St. Bernard's Hospital, Gibraltar

Exterity IPTV solutions open up much wider opportunities for medics and hospital authorities

Imagine a hospital where every patient has a television screen, with access to up to 60 channels. Where patients are able to choose their meals from an interactive on-screen menu. Where the combined television and IT network can be used to disseminate training, allow access to patient notes and vital data, and link out to primary care centres in the community.

Then imagine that such a brand new hospital could be operational, from start to finish, in just over two years. The hospital in question is in Gibraltar, UK. It's a 220-bed facility costing £55m which has been 'built' into an existing building that forms part of the territory's Europort complex.

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Derek Altman, Deputy Director of
Operations, St. Bernard's Hospital, Gibraltar

The challenge

From the start, the project's planners — the Gibraltar Government — decided to equip the building with structured cabling to create an efficient IT infrastructure. At the same time it was planning for patient services and entertainment, so they decided to carry both TV and data over the IP network, partitioning it into virtual private networks (VPNs) as required.

This design would give the hospital operators enormous flexibility in terms of what they could deliver to (and receive from) the 2,600 IT connection points in the building.

"At the old hospital there used to be one or two main televisions within each ward," explains Gibraltar General Hospital deputy director of operations Derek Alman. "The wards are based on "Nightingale" layouts — open wards with cubicles — so it was easy to deliver entertainment but patients didn't have a choice of programmes, they had either one or two TVs to share between about 30 patients. We had no complaints, but the new hospital was designed to have cubicles housing two to four patients at a time in opposed beds or single rooms. You can't put in a central television and we couldn't rely on screens in dining areas or day rooms."

In the UK, patient television services are increasingly being paid for (and operated by) private operators who derive revenue from them and from telephone operations, but Alman and his colleagues didn't want to embrace that business model: "An expensive pay-per-view system was not going to go down well with the public in Gibraltar, and the Government was opposed to offering a new system based on payment when the old system was free.

"When we started looking at business models we found out that because we were far away from the UK some of the companies were not very interested, and some of the costs shown to us were exorbitant. We also investigated the offerings of companies in Spain and France that used coax systems with CRTs, but we were already putting in structured wiring.

"We wanted a solution that would use our structured wiring and which would deliver a service which was not based on the same economic model as in the UK. There were not many systems available on the market that came in at reasonable capital expenditure, didn't incur recurrent expenditure, and didn't require patients to pay for it," Alman admits.

Having become something of an expert in finding and sourcing equipment and services at high speed — his role during the 'build' was to act as technical services manager advising on everything from operating theatre design to sterilisation techniques — Alman discovered the Exterity television over IP system on the internet, contacted the company and was put into contact with ITM, which carred out demonstrations and won the project.

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"There is no physical segregation between the network of the hospital and the patient television network, the only separation is through the use of VLANs," says ITM design consultant André Ingram. We can control whether the content is delivered to a patient's bed or to a nurse's station. If we put an encoder and a camera in an operating theatre, you won't want a patient to see it, but you will want the school of nursing to see it and you might want a nursing station to see it at night. Tutors currently spend a lot of their time going from one nursing station to another. If they can accomplish this centrally they will save hours of walking around the hospital"

André Ingram, ITM design consultant

The solution

Like everything else, the video over IP was fast track. ITM received the go-ahead in late December and final instructions in January, had an installation team on site from the beginning of February, had the first rooms up and running by the time existing patients were transferred from the St Bernard's facility on the first weekend in February and completed the first phase of the installation (135 of the eventual 212 rooms) by the end of February.

As the installation was using Exterity IP-based encoders, the cabling to the rooms was not the issue. But installing the specially-made articulated screen arms, 7in diagonal 'bedside' LCD screens, remotes and headphones powered by a set-top box in each room was, and there was a lot of work to be done on satellite dishes (there are two on the roof) and on the network itself.

Overall, ITM has now installed a 1.8m satellite dish (for reception of Astra-carried channels), a 60cm dish (for Hisposat), an Exterity TVgateway that can handle up to 60 TV channels, UHF/VHF/FM demodulators to handle terrestrial TV and radio, servers that can convert RGB and analogue base band signals to MPEG-2 for transmission over the network (so that legacy equipment such as VCRs and DVDs can be used to inject learning materials, for example).

The IT/video elements include an assortment of video and audio decoding formats, network and media streaming protocols, as well as software that manages the AV appliances and it is all administered using network segregation techniques.

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Derek Altman, Deputy Director of Operations, St. Bernard's Hospital, Gibraltar

The result

Not surprisingly, the patients are pleased (and are even requesting the Freeview-carried shopping channels, say anecdotal reports). The hospital and the Gibraltar Government are also pleased. "One of the beauties of the system is that it is very open-ended, so we could eventually deliver patient information as well as educational material for the staff," says Alman. "We could even, in the future, carry advertising to create some revenue," he adds. However, that doesn't appear to be a Gibraltar Government priority.

Its NHS status is based on being a public authority, not a PFI-backed trust, and the emphasis is on care for Gibraltar's community and 'entitled' patients — including at least some of the expat Brits living in Southern Spain. "We pride ourselves on having an unequalled health service," says Alman. "We will send our patients to the UK or Spain and pay for specialist treatment, but it is not a private hospital and, at the moment, private practice is not allowed."

Within the first year the system's remit will be extended to provide a video over IP facility, so that content recorded in operating theatres can be streamed to the medical school in the building; a further video over IP facility for learning applications within the school of medicine; digital signage within the hospital; and the provision of local viewing rights for nurses controlling wards.

The system will also be linked to external sites, including Gibraltar's primary care clinic. Further phases include plans to make the bedside screens interactive — so patients could, for example, choose from menus via a web browser or access online shopping and library services. And it is not only patients that could use them. Password access will allow medical staff to access and annotate notes at the bedside, and regularly-monitor medical data (temperature, pulse, rate) could be transferred from paper to the network and viewed at nurses' stations in the wards.

About Exterity

Since 2001 Exterity has been designing, developing and manufacturing technically innovative products that deliver networked video over IP to some of the leading organizations across the globe. These organizations choose Exterity products because they want the best, because they demand excellence.

Enabling distribution of HD quality TV and video over enterprise IP networks to an unlimited number of end points, Exterity solutions support large volumes of content and receiving devices without compromising system performance or availability.

Highlights

- Deployed in over 40 countries
- Scalable solutions for organizations of any size and across any sector
- Unique industry leading features and market specific application

Headquartered in Scotland UK, we extend our global reach through our offices in Atlanta, London, Paris, Munich, Dubai, Hong Kong and Johannesburg. Localized knowledge and expertise is enhanced through the Exterity StreamForce program of credible, technically innovative partners, plus an extensive network of in-country resellers and distributors.