

S U C C E S S S T O R Y

Hitachi Storage Solutions at Work

China Telecom Corporation Limited Guangdong
(Guangdong Telecom)

INDUSTRY Telecommunications/Media

SOLUTIONS Tiered Storage/Virtualization/Enterprise Platform/Business
Continuity/Disaster Recovery

Hardware — Hitachi Universal Storage Platform® V,
Hitachi Lightning 9980V™ storage system

Software — Hitachi Copy-on-Write Snapshot



“Hitachi Data Systems was able to consolidate our storage and provide better storage and power utilization rates, helping us to ensure that our service levels are always kept high.”

China Telecom Corporation Limited Guangdong



China Telecom Corporation Limited Ensures Constant Communications with Hitachi Storage

Known as Guangdong Telecom, the company wanted to ensure better security and business continuity, standardize its disaster recovery strategy and improve its power and storage utilization. It needed a storage vendor that understood the high demands of the telecommunications industry and would provide a solution that catered to its current and future needs. Hitachi Data Systems answered that challenge with a solution based on Hitachi Universal Storage Platform® V.

Guangdong Telecom is a key telecom player in China, servicing 30 million clients and employing around 60,000 employees. The company currently has 21 city branch offices and 79 county branch offices with about 60,000 employees.

The sales network covers all towns and villages in the Guangdong province. The company has an annual revenue currently valued at RMB 30 billion.

As a data center, the Guangdong Telecom Billing Support Center is responsible for a number of important telecom business activities, including collecting client data, calculating fees, settling accounts and generating statistics. In the future, it will be the core data center of Guangdong Telecom, and all telecommunication business systems will be integrated into this center.

For historical reasons, Guangdong Telecom Billing Support Center had an IT storage infrastructure composed of disparate systems, including the EMC CX500, EMC DMX2000 and the Hitachi Lightning 9980V™ storage system. These systems were deployed separately and each had its own server, storage and backup resources. These independent systems were isolated and their resources could not be shared, resulting in a low utilization rate as the data growth continued.

Neither data migration nor replication between different storage systems was possible. As the storage area network (SAN) environment grew more complex, with no consolidated storage management it was impossible to develop a standardized disaster recovery strategy. In addition, the enormous data growth led to a

huge demand in power consumption and storage capacity, and complicated management. This meant huge capital and management costs for the company.

The Hitachi Data Systems Recommended Solution

A good IT architecture often has a clearly defined hierarchy and a modular structure. The storage platform should have wide functionality. Besides, the system should not only meet current customer requirements, but also lay good foundations for managing future data growth.

These were the reasons behind the Hitachi Data Systems recommendation to deploy the Universal Storage Platform V, the industry's state-of-the-art, high end, enterprise class virtualization solution. Key hardware included:

- HP RP3440 NGN Server for data extraction
- Sun Fire V880 Server and Sun Fire V490 Server for data extraction
- HP Superdome Server for Oracle Real Application Cluster (RAC) for account settlement
- Sun Fire 4800 Server for generating statistics
- EMC CX500 disk storage and EMC DMX2000 disk storage
- Hitachi Universal Storage Platform V
- Hitachi Lightning 9980V™ storage system

The Universal Storage Platform V provided a heterogeneous storage virtualization platform with the existing CX500, DMX2000 and Lightning 9980V systems. The overall solution was unique compared to other virtualization solutions thanks to its simplicity, high performance and effectiveness — the reason it is often viewed as one of the best virtualization platforms. By implementing virtualization near the data source, Hitachi also improved both security and performance.

The Universal Storage Platform V solution enabled integrated management of the three external storage systems through virtualization. Four storage logical partitions were also

established based on the needs of the different application systems. Information Lifecycle Management was enabled through nondisruptive data transfer between the different storage models. This also standardizes the remote replication of heterogeneous storage for consolidated disaster recovery.

This data storage solution is stable and meets the company's long term needs. It also takes into the account Guangdong Telecom Billing Support Center's increasing storage requirements due to business growth in the next few years.

Strengths of the Hitachi Data Systems Solution

The Hitachi Data Systems Solution integrates the heterogeneous storage resources and eases management through a user friendly interface. However, the solution does not provide cross platform data access among document systems.

“We needed a storage vendor who was able to work with a heterogeneous environment and who understood our industry well.”

China Telecom Corporation Limited Guangdong

The strengths of the Hitachi Data Systems solution include:

- **Storage Consolidation.** The core storage infrastructure architecture based on the Universal Storage Platform V supports open standards and manages the storage facilities from different manufacturers. Hence, it allows organizations to choose the most suitable storage solution that meets their needs without being hooked to a single storage vendor.
- **Core Engine to Ensure High Performance and High Reliability.** The intelligent Universal Storage Platform V was designed and manufactured with the latest technology by Hitachi. With its high performance and reliability, the Universal Storage Platform V can manage the entire storage environment. The Universal Storage Platform V is an open, enterprise

class storage system that can support many different types of server platforms. It provides high reliability, high availability, high bandwidth and high performance.

- **Tiered Storage Structure.** Non-key business and historical data can be migrated using the Universal Storage Platform V virtualization engine to the lower tiered storage in the heterogeneous storage pool. Key business data and new business data can be retained at the Universal Storage Platform V internal tier one storage. The production data to be used by the business systems for statistical calculation would be directly replicated to the heterogeneous storage pool using the Hitachi Copy-on-Write Snapshot software.
- **Cache Partition.** In order to guarantee quality of service for different business systems, the Universal Storage Platform V can assign ports, cache and hard drives into separate storage partitions. These partitions are like multiple storage systems within the Universal Storage Platform V.

functions that greatly enhance its support capabilities for business functions, such as billing, while successfully overcoming many storage management challenges. With rapid business growth predicted in the future, this storage virtualization solution can bring enormous benefits to Guangdong Telecom in its operation and maintenance management, deployment of new application systems and disaster recovery.

Moving Toward Disaster Recovery

Phase two of this storage solution will definitely include the implementation of disaster recovery. Through virtualization and its remote replication technology, the Universal Storage Platform V can replicate data stored in any other storage system virtualized under it. This greatly simplifies the implementation and management of disaster recovery. In fact, Universal Storage Platform V uses third generation data replication technology.

Overall, the Hitachi Data Systems virtualization solution built on the Universal Storage Platform V can do a lot more than an isolated storage “box” solution. The state-of-the-art storage platform includes a wide range of

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