



# CASE STUDY

## Solution at-a-glance

### Company

Hong Kong Polytechnic University  
Department of Optometry and Radiography

### Industry

Education/medical

### Employees

2,775 staff  
22,000 full- and part-time students

### Storage application

Develop a scalable, affordable and reliable archiving solution for its Picture Archiving and Communication System (PACS)

### StorageTek® solutions

- L80 tape library
- Application Storage Manager® (ASM) software
- SDLT tape drives

### Related solutions

- Sun Solaris
- Sun Disk RAID storage
- Self-developed PACS applications

### Business results

- Enhance academic/research development with high data availability
- Facilitate better consultation and clinical service
- Improve overall productivity at high price/performance
- Protect return on investment with high scalability

## Hong Kong Polytechnic University

### Hong Kong Polytechnic University enhances academic, research development and clinical service with StorageTek® solutions.

The Department of Optometry and Radiography (hereafter called "the department") of the Hong Kong Polytechnic University operates a radiography clinic that provides medical imaging services for more than 2,700 university staff, their relatives and 22,000 students. The department is committed to achieving academic and research excellence to improve the healthcare service and well-being of the local community.

### Business issues

Hong Kong Polytechnic University is the first campus in Asia Pacific to establish a PACS, a complete image-management system for taking medical images, making diagnoses, and distributing and storing digital images. Previously, the department stored X-ray and medical images on film and had encountered problems with image storage and retrieval.

As the department continues to expand its curriculum, cross-universities research and clinical service, storage of its redundant array of independent disks (RAID), which supported only up to 100 gigabytes (GB) of data, could no longer accommodate the enormous amounts of data generated from imaging modalities such as computed radiography (16 megabytes (MB) per examination), computed tomography (20 MB) and mammography (160 MB). It required a scalable, reliable and affordable archiving storage solution to go with its PACS.

### The solution

After evaluating a number of vendors, the department selected the StorageTek solution and COL, a StorageTek Premier partner, for the overall implementation.

"We chose StorageTek's solution as it meets our requirements for a scalable, high-capacity and cost-effective solution, and offers the best price performance among the other vendors," said Dr. Tang Fuk Hay, associate professor, Radiography, Department of Optometry and Radiography.

The solution, which comprises the L80 automated tape library, Application Storage Manager® (ASM) software and Super Digital Linear Tape (SDLT) tape drive, provides a 4.4-terabyte (TB) archiving storage, which enables PACS to operate in full force.

### Business benefits

*High data availability to enhance academic and research development*

StorageTek's high-capacity 4.4-terabyte (TB) archiving solution equips the department with high data availability to extend the breadth and depth of its research and teaching, share data and conduct large-scale, cross-institution international research. Research based on different imaging modalities such as magnetic resonance can now be performed.

*Facilitate better consultation and clinical service*

Through ASM software, the department can quickly retrieve a patient's past images from disk RAID (3 seconds for a 10-MB file) or tape library (1 minute for a 10-MB file) for comparison with recent images. Radiologists can provide better diagnosis of the incremental changes in a patient's images or perform digital image manipulation, such as 3D image reconstruction, to interpret the patient's conditions.

*Improve overall productivity at high price/performance*

The long-term storage extension improves the overall productivity of the department with fully automated storage, retrieval and transfer (through Internet2) of medical images.

Dr. Tang said, "In the past, it took us at least three days, from taking a patient's X-ray to manually delivering it to the doctor for generating a consultation report. Now it takes us only half an hour to do so."

"In the face of rapid data growth, it is not possible for us to keep on expanding the existing disk RAID storage. The tape library delivers great performance with high data capacity and ultra reliability at high price performance," commented Dr. Lawrence Chan, research associate in PACS and the Teleimaging, Department of Optometry and Radiography.

*Protect return on investment and offer high scalability for future growth*

StorageTek's open and scalable architecture (expandable to 8.8 TB compressed storage) supports the department's heterogeneous systems, including the UNIX and Windows NT environments, which assures the department's return on investment and offers scalability for its rapid storage growth in the future.

#### Plans for the future

The department plans to expand the PACS capacity by adding more cartridge slots into the tape library, and to assign specific slots for three streams of data storage, including teaching, research and clinical applications. Dr. Tang commented, "Separating such data under different storage will give us more flexibility and higher efficiency in managing our data and work process, enabling us to maximize performance and capacity in the respective areas, while concurrently managing the growth of our overall system."

#### About the solution

The L80 tape library is ideal for mid-sized environments with data-dense, throughput-intense requirements. Multiple upgrade paths protect the investment and allow easy expansion of the system.

Application Storage Manager® (ASM) software is an intelligent data movement software designed to automate data management and retrieval across a storage hierarchy via user-defined policies.

The SDLT tape drive offers superior speed, unmatched data access and sufficient capacity for business applications.

#### About the Department of Optometry and Radiography, Hong Kong Polytechnic University

As the largest tertiary institution in Hong Kong in terms of number of students, the Hong Kong Polytechnic University offers a wide range of courses which meet industrial, commercial and community needs. It is the only education institution in Hong Kong that offers comprehensive education programs tailored for health care professionals including the radiography program. The department is equipped with the latest imaging modalities including computed radiography, a spot digital mammography unit and a state-of-art 3D radiotherapy computer treatment planning system for academic and research development.

#### About COL

COL is Hong Kong's leading independent computer services company specializing in providing data centre services which include facilities management, disaster recovery, and application and network development services. [www.col.com.hk](http://www.col.com.hk)



#### ABOUT STORAGETEK®

Storage Technology Corporation (NYSE: STK), a \$2 billion worldwide company with headquarters in Louisville, CO, has been delivering a broad range of storage management solutions designed for IT professionals for over 30 years. StorageTek offers solutions that are easy to manage, integrate well with existing infrastructures and allow universal access to data across servers, media types and storage networks. StorageTek's practical and safe storage solutions for tape automation, disk storage systems and storage integration, coupled with a global services network, provide IT professionals with confidence and know-how to manage their entire storage management ecosystem today and in the future.

StorageTek products are available through a worldwide network. For more information, visit [www.storagetek.com](http://www.storagetek.com), or call 1.800.275.4785 or 01.303.673.2800.

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Dr. Tang Fuk Hay, Associate Professor, Radiography, Department of Optometry and Radiography.