“Hitachi Data Systems was able to understand our needs and provide the right solutions that catered to our requirements. With their solution, we can now grow our business without worrying whether our data storage infrastructure can meet our business needs.”

Shaanxi Telecom

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>Telecommunications and Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLUTIONS</td>
<td>Storage Management, File and Content Services</td>
</tr>
<tr>
<td>Hardware</td>
<td>Hitachi NAS Platform, powered by BlueArc® (3100C)</td>
</tr>
</tbody>
</table>
Shaanxi Telecom Chooses Experienced Storage Solutions Provider Hitachi Data Systems to Manage Growing Data Stores

The largest and most technologically advanced integrated telecommunications enterprise in Northwestern China, Shaanxi Telecom provides fixed telecommunication networks and facilities in the Shaanxi province. Due to its fast expansion in the China market, the company needed an experienced storage solutions provider to develop an integrated archiving, backup and disaster recovery system that catered to its growing stores of unstructured data. Hitachi Data Systems provided the solution Shaanxi Telecom needed with the Hitachi NAS Platform, powered by BlueArc®.

Shaanxi Telecom is the Shaanxi branch of the China Telecom Corporation Limited. With more than 12 million telecommunication service users and 1.5 million Internet service users, its main businesses provide fixed telecommunication networks and facilities in the Shaanxi province. This includes the voice, data, image and multimedia information and communication services that are based on fixed telecommunication networks, system integration. It also includes information consultancy for information and communication business as well as the design, production and sales of information and communication facilities.

Since the successful bid for the Shaanxi Telecom’s client relationship system storage project in 2006, Hitachi Data Systems has deployed storage capacity totaling around 800TB for the company. This deployment supports the storage needs of the various core and peripheral businesses, such as the client relationship system, fee revenue system, data warehouse, settlement service, data mining, Operational Data Store, Office Automatic and finance.

Growing Pains

Typical of fast growing technically dependent businesses in the fast growth China market, the IT environment in Shaanxi Telecom first developed as disparate systems distributed in different cities and regions. Later, the various systems were centralized at the provincial level, and eventually an integrated data sharing storage platform for the business systems was deployed.

In the beginning, there were different data storage systems for different businesses and localities. The system platforms were separated from one another, making the migration and duplication of data between different heterogeneous storage systems difficult. Further, since the storage resources in the complex SAN environment could not be managed in a unified manner, there was no uniform disaster recovery strategy. Shaanxi Telecom was also concerned about costs regarding additional facilities and experienced several storage management problems. Now Shaanxi Telecom can share the storage resources among different businesses, and all the data are centralized at the provincial level.

Hitachi Steps In

Hitachi Data Systems assisted Shaanxi Telecom in developing its integrated, provincial level, customer relationship management (CRM) platform in 2006. After gaining a thorough understanding and analysis of the needs of the Shaanxi Telecom IT

"With Hitachi NAS Platform, we were able to consolidate our unstructured data and better manage its growth."

Shaanxi Telecom
support platform, Hitachi Data Systems planned and constructed an integrated data storage platform for the Shaanxi Telecom Business Support Center.

In the planning and development of this platform, Hitachi Data Systems and Shaanxi Telecom faced a number of problems related to the management and arrangement of this integrated data storage center. For example, there was no uniform planning for the storage of unstructured data (such as journal documents) in the core business systems. The access to files had to be done through the file systems in the servers.

An Integrated Storage Platform for Unstructured Data

In mid-2008, Shaanxi Telecom started to plan and construct its 3G platform. This platform needed to meet the storage needs of large amounts of audio and video business data. Obviously, the previous distributed storage method used by separate servers could not meet these huge storage demands.

Hitachi designed an integrated storage platform for Shaanxi Telecom that catered to the needs of different data in its different business systems. This platform is easily monitored, managed and shared. Through predetermined specifications, different business data is stored, archived and backed up online to assigned locations. Also, disaster recovery is streamlined.

In the entire data cycle (from its generation, backup and disaster recovery to permanent archiving and destruction) the data is circulated internally on the integrated data storage platform, with no disruption of its availability to the front-end applications.

Installation and Strengths

In mid-2008, Hitachi Data Systems assisted the Shaanxi Telecom in planning and upgrading its unstructured data storage environment. The implementation steps included:

- Independent Hitachi NAS Platform facilities were deployed to realize the storage potential of unstructured business data. With these facilities, the unstructured data of different businesses can now be managed uniformly and tested for performance. Online data can also be retrieved using data retrieval nodes.
- The integrated Hitachi NAS Platform enables unstructured data to be extracted from the business servers. This allows the main servers to remain free for operational tasks, while data storage tasks are allocated to storage platforms.
- Better security and easier manageability of unstructured data is also ensured through the deployment of the Hitachi NAS Platform storage, which consists of multinode clusters.

The strengths of Hitachi Data Systems solution include:

- The total cost of ownership (TCO) is reduced and the returns on investment are better guaranteed. The Hitachi NAS Platform fully utilizes the existing storage systems and enables data lifecycle management.
- The Hitachi NAS Platform uses a simple and intuitive interface. It requires only one administrator to add, change and delete all storage facilities at one location. The time and costs of managing the different types of storage facilities are thus significantly reduced. More efforts now can be allocated to planning and operation as well as the deployment of new applications.
- Hitachi NAS Platform enhances the utilization rate of most storage systems by 20 to 30 percent. The reduction in spending on physical storage also means more space available and less power consumed. Thus, objectives of green storage, energy conservation and emission reduction have been attained.
- Hitachi NAS Platform provides a simple approach to the storage of unstructured data. With the rapid business growth of Shaanxi Telecom, the significant benefits related to the operation and maintenance management as well as the deployment of new applications and data recovery systems will become more obvious in the near future.
<table>
<thead>
<tr>
<th>Corporate Headquarters</th>
<th>Regional Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>750 Central Expressway</td>
<td>Americas: +1 408 970 1000 or <a href="mailto:info@hds.com">info@hds.com</a></td>
</tr>
<tr>
<td>Santa Clara, California 95050-2627 USA</td>
<td>Europe, Middle East and Africa: +44 (0) 1753 618000 or <a href="mailto:info.emea@hds.com">info.emea@hds.com</a></td>
</tr>
<tr>
<td><a href="http://www.hds.com">www.hds.com</a></td>
<td>Asia Pacific: +852 3189 7900 or <a href="mailto:hds.marketing.apac@hds.com">hds.marketing.apac@hds.com</a></td>
</tr>
</tbody>
</table>

Hitachi is a registered trademark of Hitachi, Ltd., in the United States and other countries. Hitachi Data Systems is a registered trademark and service mark of Hitachi, Ltd., in the United States and other countries.

All other trademarks, service marks and company names in this document or website are properties of their respective owners.

Notice: This document is for informational purposes only, and does not set forth any warranty, expressed or implied, concerning any equipment or service offered or to be offered by Hitachi Data Systems Corporation.

© Hitachi Data Systems Corporation 2010. All Rights Reserved. SS-194-B DG November 2010