

## HP and Cisco Help St. Olavs Hospital Achieve “All Over IP, IP All Over”

reach: **beyond**



“We are building a hospital ICT infrastructure to unlock the benefits of modern healthcare communication for the next decades. Our suppliers must not only be state of the art, but state of the *future* art.”

— Arve-Olav Solumsmo, Public Relations Manager,  
Hospital Development Project, Central Norway

### Background

St. Olavs Hospital in Trondheim, Norway, is the regional hospital for the mid-Norway health region, an area of 650,000 people covering Møre and Romsdal, Sør-Trøndelag and Nord-Trøndelag counties. With 7500 employees and 922 beds, St. Olavs provides treatment to 44,581 patients per year. St. Olavs is also one of Norway’s five university and research hospitals with 120 new medical students per year. Originally established in 1902, the hospital was beginning to show its age despite efforts to continually update the facilities. In 2002 the decision was made to design a new hospital from the ground up on the existing site over a ten-year period. The new hospital campus would encompass 11 clinical centers linked with glass skywalks and underground passages and would eventually include a patient recovery hotel, supply center, teaching center, and other facilities. They wanted a hospital that was fully patient centric, and ICT was a strategic tool for them to be able to fulfill their goals. Their vision was to have “secure information available to the right person at the right time.”

## Challenge

To manage this daunting task, the health region created a company called Helsebygg. The ICT part of this was managed by a visionary named Tore Indreraak, CIO, who immediately set a goal to make St. Olavs the most modern hospital with the most advanced networking technology and Internet-enabled solutions available. Indreraak wanted the converged network to facilitate better mobility, increased flexibility, and enhanced security that would lead to new treatment methods, better quality of care, and improved services to the hospital’s patients and to the public. And since 80 percent of the hospital’s costs are related to salaries, Indreraak’s goals also included increasing productivity and reducing costs.

Trine Stroemsnes, Associate Vertical Sales Manager, made the first initial contact with St. Olavs and invited Indreraak and his team at Helsebygg to a Cisco Executive Briefing Council (EBC) in 2001, building confidence that Cisco had the right solution for St. Olavs’ new hospital. They also decided on an “all over IP, IP all over” approach that would connect each of the facilities enabling seamless communication and operation. During the bid phase Telenor, a leading telecom, IT, and media company in Norway, partnered with HP who brought in Cisco® as a partner. Although Nortel was considered as second option, the customer selected the Telenor/HP/Cisco team, the only vendors that could provide a fully IP-based solution that would integrate with the hospital’s nurse call system and, in time, other medical systems.

## Solution

The new communication infrastructure is almost end to end Cisco. The Cisco MPLS/VPN campus network has Cisco Catalyst® 6500 switches in the core, data center, and access layer, and Cisco Catalyst 4500 Series switches on the edge. Cisco Aironet® 1200 Access Points provide full wireless coverage, while a Cisco CallManager 4.1 IP telephony implementation will be supported with Cisco Unity™, Cisco Emergency Responder, Cisco IP Integrated Contact Distribution, more than 3000 IP phones, and more than 1000 wireless phones.

Based on the Cisco wireless network, HP will integrate its PDA—called Medical Data Assistance (MDA). The MDA will be used as an endpoint for lab results and requests, it will have a text message application for emergency

messages, short messages from staff, lab results and requests, maintenance messages, patient signal distribution, work orders, and also function as a phone based on IP Blue VTGO Softphone. The wireless network will also provide computer capability for the physicians’ tablet and laptop PCs with screens that can display x-ray pictures and other vital data right at the patient bedside. Since the hospital is built as 11 centers, the wireless network will need to have coverage both inside the different buildings, and also for staff moving between buildings.

The solution also includes the implementation and integration of bedside terminals from the Norwegian company, Cardiac. These bedside terminals give access to entertainment for the patient and clinical applications for the staff. The entertainment solution gives access to IP-based TV and radio, Cisco IP Communicator-based telephone, Internet access for the patient, and even an application for ordering food. The University Medical School has been equipped with Cisco routers, IP telephones, radio-TV systems, and audiovisual equipment in addition to HP Infopaq medical terminals and HP PCs. The IP platform includes digital dictation, web collaboration, XML-applications, softphones, and telephones used as overhead paging systems. Wireless coverage throughout the hospital campus provides access to information about patients at the point of care. IP networking connects communication systems throughout the hospital and enables full voice and data mobility in all areas.

HP and Telenor developed the design and implemented the training and operation of network electronics, cabling, wireless networks, and advanced telephony solutions to the hospital, including patient terminals, portable data, and the telecommunications unit. HP also managed the IT architecture, security solutions, testing, and implementation of the network.

“St. Olavs has a motto they call “Patient in Focus,” says Jon Thue, Cisco Account Manager. “Cisco technology will enable St. Olavs to manage its communication applications throughout the hospital. Patients will have access to services like Internet, telephony, and TV, all IP-based on the bedside terminals. This is a solution provided by Cardiac, a Cisco Architecture for Voice, Video, and Integrated Data (AVVID) partner, together with Cisco and HP.”

"The Cardiac solution is a messaging server integrated with Cisco CallManager," adds Jorleif Aagaard, Cisco Systems Engineer. "This application enables nurses and physicians to initiate emergency calls while the intelligent IP infrastructure identifies the location of the emergency caller and transmits it to all first responders."

Currently the old hospital campus still has some Nortel SL1 equipment. The existing solution provides full integration between Cisco CallManagers and the existing Nortel platform, but eventually all Nortel equipment will be removed.

## Results

- Greater mobility and flexibility.
- Enhanced security and higher availability.
- Integrated university clinic with new treatment methods, better quality of care, and improved service to patients and public.
- Increased efficiency and lower costs.

## Follow-On Projects

The ten-year project is scheduled for completion around 2012. Currently, St. Olavs is implementing a solution that will use 802.1x and authentication on all switched Ethernet ports. "They are heading toward a Cisco self-defending network solution. With every large and growing amount of information that needs to be accessible in a secure and fast way, they most likely need to upgrade to a faster firewall system. Our PIX<sup>®</sup> firewall blade in the Cisco Catalyst 6500 Series Switch is very likely to be the next level of firewall performance they need. "In addition, we're quite sure that we, together with HP, will be able to position the storage solution for them within the next two years," Aagaard says.

## HOW WE WON:

- **Start the sales cycle early.** The Cisco team worked with the customer from the moment they started planning for the new hospital in 2000 all the way through to the public tender. "We started the sales campaign early enough to position Cisco in such a way that the AVVID end-to-end story made it very difficult for the competition," recalls Trine Stroemsnes, Cisco Associate Vertical Sales Manager. "Early partner engagement laid the foundation for a strong team to address specific industry issues in such a way that the dialogue centered on vital life-and-death matters."
- **Leverage the Cisco technology message.** The Cisco AVVID infrastructure story was a key differentiator which St. Olavs realized would enable them to build a convergent network with intelligence, scalability, and high availability.
- **Show proven high availability and reliability.** St. Olavs' vision of being a totally paperless hospital required an infrastructure that could provide 99.999 percent availability. No other competitor could match Cisco's ability to deliver a state-of-the-art solution that the customer could trust, without incurring the risk of bleeding edge technology. Cisco's story around design of networks with high availability helped them rise above the competition.
- **Leverage strong local partners.** St. Olavs wanted Norwegian suppliers with financial strength. "We were able to offer that through Telenor, as well as the advantage of partnering with Cisco, one of the world's other leading IT innovative companies," says Randi Enger, Project Manager, HP. "The customer wanted to see these three companies working together on this high-risk, high-profile project because we all have proven expertise as well as a good financial platform and good R&D."

## At a Glance

### Strategic Alliance Partners:

HP and Cisco Systems, Inc.®

### HP Sales Representative:

- Morten Flagstad, Account Manager, morten.flagstad@hp.com, +47 24097000
- Randi Enger, Project Manager, Randi.enger@hp.com

### Cisco Norway Team:

- Jon Thue, Account Manager, jtue@cisco.com, +47 (0)23 27 3625
- Jorleif Aagaard, Systems Engineer, jaagaard@cisco.com, +47 4160 1749
- Trine Stroemsnes, Associate Vertical Sales Manager, tstroems@cisco.com, +47 (0)23 27 3680

### Customer Name:

St. Olavs Hospital

### Deployment Status:

In Process/Phased Approach: Phase 1

### Theater:

EMEA

### Solution Type:

IPC Solution; Campus MPLS LAN Switching; IP Telephony; Unified Communications; Wireless Mobility

### Cisco Products Included in this Win:

- Cisco 7900 Series IP Phones
- Cisco 7800 Series Media Convergence Servers
- Cisco Aironet 1200 Access Points
- Cisco CallManager
- Cisco Catalyst 6500 Series Switches
- Cisco Catalyst 4500 Series Switches
- Cisco Emergency Responder
- Cisco IP Communicator
- Cisco IP Integrated Contact Distribution
- Cisco Unity

### Total Deal Size:

- **Cisco Revenue Driven:** US\$3.5M (CY2004); US\$1.5–2M (CY2005)
- **HP Revenue Driven:** US\$3.5M (CY2004); US\$2M (CY2005)

### Industry/Vertical:

Healthcare



**Cisco Systems, Inc.**  
170 West Tasman Drive  
San Jose, CA 95134-1706  
www.cisco.com

**Cisco HP Strategic Alliance**  
www.hpcisco.com

**Hewlett-Packard Company**  
3000 Hanover Street  
Palo Alto, CA 94304  
www.hp.com

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