



“Hitachi Data Systems gives us the confidence and ability to develop our healthcare services. We found that the Hitachi Data Systems solution is cost-effective and exceeds our requirements.”

*Pascal Tse*  
 Chief Information Technology Officer  
 St. Teresa's Hospital



## St. Teresa's Hospital

**INDUSTRY** Healthcare

**SOLUTIONS** [Business Continuity and Replication, Modular Platform, File and Content Services, Virtualization](#)

**Hardware** — Hitachi Adaptable Modular Storage 2100 and 2300;  
 Hitachi Content Platform

**Software** — Hitachi Dynamic Provisioning

## Progressive Hong Kong Hospital Supports Digital Recordkeeping with Hitachi Modular Storage and Hitachi Content Platform

For over seven decades, St. Teresa's Hospital has been serving the public as a private general hospital in Hong Kong. Aiming to achieve service excellence at all levels, St. Teresa's Hospital continuously takes on new challenges to enhance its service provision standards. Recently, the hospital accomplished an important step in this effort by adopting new technology to support its hospital information systems (HIS) and picture archiving and communication systems (PACS). With Hitachi Content Platform to back up these medical core systems and Hitachi modular storage and software, St. Teresa's Hospital can further entrench its well-earned reputation as a leading holistic medical center.

Founded in 1940 by the Congregation of the Sisters of St. Paul de Chartres, St. Teresa's Hospital is a Catholic hospital with a mission to provide a competent and quality healthcare service to the sick and the needy. Presently, it has 750 beds, the best trained personnel and the latest medical facilities. The hospital is continually improving its services to the general public. These include 24-hour outpatient consultation, inpatient admission, pharmacy services, clinical laboratory examinations, radiology examinations, physiotherapy, endoscopy examinations, medical check-ups, skin and laser treatment, hearing and speech therapies, and even traditional Chinese medicine.

### Reliable, Secure Data Storage Made Possible by Hitachi Data Systems

To enable its continual development and to enhance service levels, St. Teresa's Hospital has been undergoing a series of interior and exterior refurbishments since the 1990s. A new hospital extension was constructed in 1996, and the Cancer Centre and the Patient Health Resources Centre were established in 2003 and 2004, respectively. The grand opening of St. Teresa's Medical Centre in 2008 marked a milestone on the hospital's path to becoming a quality 21st-century healthcare service provider. While the construction of premises and facilities continues

apace, the hospital's technology software and hardware are also being updated to meet the needs of staff and patients. Led by Pascal Tse, the chief information technology officer of St. Teresa's Hospital, the team successfully created a reliable and secure data storage and exchange framework for the hospital in 2010. This was made possible by the adoption of Hitachi modular storage and software to support HIS and PACS.

According to Tse, all these endeavors are part of the team's mission to facilitate streamlined operations in the hospital in order to realize a more efficient and paperless work environment. He pointed out that instead of being a one-off project, the upgrade work is in fact a series of evolutions toward the ultimate goal of realizing the concept of a digital hospital. "The practice of medicine has such a long history that each of our steps to change and upgrade has to be done with prudence," he explains.

Responsible for the development of information technology systems and medical records management, Tse is a seasoned IT professional. However, he stresses that technology advancement is only one side of the coin. "It takes two to tango," he says. "User uptake is essential and the key for ensuring the tools and systems are used to their full potential. The Quality Management Maturity Grid should be observed with the adoption of new technology, and our team is trying its best to make sure everything is done with respect to quality healthcare service."



"The Hitachi Adaptable Modular Storage ensures 99.999 percent data availability with no single point of failure in the PACS architecture. This is especially important in order to meet the hospital's requirement of nonstop operations."

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## Hitachi Adaptable Modular Storage Adds Efficiency and Cost-effectiveness

St. Teresa's Hospital adopted the Hitachi Adaptable Modular Storage (AMS) 2100 and 2300, as well as the Hitachi Content Platform. The actual implementation process took just three months to complete. The solutions are now functioning together with the tailor-made HIS in the IT infrastructure hosted under two data centers, which serve the purpose of load balancing and resilience.

Tse's team collected feedback from users of the systems, including radiologists and radiographers and frontline clinicians and surgeons, which informed the final setup. "To cater to the daily operation of the hospital, our system includes a short-term storage solution that requires fast and cost-effective storage, transfer and retrieval of radiology images, and a long-term storage solution that has to be safe and robust for long-term archiving of radiology images. Hitachi Data Systems disk-based solutions are capable of meeting these requirements," says Tse.

Needless to say, service continuity is of utmost importance for healthcare service providers, as in many cases it can be a matter of life and death. Therefore, Tse appreciated the professional support he received from the data storage experts at Hitachi Data Systems in devising a five-year strategy plan for the hospital.

The AMS 2300 incorporates high performance SAS drives and cost-optimized SATA drives in the same system for tiered storage solutions. It can also be attached to Fibre Channel and iSCSI storage networks for exceptional levels of storage consolidation. "We see these advanced features as

valuable investments that will pave the way for future system development. Together with the Hitachi Dynamic Provisioning software, which provides virtual storage capacity, the solution package forms an indispensable part of our hospital information systems that eliminates application service interruptions, reduces costs and simplifies administration," Tse explained.

This is why St. Teresa's Hospital chose Hitachi Data Systems as its preferred storage vendor. Tse stated that the PACS system is crucial to the hospital's operation, and the key challenge for every PACS implementation is to maintain an efficient and cost-effective storage solution. To facilitate the storage and transfer of scanned images, the AMS 2300 was adopted as the short-term storage solution of the hospital's PACS. "The Hitachi AMS ensures 99.999 percent data availability with no single point of failure in the PACS architecture. This is especially important in order to meet the hospital's requirement of nonstop operations," he says.

## Hitachi Content Platform Ensures Long-term Data Preservation

Hitachi Content Platform was adopted as the long-term archive solution of the hospital's PACS system. Tse confirmed that both solutions worked smoothly together, bringing multifaceted benefits to the hospital. He also explains that St. Teresa's Hospital is looking beyond regulatory compliance. "In Hong Kong, medical records have to be kept for seven years before they can be removed. Nowadays, while everyone is talking about lifelong clinical history, our hospital is aiming to provide electronic patient records that span from cradle to grave, or I should say from womb to tomb. This is no small task for an IT department."

In line with the hospital's aim to provide lifelong patient records and the electronic healthcare record initiative, the Hitachi Content Platform is capable of continually checking the record archive content for integrity throughout its retention period. Tse is impressed by the platform's employment of a vast array of data protection and content preservation technologies, such as data integrity checking, RAID-6, replication, encryption, "write once, read many" (WORM), audit logging and more. He pointed out that ensuring data remains accessible and in its original form for years is one of the high priority targets in his strategy plan. "The ability to protect and secure content for long-term preservation is critical for us to realize our objectives," says Tse.

When choosing a solution provider, Tse took into consideration its industry footprint, market awareness and dedication to future product development. On top of that, increasing server and storage sprawl with numerous silos of infrastructure supporting different workloads is expected to happen along with the continual development of St. Teresa's Hospital. "We really need a solution to facilitate this challenge," says Tse. "Hitachi Data Systems gives us the confidence and ability to develop our healthcare services. We are always looking to build long-term partnerships with all our solution providers. We found that the Hitachi Data Systems solution is cost-effective, with functionalities exceeding our requirements. Moreover, we can also see a future roadmap in the Hitachi Data Systems broad product line."

 **Hitachi Data Systems Corporation**

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**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)

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