

I D C C U S T O M E R S P O T L I G H T

Yunnan Unicom Selects 'One-Stop' Solution for Easy Manageability, Lower Costs and Better Efficiency

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Introduction

Established in October 1995, China Unicom Yunnan Branch (Yunnan Unicom) is the first telecom company in Yunnan Province that is listed on the New York, Hong Kong and Shanghai stock exchanges. The state-run company is said to be the only integrated service provider in Yunnan Province licensed to provide a full gamut of telecom services including mobile, fixed line, Internet and network interconnections services.

After more than 10 years of rapid development, Yunnan Unicom's business strategy is to continue to grow the business while simplifying the organization. It is this strategy that has enabled the company to raise the productivity of its employees while continuing to develop and strengthen its market position.

Yunnan Unicom experienced a huge surge in customers for mobile and data services between 2000 and 2004. This placed great stress on their existing datacenters, causing network failures, weak signals and insufficient data transmission services. As a result, Yunnan Unicom laid the mandate to revamp its existing facilities and build new ones across eight cities of Banna, Chuxiong, Dali, Dehong, Lijiang, Wenshan and Zhaotong. Construction of the new facilities, which were implemented across the various cities in queue, took over three years. The entire project was completed in 2006 at an approximate cost of RMB 5 million (US\$731,782), including the cost of implementing new network power systems from Emerson.

The Problem

Yunnan Unicom was overwhelmed by the immense increase in subscribers for its services across multiple cities. However, its management remained committed to improving its quality of service by revamping its existing datacenters and building new ones. They realized that key to that was in ensuring high availability of service, which was possible through a superior n+1 design and centralized management. This, however, was easier said than done since it involved deploying a solution that monitors and manages the datacenter facility across multiple different levels.

Solution Snapshot

Organization: China Unicom Yunnan Branch (Yunnan Unicom) is a leading provider of telecom services in Yunnan Province

Operational Challenges: High datacenter operational costs; lack of adequate power equipment and management tools; unable to meet rising customer demands for higher service quality

Solution: Emerson Network Power Total Solution consists of a low-power distribution system, DC uninterruptible power system, AC uninterruptible power system, precision air-conditioner system and Centralized Power and Dynamic Environment Monitoring system

Benefits: Yunnan Unicom is able to centrally manage its datacenter environment as well as lower the costs of managing the local datacenters

Yunnan Unicom wanted to lower the cost of managing the local datacenters and build efficiencies across the board via centralized management. This helped to reduce the overheads at a city level and enabled them to manage the infrastructure more efficiently to meet standard benchmarks.

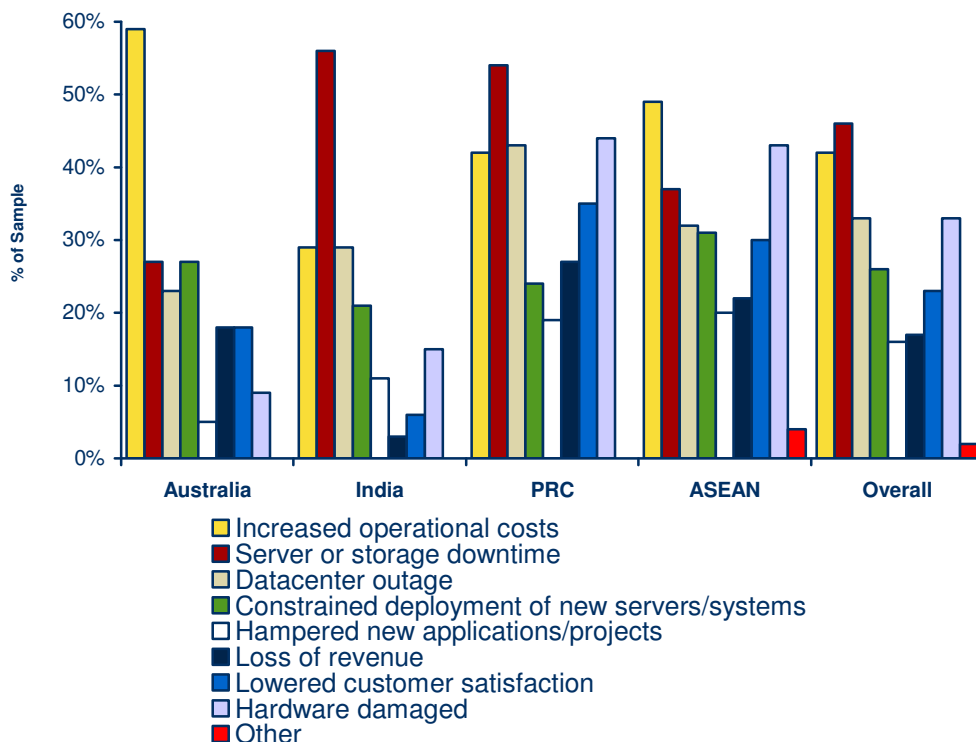
Power being the fuel that drives a datacenter facility, it was essential that the datacenter was constructed in a fashion that provided seamless provisioning, thereby limiting downtime. IDC studies have shown how poor or inadequate power equipment and management tools can pose a huge hindrance to datacenter managers around the region.

Datacenter Trends in the Region

IDC's Asia/Pacific research found that organizations across the region are beleaguered with high operational costs, server downtime and datacenter outages due to inadequate or outdated power equipment within the datacenters. For organizations in the People's Republic of China (PRC), this has reportedly also led to lower customer dissatisfaction and damage of IT hardware, as shown in Figure 1. Both India and China have similar customer demands of maintaining scalability and availability in the face of growing customer demand. This requires them to have exceptional availability of business services, and many seem to have challenges in meeting those expectations with their current datacenter facilities.

Figure 1

Has your organization experienced any of the following business impacts from issues or challenges related to power in your datacenter(s)?



n = 365

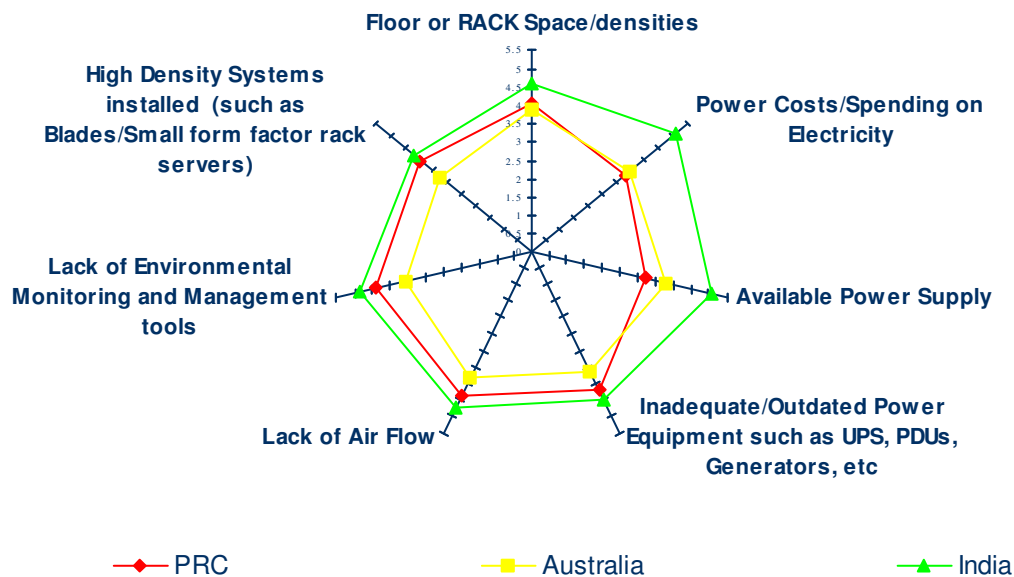
Source: IDC Asia/Pacific Datacenter Research, 2008

In the same IDC survey, we asked the respondents about their challenges in powering the datacenter adequately. Interestingly, as shown in Figure 2, organizations in the PRC said it was

not the power costs, but the lack of airflow and lack of environmental monitoring and management tools that posed the biggest obstacles. According to IDC's research, the PRC accounted for 50% of all servers shipped in Asia/Pacific, excluding Japan, in 2008. That is five times the size of India and Australia – the region's second- and third-largest markets, respectively. This, perhaps, helps give an idea of the density and scale of datacenters in China, which has a direct bearing on the challenge of managing these datacenters effectively.

Figure 2

Please rate, on a scale of 1-10 (where 1=Not a Challenge and 10=Extremely Challenging), each of the following issues in terms of the challenge they present to your organization in powering your datacenter(s).



n = 524

Source: IDC Asia/Pacific Datacenter Research, 2008

The Solution

Emerson introduced the “One-Stop Solution” around the same time as Yunnan Unicom was looking for a one-stop provider that could meet its new business requirements. The Chinese telecom provider needed help to build a consistent n+1 fabric that could provide reliable power and cooling across the different datacenters and be managed centrally from their Kunming headquarters. More than anything, the central management of the various facilities appealed the most to Yunnan Unicom since it aligned well with their key objectives.

Yunnan Unicom purchased the following equipment from Emerson for their datacenters, with some variations across the different cities:

- 1 set of switches, including AC power, DC power and power distribution cabinet
- 2 sets of 20KVA UPS
- 2 sets of 50,000 kcal precision air-conditioners
- 1 set of functional environment monitoring system, including data transmitter and communication ports
- One x86 server for data manipulation

Built on an n+1 redundant design, the facility is power-failure-proof, since even with the downtime of both uninterruptible power supply (UPS) systems, it will automatically switch to bypass the power (utility power). Emerson's Centralized Power and Dynamic Environment Monitoring System is responsible for the real-time monitoring and management of the dynamic equipment in the datacenters (including telecom power supply systems, batteries, UPSs, generators, and low-voltage power distribution systems), air conditioners as well as the overall environment (including temperature, humidity, smoke, leaching conditions and ultra-red rays), thus ensuring the smooth operation of the telecom system.

Yunnan Unicom invited an open bidding for the equipment and service providers for their datacenter. After evaluating different vendors, they decided to go with Emerson because of what they felt was good technology, competitive price and customized services.

Benefits

Emerson's one-stop solution helped Yunnan Unicom to centrally manage the datacenter environment. The network power solution monitors system failure and environment pressure, providing a systematic and timely analysis of alerts, and solutions that are useful in preventing any downtime.

According to Zhu Junfeng, an engineer in the Plan and Construction Department of Yunnan Unicom, the solution has definitely paid off. The company has reduced the power costs of the various datacenters through a more efficient administration and management system. The new facility finally resolves the fundamental issue of not having a robust facility that can scale to meet the rising customer demand, since with less downtime, they are now able to offer a much better quality of service to its customers.

For Yunnan Unicom, the overall benefit comes from having a system that enables them to centrally manage and monitor its datacenters, thereby helping to reduce the cost burden of managing the local datacenters.

Methodology

The project and company information contained in this document was obtained from multiple sources, including information supplied by Emerson Network Power, questions posed by IDC directly to Yunnan Unicom's engineering team.

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