



A Search for New Services



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UNIVERSAL STORAGE PLATFORM

2005 COMPUTERWORLD HONORS CASE STUDY

BUSINESS & RELATED SERVICES

BANK OF AMERICA DEPLOYS THE HITACHI TAGMASTORE™ UNIVERSAL STORAGE PLATFORM TO REDUCE TOTAL COST OF OWNERSHIP, AUTOMATE DISASTER RECOVERY, STREAMLINE MANAGEMENT, AND PROVIDE A SOLID FOUNDATION FOR GROWTH. [20055301]

SUMMARY

Bank of America deploys the Hitachi TagmaStore™ Universal Storage Platform to reduce total cost of ownership (TCO), automate disaster recovery, streamline management, and provide a solid foundation for growth.

APPLICATION

Bank of America (B of A) is one of the most successful financial institutions in the world. The bank's consumer and commercial banking operations serve one in four households in the United States through 5,885 banking centers in 29 states and the District of Columbia—more than any other financial services company.

Careful planning is required for such a sizeable organization to continue to expand and thrive while delivering services to customers efficiently, cost-effectively, and without interruption. In the case of B of A, the bank's success created challenges that could potentially stand in the way of its future.

Enormous growth had caused a severe shortage of floor space in the bank's five main data centers, particularly with respect to data storage. To meet its storage capacity needs, B of A required more than 100 storage systems nationwide, all of which consumed valuable data center real estate and drove up cooling and power costs. Furthermore, the sheer number of storage units complicated management tasks for the bank's small IT staff.

Disaster recovery and business continuity processes also left room for improvement at B of A. With billions of dollars in transactions passing through the bank's systems every day, even brief outages—whether planned or unplanned—were costly and inconvenient. Although B of A had disaster recovery safeguards in place, switching production to the remote disaster recovery site and back again was a lengthy and error-prone manual process that created significant downtime.

With cost-effective IT efficiency, high availability, and disaster recovery top of mind, B of A approached Hitachi Data Systems (HDS) to assist the bank in developing a more effective approach to data storage and protection. During a decade-long relationship with B of A, HDS had proven responsive in helping the bank solve its IT issues. After consultation with HDS product management, B of A opted to replace numerous existing storage systems with the Hitachi TagmaStore™ Universal Storage Platform. The bank became one of two major beta testers for the product, and after successful benchmarking, B of A deployed two Universal Storage Platforms. Plans are in motion for similar implementations at the bank's major production centers nationwide.

BENEFITS

The Hitachi TagmaStore™ Universal Storage Platform automates many of the previously manual tasks involved in switching over the production environment to the disaster recovery site, reducing what was once a complex twenty-four hour job to an under-two hour process. The performance and scalability of the Universal Storage Platforms help simplify the bank's IT infrastructure and ease IT management by reducing the number of physical storage systems in the B of A environment.

Consolidation of existing storage systems is a primary factor in B of A's plans to migrate to the Universal Storage Platform. But combining the workload of several systems onto one larger platform required not only high capacity but also high performance. To ensure that the Universal Storage Platform would live up to the bank's expectations, Gary Troxell, a senior consultant at B of A, began performance testing and modeling on

the Universal Storage Platforms in August 2004 using a customized I/O benchmark to simulate the bank's specific requirements. Benchmarking demonstrated that the Universal Storage Platform could efficiently handle the bank's multi-terabyte workload, and by November 2004, B of A had two Universal Storage Platforms in production.

"TagmaStore is the best-performing storage platform I have ever seen," Troxell says. "That's critical to us because performance goes hand in hand with scalability. With the TagmaStore systems, we can do more with less."

By reducing footprints in its data centers, B of A has achieved a direct cost savings related to cooling requirements and power consumption. But perhaps more importantly, the increase in data center real estate is a facilitator for growth.

"By freeing up existing floor space, we avoid having to lease more data center space to satisfy the bank's ever-increasing demand for capacity," Troxell says. "That helps keep the cost of growth low for B of A."

IMPORTANCE

The Hitachi TagmaStore™ Universal Storage Platform also provides efficiencies from a storage management perspective. By using these systems, B of A expects to be able to grow its storage capacity tremendously without a corresponding requirement to increase its disk-storage management team, which consists of only 20 staff members nationwide.

The planned increase in capacity is not expected to create any additional burden for staff—quite the opposite, in fact. Thanks to the consolidation enabled by the Universal Storage Platform's strong performance capabilities, in all, the project will consolidate 30 legacy storage systems across the enterprise, replacing them with just eight Universal Storage Platforms.

"Consolidation is certainly easing our job," Gary Troxell, senior consultant at Bank of America, says.

"Maintaining and updating the storage environment is significantly easier when we have fewer physical systems to keep up-to-date. For instance, rolling out a new microcode item for 100 units used to take us the better part of a year. Reducing that number by 40 will really make the savings add up."

ORIGINALITY

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SUCCESS

As anticipated, another primary benefit of the Hitachi TagmaStore™ Universal Storage Platform implementation is enhanced business continuity and disaster recovery. The built-in automation features make switching production to the disaster recovery site and back again so convenient and quick that the bank now uses this capability not just for disaster recovery but also for change management. Whenever significant data center alterations are required, the bank's IT staff simply switches production to the recovery site until the updates are complete, and then switches back again—helping reduce planned downtime at B of A as well as ensure high availability in the event of an unscheduled outage.

The bank plans to improve on these already-impressive disaster recovery and business continuity capabilities by adding the Hitachi Universal Replicator for TagmaStore Universal Storage Platform to its storage environment in the immediate future. Universal Replicator software enables businesses to asynchronously replicate data hosted on the Universal Storage Platform over any distance—without the need for redundant servers or replication appliances.

“We are looking forward to a number of additional advantages,” Gary Troxell, senior consultant at Bank of America says. “For one thing, we will no longer need to make separate disaster recovery backups, and that’s going to save us a tremendous amount of time as well as give us a more flexible window for our other backup jobs.”

B of A also plans to make extensive use of the capability to attach external storage subsystems to the Universal Storage Platforms to provide low-cost modular storage for applications that do not have stringent performance requirements. Troxell expects that by closely matching application requirements with storage attributes, B of A will be able to achieve a more cost-effective storage environment.

“We used to pay for expensive, mainframe-class storage for everything, but TagmaStore opens up other options,” Troxell says. “Putting the right data on the right type of storage is going to change our TCO picture in a really big way.”

External storage also offers a way to make use of legacy storage investments without sacrificing the benefits of centralized management. Through the TagmaStore platform, IT staff can control multiple tiers of heterogeneous storage in the IT environment in a seamless fashion.

“The bottom line is that customers are getting good performance today, and they are going to continue to get good performance tomorrow,” Troxell says. “But B of A is going to pay less overall to provide it.”

Of the many benefits B of A has already begun to attain by using the Universal Storage Platform—more efficient IT management, consolidation of storage platforms, and a streamlined approach to disaster recovery—Troxell is most optimistic about the B of A infrastructure’s capability to enable future growth.

“As the bank strives to do more for every customer, the challenge is to provide additional services quickly, conveniently, and cost-effectively,” Troxell says. “More services mean more applications and more data. The TagmaStore platform has given us not only the capacity to store that data but also the features to manage it going forward—and to protect and keep it highly available. From that perspective, this latest project with Hitachi has been an extraordinary success.”

DIFFICULTY