



A snapshot of the vital role played by the **swift** plus managed service provided to the University Hospital NHS Trust and NHS PCT Trust in Newham by Networks First's out-tasked services group.

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swift plus makes network downtime history for Newham NHS Trusts

For National Health Service organisations today, reliable and continuously available IT is critical in enabling the infrastructure to support medical staff, clinicians and administrators in their daily work - not only those systems used by individuals, departments or sites, but also that vital element which unites the many different skills within any trust – its IT network.

THE CHALLENGE

As ICT Network Manager at Newham University Hospital NHS Trust since 2000, Matt Kopli's role is to maintain a dependable IT network to facilitate the complex interaction between his organisation's many departments and services. In an acute NHS environment like his where lives are at stake, network downtime, however small, can prove fatal. Without the instant means for healthcare professionals to communicate and exchange information, patients' lives can be quickly put at risk.

According to Kopli, the days when the mainframe and a few disk drives were an IT management team's only concerns are long gone. He says networks that often began as modest arrangements to support a specific hospital or clinic have mushroomed into sprawling infrastructures embracing the needs of several sites.

"In particular, today's increasingly virtualised server environment has made many healthcare networks extremely complex," he says. "To the extent that, without the network to

connect the vast array of medical, clinical and administrative processes, running a healthcare organisation like ours would no longer be possible."

It's all about service delivery

In hardware terms alone, Kopli says there are now many more devices to keep tabs on. Today he must constantly check the trust's network infrastructure for server performance, disk space, processing and memory to ensure that no device peaks out. He must continually monitor switches and routers to check the bandwidth of links and make sure ports stay up.

"Rather than treating hardware items like servers and switches as isolated components, we prefer to view them as a collection of devices that together make up a particular service. It means that if one of those devices fails, we need to know immediately why the service is degraded or down.

"From a service delivery perspective, it's purely a management issue – we need to know which port has



“The Networks First managed service is such a successful solution that we’ve begun rolling it out over our neighbouring Newham NHS Primary Care Trust, whose network management now falls within our remit as part of our recently-formed Shared Service”.

faltered and what requires fixing. In the healthcare environment, it’s all about service delivery – providing services to those who treat patients. What’s important in a hospital scenario like ours is to ensure the overall service we’re providing remains permanently available. Network downtime is not an option.”

THE SOLUTION

Anticipating the longer term need for outside assistance to monitor and manage its network infrastructure, in 2001 the Newham trust contracted McKesson, the world’s largest healthcare services and healthcare IT specialist, to provide it with a managed service. Six years on, in line with its UK strategy to focus on expanding and delivering software delivery services across the NHS, McKesson transitioned the management and support of its networking division to Networks First, a managed service provider renowned for its successful track record within the healthcare sector.

From an everyday perspective,

the delivery of the managed service was unaffected since Networks First already maintained the networks of several McKesson customers and had an NHS Purchasing and Supply Agency (PASA) framework agreement, enabling it to deliver full network support to customers. What’s more, as a focused services provider, it can provide additional experience and expertise across a broad range of network infrastructure technology including cable plant, desktop, servers, IP telephony, convergence and security.

“The kind of IT infrastructure required to support our trust must be managed efficiently and effectively around-the-clock,” explains Kopli. “Degraded or failed infrastructure performance can have life-threatening effects through many points of service. We were therefore attracted by Networks First’s **swift** plus network management service because it provides the availability, speed and reliability of an IT infrastructure capable of supporting some 5000 healthcare staff.”

Automated fault isolation and root cause analysis

The Networks First dedicated network management system (NMS) is located at the heart of the network, rather than remotely, thereby reducing the number of dependencies between the NMS and the managed elements. The solution provided to Newham combines Networks First’s in-depth knowledge and experience of supporting and monitoring business critical networks with the extensive capabilities of CA’s Spectrum enterprise management system.

Kopli believes that in the UK health market, many networking problems arise because IT departments are often insufficiently resourced. “It means they spend an inordinate amount of time fire-fighting, rather than improving services. If you have a managed service and tools to tell you where the problems are or where they’re about to occur, you can proactively fix them before they impact services.

“The Networks First service does just that by enabling us to monitor trends and predict behaviour, so for example, we can add more memory to a server to make it run more efficiently or install a more resilient link to replace one that keeps dropping out. It gives us a holistic view of our infrastructure, enabling us to plan and prepare much more efficiently.”



"By working hand in hand with Networks First remote network management team, we are able to drive efficiency with one unified view of the network".

Kopli particularly values the automated fault isolation and root cause and impact analysis technology built into the service. "It can pinpoint the source of performance or availability issues, which means we've cut our time to find and fix problems dramatically. It means my team can provide much higher quality of service without increasing costs."

Spotting where the real faults lie

Kopli says he appreciates the true benefits of the Networks First managed service even more when outages occur on areas of the network not yet monitored by the solution. He cites an occasion when one of the drives holding the information about the cluster on the Exchange server became full and crashed, which meant the service became unavailable.

"I had to deploy one resource to look at the service and another to examine the SAN," he says. "Between them, it took around five hours to pinpoint the actual problem. Had Networks First been monitoring that cluster and disk, they would have alerted us that the disk was reaching capacity,

enabling us to delete files without any loss of service. As a result, we're currently looking at adding our Exchange service to the items they monitor."

Most clinical departments at Newham now rely on electronic systems to record and access information, be it a locally developed database, a national application or one provided by an outside supplier. Kopli says the trust is currently carrying out a Picture Archiving and Communications System (PACS) pilot, whereby patient monitoring equipment providing radiography images direct to digital in an Intensive Therapy Unit (ITU) – traditionally stand-alone equipment – will be networked and fed directly into the Electronic Patient Record (EPR).

"Once you start putting devices on the network in an area involving intensive therapy, then those feeds into the EPR become critical," he says. "If they're not coming through and someone's relying on them, it could conceivably lead to avoidable fatalities. In instances like this, a managed service like Networks First's becomes a priceless insurance policy."

Culture shock

In July 2007, Kopli found himself faced with a new set of challenges when his acute trust merged its administration and ICT with that of neighbouring Newham NHS Primary Care Trust. "It's early days yet, but as with many PCTs, the dispersed nature of our sister organisation means its capacity to effectively deliver treatment to patients will increasingly rely on our ability to implement and manage an all-embracing technology infrastructure.

"Whilst many acute trusts like ours are largely on top of the situation thanks to their mature networks, many PCTs have still to find a cost-effective way of centrally managing and monitoring infrastructure services across their hospital site, outlying clinics, GP practices and other healthcare units. Having mushroomed from smaller manageable units into large multi-site organisations, most PCTs have experienced a major culture shock when faced with delivering reliable services to so many endpoints.



“Networks First have given us much greater visibility of our network infrastructure. We now achieve 99.979% network uptime as part of our internal SLA requirement across our data network infrastructure. We’ve been particularly impressed with their performance monitoring and comprehensive reporting facilities”.

“In an acute trust where you have operating theatres, A&E, radiology, pathology, 24/7 service availability is imperative. That’s not to say that keeping the network up and running smoothly in a primary environment, which typically operates on a 9 to 5 basis, is any less important.

THE BENEFITS

From everyday email and administrative functions to EPR and PACS, Kopli believes a healthy and well-managed network has now become as vital as the healthcare treatment being provided. Furthermore, he believes emerging networking technologies like virtualisation, Web 2.0, Service Orientated Architecture (SOA) and wireless will inevitably impact the network environment even more profoundly.

Kopli maintains that as their knowledge of his infrastructure has grown, so too has the value he gets from Networks First, which is why Newham has extended its contract for a further five years. “We achieve 99.979% network uptime as part of our internal SLA requirement across our data network,” he claims.

“We’ve been particularly impressed with their performance monitoring and comprehensive reporting facilities, so much so

that we’ve already begun rolling them out over our neighbouring Newham NHS primary Care Trust, whose network management now falls within our remit as part of our recently-formed Shared Service,” he says “Now whenever users suggest that network links are causing applications to run slowly, more often than not we can produce statistics to demonstrate that this is not the case.

Unified view of the network

Kopli says he originally chose **swift** plus as a cost-effective way to augment his limited internal resource. Now that his team has a shared service responsibility, they have the added task of monitoring applications used both by PCT users and by acute staff.

“With more and more health services being provided throughout the Newham borough, the Networks First managed service puts us in a much better position to monitor the performance of applications - not only at our main acute site where they are hosted, but equally at the clinics on PCT premises out in the community where they also being accessed. By working hand in hand with the Networks First out-tasked services team, we are able to drive efficiency with one unified view of the network,” he concludes.

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