



### **Smartly bridging the health care gap**

By: Mari-Len De Guzman

IT World Canada (14 Jun 2005)

When the Ontario Ministry of Health began preaching the good news of a technology infrastructure capable of connecting the province's health care system end to end, there were many doubting Thomases.

Two years and several deployments later, the Thomases of the health care sector have seen for themselves and believed.

Today, the Smart Systems for Health Agency (SSHA) is struggling to keep up with the demand for electronic connectivity.

"We've built the [network] environment. People now believe...we were able to prove a level of expertise," said Rod Ward, director of production support at SSHA.

It was this environment that this reporter personally witnessed during a tour of the east end facility, which includes 5,000-sq. ft. of production floor packed with servers, storage devices, and backup tapes, as well as 2,000-sq. ft. of office space for support teams, including about 20 contact centre personnel.

A major concern from the sector related to the privacy and security of medical records, said Ward. The idea of all these private health information records being shared electronically among the province's 250,000 health care workers, just did not appeal to the would-be users, he said.

According to Ward, it all boils down to "a bit of a culture shift" in how health professionals work. "You're asking people to change the way they operate. People from the health care sector...are so busy on a day-to-day basis. So to interrupt them and say 'let's change the way you do things', that's tough sell."

That is why SSHA was diligent in ensuring the technology architecture was secure and private, Ward said. "There were issues in terms of the technology and how complex the environment had to be. It had to be designed in a way that was different from pretty much any other sector, because of the dependence on personal health information."

Established in January 2003, SSHA's highly secure and private network infrastructure allows the agency to provide a number of services to healthcare professionals such as round-the-clock application hosting, telecom services, portal hosting, electronic health records, e-mail and registration.

Fully funded by the Ministry of Health, SSHA's services are available for Ontario doctors, hospitals, laboratories, public health units, community care access centres and pharmacies.

In partnership with NORTH Network, CareConnect, and Videocare, SSHA facilitates video conferencing between patients and doctors who are hundreds of miles apart.

The North Eastern Ontario Network is an alliance of nine hospitals that uses SSHA's network connection to share common patient care information, clinical documentation, patient entry, billing and admission.

SSHA also provides a network connection for the Ontario Drug Benefit Program data centres, which will soon be interfaced with Ontario pharmacies and hospitals to enable access to patient's prescription information, according to Ward.

SSHA runs two identical data centres located on the east and west ends of the GTA. These two centres "mirror" each other, said Ward. Everything is duplicated, from the data that flows through the network down

to the serial numbers identifying each device.

SSHA operates the two locations as "one big data centre", said Ward. The two facilities are linked by four 655 MB Dense Wave fibre cables.

#### Secure environment

To say security is tight at the SSHA data centres would be an understatement.

Access to the building requires two pieces of identification from any visitor. Upon verification, a pass card is issued by security containing a five-digit code that has to be keyed in to activate the revolving entry doors.

This whole process only gets you as far as the ground floor. Visitors must always be accompanied by authorized personnel with a security badge that is scanned for each time an access door is opened.

In addition to the security access card, doors leading to SSHA's production room are secured by a biometric entry system that requires thumb print authentication.

Ward says SSHA is careful to strictly adhere to its privacy and security policies. "We [also] have a lot of in-house expertise to manage the environment, because it is complex." He said as a custodian of highly sensitive data, SSHA takes security very seriously.

As an added measure, the SSHA director said, the centre will soon implement a keypad lock system on all cabinet doors containing live network devices.

When a device needs to be worked on, an operator is given a key code and a specific time within which the job has to be done. The key code is active only for the time period specified, said Ward.

Every deployment of an application goes through a stringent quality assurance process that involves countless tests prior to live implementation. Following the development, integrated testing is done to ensure the application is working properly.

The application then passes through a "staging area" where it is tested in a mock production environment. It's only when a certain level of confidence is attained that application goes live, said Ward. "We don't want to be in a position where some kind of security or privacy breach happens because of something we missed. So we can be frustratingly deliberate about how we implement things but there's a reason for that."

#### Private partners

Systems integration was also a major challenge for SSHA. When the agency was scouting for vendor partners, it became clear that no single vendor would be able to provide all of SSHA's technology infrastructure requirements, said Ward. And convincing vendors that the project would have to be a partnership among different providers was difficult in the beginning but they eventually got the point.

"It took us a while to get the vendors to understand that this was a partnership, and that they had to work with us to come up with a solution. No one vendor could do all of it," said Ward.

For this successful undertaking, the SSHA had won last year's Showcase Ontario Diamond Award for public-private partnership.

SSHA deploys EMC's storage area networks, StorageTek's tape backup technology, Microsoft Exchange's e-mail messaging, Dell's mail servers, Cisco's catalyst switch technology, and Allstream's public key infrastructure (PKI) security system. HP provides SSHA with a highly secure data centre location.

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