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Vice President, Information Services  
StarHub



## StarHub

**INDUSTRY** Telecommunications

### SOLUTIONS

**Business Continuity, Replication, Virtualization, Enterprise Platform, Modular Platform**

**Hardware** — Hitachi Universal Storage Platform® V, Hitachi Universal Storage Platform 1100, Hitachi Adaptable Modular Storage 1000, Hitachi Adaptable Modular Storage 2500

**Software** — Hitachi Device Manager, Hitachi Dynamic Provisioning, Hitachi Dynamic Link Manager, Hitachi Universal Volume Manager, Hitachi Universal Replicator, Hitachi In-System Heterogeneous Replication bundle, Hitachi TrueCopy® Synchronous

**Services** — Provided by Hitachi Data Systems Global Solution Services

## StarHub Consolidates, Boosts Utilization and Reduces Total Cost of Ownership with Hitachi Storage

StarHub is a fully integrated info-communications company offering a full range of information, communications and entertainment services for both the consumer and corporate markets in Singapore. To drive down the total cost of IT ownership, it recently embarked on a project to consolidate key business systems onto a single platform. StarHub underpinned its storage infrastructure with Hitachi enterprise and modular storage systems.

Established in 2000, StarHub has gone through a number of phases enroute to becoming Singapore's second largest info-communications company. Over the past 11 years, it has grown organically and through mergers and acquisitions, notably its merger with Singapore Cable Vision in 2002. Today, it has four main lines of business, including fixed line, mobile, broadband and cable television. It also provides wholesale services to other carriers.

In recent years, StarHub's business models have also evolved with the advent of cloud computing and other Over the Top (OTT) services, which are delivered by third-party providers. This has led to the emergence of nontraditional competitors in the market. Within the info-communications sector, therefore, there is a constant need to innovate, shorten product lifecycles and time to market, and retain a strong customer-centric focus in order to stay ahead of the curve.

At the same time, the industry has also seen an exponential growth in customers' use of smart phones to access social networking sites and other data services, leading to a data deluge. For StarHub, and indeed for all info-communications companies, there is an urgent need to better manage the rising cost of supporting these value-added services and data products. "Our data is growing at a tremendous rate but, with our bundled mobile data packages, it can be a challenge for us to grow our revenues effectively. The challenge for us is to enable those services at a lower cost per customer," said Vice President of IT at StarHub, David Skinner.

To address these challenges, StarHub decided to deploy an IT platform, underpinned by a robust storage infrastructure, which would allow it to consolidate and optimize previously underutilized storage systems across its different applications. At the same time, the infrastructure would have to be

agile enough to support changing business models. It would have to scale cost-effectively to support the exponential growth in data and services through technologies such as dynamic provisioning and virtualization.

### A Decade-long Partnership

StarHub called for a tender and evaluated several proposals before deciding to award yet another major project to Hitachi Data Systems (HDS) on the strength of HDS' competitive bid. This further strengthened the long-term partnership that began more than a decade ago, when HDS helped StarHub to move from isolated islands of direct attached storage to a SAN to boost efficiency and storage utilization.

"We find that HDS is always innovating to stay ahead of the curve. They invest substantially in research and development, for example, in areas such as thin provisioning, virtualization and dynamic re-tiering," said Skinner. "It has been a real partnership, with HDS sharing their technology with us and constantly coming back with ideas on how to leverage our existing investments or to use new technology to drive down our total cost of ownership (TCO). This has enabled us to reduce our TCO year on year, for the past 10 years."

Today, HDS is StarHub's sole SAN storage provider. Its latest project with StarHub involves the consolidation of three customer relationship management systems, four billing systems and two data warehouses into a single system underpinned by Hitachi SAN storage.



"With the consolidated applications and Hitachi storage infrastructure, we are able to provide our call center staff with customer information at their fingertips. They no longer have to go to different systems to retrieve the data that they need."

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## HDS Designs a Tiered Storage Solution

Based on information provided by StarHub, HDS designed a tiered storage solution that sits behind a virtual infrastructure. This allows StarHub to leverage the information lifecycle model to benefit users and meet service level agreement (SLA) requirements.

Tier 1 storage, which houses critical applications, delivers high performance and sustained 100% availability using Hitachi enterprise-class storage. Tier 2, for less critical applications, uses modular-class storage for moderate high performance and high availability. Tier 3 storage is used for nearline storage and archival purposes, making use of SATA drives in modular-class storage for cost-effective backup and archival, while Tier 4 comprises offline tape for tape-based backup and recovery.

The tiered storage model makes use of the Hitachi Universal Storage Platform® V (USP V) and its virtualization capabilities. This aggregates StarHub's existing operational storage environments and enables seamless data movement throughout heterogeneous platforms. In fact, HDS is one of the few storage vendors that enable data to be moved directly between modular and enterprise storage systems without host intervention and disruption.

Hitachi Universal Volume Manager enables multiple storage systems to be connected to the USP V system as if they were all in one system. It also provides common management tools and software, which further improve storage efficiency.

In a significant boost for availability, Hitachi In-System Heterogeneous Replication software bundle allows information to be protected and accessible 24/7. With its ability to replicate large volumes of information without impacting service levels, timing out or affecting performance levels, the software helps ensure continuous access to information. The information volumes can

then be split away from the host application and used for system backups, testing and data mining applications while the business continues to run at full capacity.

To simplify overall disaster recovery operations, StarHub also implemented Hitachi TrueCopy® Synchronous and Hitachi Universal Replicator, which allow volumes to be replicated from both internal and external storage systems to another remote site.

## StarHub Reaps the Benefits of Consolidation

The Hitachi storage infrastructure supports StarHub's critical business processes and facilitates the flow of information throughout the organization. "Today, we have a large amount of data on Hitachi SAN storage, without which our business operations will grind to a halt," said Skinner. "Almost every aspect of our business has been touched by the storage infrastructure in one way or another, whether by rating a call, serving our customers, generating bills, launching products or studying market trends."

## Solution Provides Single View of the Customer

By consolidating all of the core customer care and billing systems, along with its entire storage landscape onto the Hitachi platform, StarHub has benefitted from having a single view of the customer. This view allows StarHub to up-sell and cross-sell across its call centers, websites and all other customer touch points.

Take, for example, StarHub's call center, which operates 24/7 to meet its customers' needs. "With the consolidated Hitachi application and storage infrastructure, we are able to provide our call center staff with customer information at their fingertips. They no longer have to go to different systems to retrieve the data that they need. This enhances their ability to up-sell or cross-sell within the product portfolio," said Skinner.

## Sustained High Availability and Efficiency

The Hitachi storage systems have proven to be very efficient in terms of uptime and availability. "We've been getting sustained 99.9% and 100% availability. This is very important to us as a service provider," said Skinner.

The Hitachi systems are extremely reliable because hot spares are activated immediately upon any system failure. At the same time, in-system replication ensures high availability by allowing nonproduction activities, such as system development, user acceptance testing or backup, to be done on copies of production data. Therefore, they do not affect access to the actual production data.

StarHub has also benefitted from significant efficiency gains with its latest technology refresh as part of the consolidation project. For example, the installation of the Hitachi Adaptable Modular Storage 2500 has led to a 70% improvement in operational efficiency over its predecessor; this performance is credited to more processing power, the new Serial Attached SCSI (SAS) architecture and dynamic provisioning features.

## Reduced TCO

Technologies offered by HDS, such as virtualization and dynamic provisioning, are widely used in many of StarHub's business systems to stretch its investment dollar to the fullest. For example, virtualization and dynamic provisioning have saved the company about S\$400,000 over the past few years by allowing for shared storage and boosting actual utilization to mitigate wastage.

HDS also helps StarHub store data cost-effectively by facilitating nondisruptive, policy-based data migration across tiers of storage to where it makes the best economic sense. This flexibility enables the multitier storage solution to deliver higher performance at lower overall costs. It also enables StarHub to leverage its existing storage investments to manage and retain

data throughout its entire lifecycle across existing platforms.

### Towards a Greener Future

StarHub is mindful of environmental concerns that have been growing in recent years and is looking to address issues such as power and cooling, which are the two biggest energy guzzlers in the data center today. The company has found the latest Hitachi Virtual Storage Platform promising in terms of being environmentally friendly and reducing power and cooling costs, and

is seriously studying the options available to determine its feasibility and cost-effectiveness. "From our perspective, as long as HDS remains ahead of the curve and continues to innovate, I see our partnership continuing for some time to come," said Skinner.



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