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Intelligent Infrastructure

In the current economic climate many hospitals and medical centres are grappling with cost-cutting measures in their ICT architecture. The reality for today's healthcare CIOs is that they need to both drive IT efficiencies in the short term and ensure that their investments today will support the demands of doctors and nurses well into the future.

This is no easy task in complex environments, where information and images must be transmitted quickly and efficiently to support the correct treatments and diagnoses. The Máxima Medical Centre (MMC), one of the Netherlands' leading training hospitals, is a good example of this complexity. The organisation has a staff of 3,400 who treat nearly 470,000 patients each year. Of these, 23,600 patients are accommodated in 836 beds across two locations.

Fast access to information held in the centre's data stores is vital both to the efficient running of the hospital and the quality of patient care. 10 Gigabit cabling infrastructure was recently installed to handle medical images, such as x-rays and CT scans, which surgeons need to have immediate access to as they prepare for operations.

Energy Efficiency

As the IT infrastructure of hospitals like MMC grows more complex, more efficient energy consumption makes sense, not only because of mounting governmental pressure on carbon emissions, but also because of the financial benefits. As energy costs continue to rise, CIOs cannot ignore the need to maximise their power efficiency.

Given that a large portion of the IT backbone of hospitals is dedicated to supporting patient administration, power continues to be used by devices such as computers, phones and wireless access points, even when they are not in use.

To this end, energy management software can be combined with Intelligent Infrastructure to enable hospital IT operations personnel to understand, optimise and control power across the entire network infrastructure, potentially affecting any powered device.

What is Intelligence?

An Intelligent Infrastructure Solution (IIS) provides the missing link between real-time network management tools and the traditionally passive structured cabling infrastructures that connect network devices together.

By providing insight into the physical layer, IIS helps IT professionals and network managers ensure the efficiency of their network by providing accurate reports for capacity management; generating real-time alerts to detect, locate and resolve any unauthorised changes within the network; providing automatic discovery and tracking of physical location of devices connected to the network in real-time, and proactively applying changes utilising electronic work orders in support of change management.

Power Efficiency

IIS provides the capability for real-time mapping of switch ports to the physical location of wall outlets and network devices. This is achieved through a combination of data cabling information that is gathered from the intelligent infrastructure hardware and networked device data that is collected from managed network switches.

IIS has complete visibility of every physical location that is connected to each switch port. Whenever cabling information changes, IIS detects that change in real-time and automatically updates the cabling information maintained by the management software.

The availability of real-time mapping information between switch ports and the physical location of wall outlets provides IT managers with a very effective way to apply energy management policies to networked devices.

The combination of IIS and energy management can be used to optimise energy consumption by defining when power should be supplied to devices in certain locations, or when they are not in use and can be powered down. For example, a profile could dictate that all the devices in

certain areas of a hospital are powered down after 7pm when all the staff have gone home, and then powered-up again at 7am the following morning. These systems can function across a broad level, such as an entire building, right down to specific floors, single rooms, and even to individual wall outlet.

Because such policies are location-based, these systems can selectively exclude certain locations or create specific policies for certain rooms, offices or desks. IIS allows IT managers to select locations onscreen directly from the building layout, and chose the locations where the selected policy is to be applied. One-time policies can also be created to manage devices in rooms that are only used intermittently, like conference rooms or training facilities.

Additionally, IIS has the ability to track changes in network connectivity, allowing for dynamic implementation of energy policies that can be triggered automatically whenever a new connection is established between a switch port and a wall outlet.

Reaping the Rewards

Knowledge, as they say, is power and the detrimental effects of not completely understanding how your IT environment is functioning are obvious. IIS allows hospital staff to make informed decisions about device usage by making the consequences of such decisions – such as increased demand for power, heat and space – more visible.

The total cost of IT is actually hard to define unless you have this kind of visibility and control through intelligent infrastructure. Intelligent monitoring systems can provide critical data that is key to reducing both OpEx and power consumption.

In this context, CIOs should re-examine how infrastructure is being used and deployed in their organisations. They need to ask whether existing IT tools are sufficient to make workers more efficient, whether current investments are being optimised or whether there are alternative technologies that can produce worthwhile savings in both energy and OpEx.

The power of intelligent infrastructure should not be underestimated in meeting this end.

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