model allows standardization of software products, automation of system management, and integration of service flow in the enterprise datacenter. This builds on the service-oriented platform (SOP) to create new IT support systems that will lead into the new age of IT service.

CONTACT
FUJITSU (CHINA) HOLDINGS CO.,LTD
Address: 11/ F,, Citigroup Tower, 33 Huayuan Shiqiao
Road Pudong Shanghai 200120, China
Phone: +86-21-5887-1000
Fax : +86-21-5877-5286
Website: www.fujitsu.com/cn