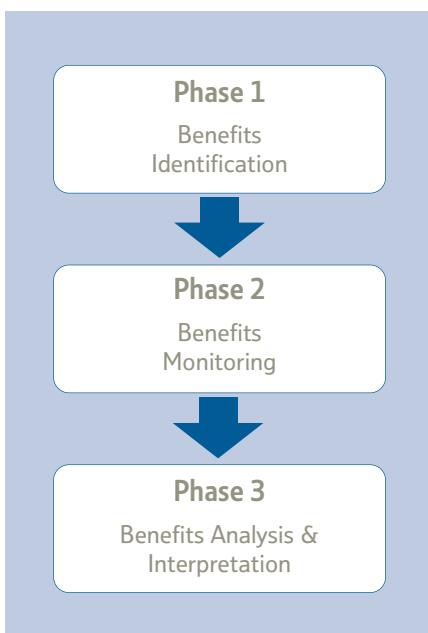


Wireless voice communication helps transform hospital efficiency and flexibility



The trial, starting in January 2006, was coupled with a structured programme to measure the benefits

BT-managed Vocera, which gives staff members a personal hands-free telephone on the move, helps Nottinghamshire NHS Trust use to cut waiting times, improve productivity, and boost staff morale

Executive summary

Sherwood Forest Hospitals NHS Trust recognised that improving communications between staff was key to enhancing patient care, increasing productivity, and meeting government targets (for example, limiting waits at A&E to under four hours). Like many hospitals, its legacy voice communication methods were based on fixed telephony and reactive paging systems. The Trust chose a BT-managed Vocera communications solution, using voice over IP technology over a wireless infrastructure to provide a supremely flexible voice-activated mobile system.

The BT-managed solution has greatly improved efficiency, for example by moving patients more quickly into admitting departments by improving communications between A&E and site co-ordination. People are able to multi-task and individuals are recording timesavings of an hour-and-a-half per day. Other areas of benefit include better utilisation of plaster room and operating theatre slots, improved staff safety – especially at night – and reports on readiness of beds to receive patients.

The gain to point-of-care services is equally striking. Staff can spend more time at the patient's bedside or in treatment instead of rushing off to answer phones or respond to beepers. There are benefits to service staff, too, such as porters, cleaners and facilities managers. The Trust has decided to quadruple its licensed user base to 300, bringing in further departments at King's Mill Hospital and, later, other Trust sites.

“Wireless technology can actually transform the way we run our business. The BT-managed Vocera application can be used in many settings; it's not just a health service application. Where you've got wireless networks, where you've got people who need to communicate, this can transform the way they organise themselves.”

Jeffrey Worrall
CEO
Sherwood Forest Hospitals NHS Trust

Case study

Sherwood Forest Hospitals NHS Trust

“The use of this BT-managed wireless voice application shows that communications can be improved instantly. We don’t have to wait for people to answer their pagers and we can immediately find the resource we need, wherever it’s closest to the patient. I believe the benefits will be enormous.”

Trevor Ludlam
Director
North Nottinghamshire Informatics Service

Marketplace

Sherwood Forest Hospitals NHS Trust runs two general hospitals at Sutton-in-Ashfield and Newark and two community hospitals at Mansfield and Kirkby-in-Ashfield. Each year the Trust treats more than 70,000 inpatients, handles over 100,000 accident and emergency (A&E) cases, and sees almost 250,000 outpatients.

Business opportunity

Sherwood Forest Hospitals NHS Trust recognised that improving communications between staff was key to enhancing patient care, increasing productivity, and meeting government targets (for example, limiting waits at A&E to under four hours). Like many hospitals its legacy voice communication methods were based on fixed telephony. Reactive paging systems meant that clinical staff needed to call switchboard operators to “bleep” their colleagues. Response times were reliant upon unpredictable factors such as the local availability of a free telephone. At night, these problems were magnified.

BT solution

The Trust had already recognised the potential of IP-based wireless technology to achieve improvements in its systems and processes. Trevor Ludlam, Director, North Nottinghamshire Informatics Service, says: “We needed a wireless network to enable computer system access as near the patient as possible. We worked in partnership with BT to design the wireless network. BT is also interested in helping us to make our staff more efficient, and they provide wireless applications such as Vocera.”

BT-managed Vocera is a communications system that employs voice over IP technology over the wireless infrastructure to provide supremely flexible voice-activated mobile telephony. A lightweight hands-free telephony device – commonly known as a “badge” – is worn on a lanyard around the neck or clipped to the user’s clothing. The device permits instant wireless voice communication between staff, simply by pressing a button on the badge and speaking the name of the person to be connected. Text and email communication are also possible, displayed on a small screen on the badge using text-to-speech conversion.

Sherwood Forest Hospitals NHS Trust immediately saw the potential of the technology and decided to run a trial in the A&E, Radiology and Medical Admissions departments at its flagship King’s Mill Hospital. BT undertook to install the wireless LAN and integrate the Vocera server, which operates the voice recognition software, and thereafter run the system as a managed service.

Results

Jeffrey Worrall, CEO at Sherwood Forest Hospitals NHS Trust, says: “One of the key benefits of the BT solution is its use in improving efficiency. In particular, in A&E, we have been able to move patients more quickly into admitting departments, using the system to communicate between A&E and the site co-ordination staff.”

The trial, starting in January 2006, was coupled with a structured programme to measure the benefits, and BT specialists worked closely with the Trust. Karl Miller, Superintendent Radiographer, underlines the dramatic improvements in point-of-care service: “Multi-tasking has become a reality, and waiting times are definitely falling. I must be easily saving at least an hour-and-a-half every day” Phil Bolton, Senior Trauma and Specialist Nurse, adds: “Staff attending someone who is critically ill don’t have to leave the patient to answer the telephone or speak to their colleagues. They are in full communication while dealing with the situation.”

Why BT?

- Understanding of the healthcare clinical and business environment, through in-depth involvement in NHS and private projects at national and local level
- BT provides a fully managed Vocera service with added value such as assistance in benefits realisation and measurement
- Track record in installation and maintenance of secure wireless networks, and system development

Case study

Sherwood Forest Hospitals NHS Trust

The Trust has decided to quadruple its licensed user base to 300, bringing in further departments at King's Mill and, later, other Trust hospitals. "BT have got specialist technical skills, and they provide ongoing support," says Trevor Ludlam. "The use of this BT-managed wireless voice application shows that communications can be improved instantly. We don't have to wait for people to answer their pagers and we can immediately find the resource we need, wherever it's closest to the patient. I believe the benefits will be enormous."

Further benefits include much shorter times to mobilise "crash" teams, better utilisation of plaster room and operating theatre slots, improved staff safety – especially at night – and up-to-the-minute reports on the location and readiness of beds to receive patients. It has also brought gains to service departments, including porters, cleaners or facilities managers who are better able to respond, enabling hospital premises to be kept cleaner and helping to reduce the risks of MRSA.

Jeffrey Worrall concludes: "The BT-managed Vocera system is very intuitive. It's the first time I've seen a technology generate so much enthusiasm amongst general staff. Wireless technology can actually transform the way we run our business. The BT-managed Vocera application can be used in many settings; it's not just a health service application. Where you've got wireless networks, where you've got people who need to communicate, this can transform the way they organise themselves."

Technology blueprint

A BT managed wireless network platform using Cisco technology will provide a centralised, scalable solution built on Cisco 1000 series lightweight access points. Operating on 802.11 protocol it will utilise centralised controllers and a dedicated management platform within a Cisco Structured Wireless Aware Network (SWAN). It can automatically locate Cisco wireless LAN controllers over any Layer 2 or Layer 3 infrastructure. At Sherwood Forest it is integrated with the Vocera server, messaging interface and wireless access points.

The Vocera Communications System is a breakthrough wireless platform that provides hands-free, voice communication throughout any 802.11b networked building or campus. Vocera is designed to increase business productivity, teamwork, and customer service levels. The system enables fluid, instant voice conversations among team members, across groups, and throughout an organization of mobile professionals. The Vocera Communications System is made up of two elements: the Vocera System Software and the Vocera Communications Badge.

The Vocera System Software runs on a standard Windows server and houses the centralised system intelligence: the call manager, user manager, and connection manager programs as well as the Nuance speech recognition software and various databases. The Vocera Communications Badge is a wearable device that weighs less than two ounces and can easily be clipped to a shirt pocket or worn on a lanyard. It enables instant two-way voice conversation without the need to remember a phone number or manipulate a handset. The Vocera Communications Badge is controlled using natural spoken commands. In addition, when a live conversation is not necessary, text messages and alerts can be sent to the LCD screen on the back of the Vocera Communications Badge.

Main BT products and services

- BT-managed Cisco-based wireless local area network
- BT-managed Vocera system including voice-activated badges and server hardware and software

Offices worldwide

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Designed by Westhill Communications

