



“Between billing, customer service and IT, we calculated about a 74 percent increase in productivity since implementing the Hitachi SAN ... the Hitachi solution is a big win for IT, for the company and, ultimately, for our consumers.”

*David Johnson  
 Chief Information Officer  
 EPB of Chattanooga*



## EPB of Chattanooga

**INDUSTRY** Utilities, Government

**SOLUTIONS** [Business Continuity and Replication](#), [Enterprise Platform](#), [Modular Platform](#), [Green Solutions](#), [Virtualization](#)  
**Hardware** — Hitachi Universal Storage Platform® (2) and Hitachi Workgroup Modular Storage  
**Software** — Hitachi Universal Volume Manager, Hitachi Device Manager, and Hitachi Dynamic Link Manager software; Hitachi ShadowImage® In-System Replication software bundle; and Hitachi Universal Replicator software (to be used once the disaster recovery site is complete)  
**Services** — Provided by Hitachi Data Systems Global Solution Services

## EPB Moves Ahead of Technology Rollouts with Hitachi Storage Virtualization

To proactively roll out innovative next generation technology and services to customers, EPB of Chattanooga first needed to overhaul its IT infrastructure. Hitachi Data Systems powered a high availability storage area network and disaster recovery solution based on the Hitachi Universal Storage Platform® and advanced Hitachi storage virtualization and management software. The new storage architecture has helped to increase productivity by more than 70 percent and slash costly staff overtime across departments.

For EPB (Electric Power Board of Chattanooga) change is a good thing. With the emergence of advanced metering infrastructure, optical fiber networks and other telecom technologies changing the industry, EPB wants to do more for its 168,000 customers than “just keep the lights on.”

In the past few years, telephone and business Internet services were added to the organization’s product offerings. Now, EPB is rolling out a high speed fiber optics communication system for smart grid technology that includes demand side management and outage management, and an innovative “Fiber to the Home” initiative offering next generation digital services to every customer in the service area.

### Power for Next Generation Technology Changes

In order to support the technology evolution at EPB, another change was needed: a significant upgrade to the IT environment. The impending fiber optic services and digital metering are expected to generate massive data storage requirements and will dictate highest levels of reliability and availability.

But the existing data center fell short of providing consistently reliable data availability. Daily backups to tape were taking 24 hours to complete, leaving production data vulnerable and hampering quick data retrievals. Customer service agents were used to waiting for slow computer

screens, and IT and billing staff were always working overtime just to complete day-to-day operations. When a series of database corruption and data loss events caused arduous recovery efforts, EPB promptly embarked on a mission to modernize the IT architecture.

“With no redundancy, no failover and no high availability, we needed an enterprise-level solution to vastly improve recovery and service capabilities, and ready us for the technology rollouts ahead,” says EPB Chief Information Officer, David Johnson.

### Reliability Requirements

The IT staff managed 7TB of data storage, 120 direct attached storage servers, a limited SAN, various databases and operating systems, and more than 600 computers. With the anticipation of forthcoming programs and data growth, Johnson expected to increase head count by five fulltime staff: two to manage new systems and three to handle storage and backups.

To lay a foundation for high availability and disaster recovery, Johnson required built-in redundancy and snapshot technology.

“We wanted to do more than just improve data backups and processing capabilities. While we have some snapshot functionality available in the direct attached storage, it doesn’t really help us service growth at an enterprise level,” he explains.



“We selected the Hitachi Universal Storage Platform and Hitachi Workgroup Modular Storage system as the underpinnings of an enterprise SAN architecture that successfully positions EPB for the short term and our future.”

*David Johnson  
Chief Information Officer  
EPB of Chattanooga*

Consolidating servers and centralizing storage were high priorities, as was the need for significant scalability. “We want to invest in a storage platform with confidence we aren’t going to outgrow it. EPB is going to need a place to put that exponential increase of data and we need the robust scalability and performance to support it,” Johnson continues.

Another facet of the changing IT landscape is installation of IP-based cameras at EPB substations. Images from the cameras will transmit first to a server and then to a storage system for a 45-day retention cycle. Johnson anticipates these cameras will generate at least 8TB of data storage.

“To meet our myriad of IT requirements, several vendors were involved in bringing about the right solution. We selected the Hitachi Universal Storage Platform and Hitachi Workgroup Modular Storage system as the underpinnings of an enterprise SAN architecture that successfully positions EPB for the short term and our future,” Johnson says.

### The Move to Hitachi Storage Virtualization

With the help of Hitachi Data Systems Global Solution Services, EPB implemented the Universal Storage Platform as the nucleus of its high-end SAN infrastructure. Unique in its ability to provide enterprise-class storage and external storage virtualization, the Universal Storage Platform delivers a powerful 2.5 million I/O operations per second for unsurpassed performance and up to 32PB of total storage capacity.

Hitachi Universal Volume Manager software enables storage systems to be virtualized as a central repository through the Universal Storage Platform, while Hitachi Device Manager software allows EPB to centrally manage storage through a common interface. Half of the servers have been consolidated and virtualized using VMware, and the databases managing customer information, electrical usage and billing data were successfully migrated to the Universal Storage Platform.

Using Hitachi ShadowImage® In-System Replication software bundle, EPB performs online disk-to-disk backups of the production systems for readily available data and zero impact to operations. Johnson’s team has built a test environment and failover clusters for key applications to eliminate server failure.

### A Green Turn for the Data Center

With embedded redundancy and new failover capabilities, EPB is running 30TB of data storage with less power consumption than the previous environment expended for a single 2.5TB server. The Universal Storage Platform now commands a total of 41TB of storage, managing a Hitachi Workgroup Modular Storage system that was set up to embrace the 8TB of security camera logs and 40 new systems poised for incoming data growth.

Reinforcing its focus on IT reliability and high availability, EPB built a very energy efficient, semi-subterranean data center five miles away from the original data center. “We decided to divide and conquer

by acquiring a second Universal Storage Platform and using Hitachi Universal Replicator software to replicate and maintain the data in both locations. Plus, we were able to split the server cluster between the two environments for failover capabilities. The new location will actually utilize less electricity, less air conditioning and, of course, our highly efficient Hitachi equipment. Now that we’ve built it, we’re going to make it our primary data center,” Johnson reveals.

### A Big Win for Productivity

Since the Hitachi implementation, batch jobs that used to take two or three hours are completing in 15 minutes. Billing staff who usually worked three and four hours overtime every day went home two hours before shifts were over during the first week of the Universal Storage Platform implementation. Customer service agents no longer wait for computer screens to refresh, which shortens call response times. And Johnson was able to eliminate his staff’s overtime and the need for three of the five new positions.

“Between billing, customer service and IT, we calculated about a 74 percent increase in productivity since implementing the Hitachi SAN. Perhaps more impressive, we have gained greater credibility for effectively and knowledgeably servicing the organization. The Hitachi solution is a big win for IT, for the company and, ultimately, for our consumers,” concludes Johnson.

 **Hitachi Data Systems Corporation**

---

**Corporate Headquarters**

750 Central Expressway  
Santa Clara, California 95050-2627 USA  
[www.hds.com](http://www.hds.com)

**Regional Contact Information**

**Americas:** +1 408 970 1000 or [info@hds.com](mailto:info@hds.com)  
**Europe, Middle East and Africa:** +44 (0) 1753 618000 or [info.emea@hds.com](mailto:info.emea@hds.com)  
**Asia Pacific:** +852 3189 7900 or [hds.marketing.apac@hds.com](mailto:hds.marketing.apac@hds.com)

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-147-B DG December 2010