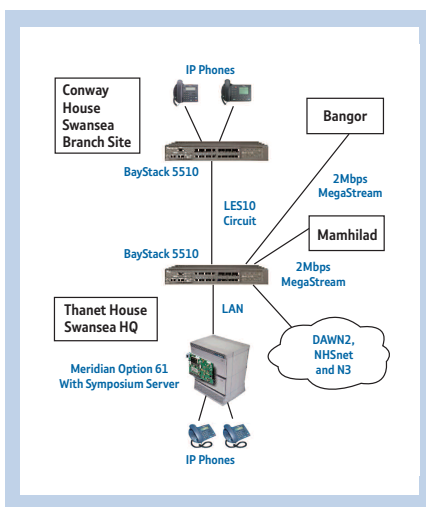


# Existing technology investment protected with IP enabled healthcare call centre operation

A converged virtual contact centre solution provides the platform to help NHS Direct Wales improve service, reduce cost and enhance operational flexibility



The BT solution has enabled the cost effective evolution of existing technology to support convergence

## Executive summary

Since its inception, NHS Direct Wales had been using a voice network based on a BT provided and supported Nortel Meridian 1 platform. Expansion of the service had led to the opening of a new Swansea satellite office. BT was asked to provide guidance on a voice and data platform that would integrate into its existing network at optimum cost.

The BT solution serves the new Swansea office with a fully converged voice and data infrastructure. The new LAN is built on the Nortel 5510 Ethernet Routing Switch. This same technology has been used to upgrade legacy LANs at the main Swansea office and NHS Direct Wales's offices at Mamhilad and Bangor. Voice services are provided through enhancement of an existing Meridian Option 61 with Nortel Contact Centre Manager Server at the main Swansea building. A 10Mbps BT LAN Extension Service (LES10) connection carries both IP voice and corporate LAN traffic between the two Swansea offices.

NHS Direct Wales has been able to expand and enhance its services in an evolutionary fashion using this converged solution, which has enabled the organisation to maximise its existing technology investment and minimise disruption to day-to-day operations. The new platform has also enhanced operational flexibility, by offering the introduction of home working. Any future changes and enhancements will be able to be made quickly and inexpensively.

---

“We have been working with BT since the beginning and they are a company we know we can trust. We wanted to leverage the benefit of our existing network investment and asked BT to propose a solution to serve both voice and data needs at optimum cost.”

Paul Newman  
Head of Information and Technology Resource  
NHS Direct Wales

# Case study

## NHS Direct Wales

---

“The BT solution instantly offered good value for money. Looking to the future it provides us with a flexible and scalable platform that will enable us to quickly and inexpensively make changes and enhancements.”

Paul Newman  
Head of Information and Technology Resource  
NHS Direct Wales

### Marketplace

NHS Direct Wales is available to the community 24 hours a day, every day of the year. The service employs around 300 people and provides telephone-based health advice and guidance on a wide range of conditions and treatments. It operates from three separate centres in Swansea, Bangor and Mamhilad. Native use of the Welsh language is an essential aspect of its offer. This requires recruitment from different areas within Wales and encourages partnership with local health and social care communities.

### Business opportunity

Established in the year 2000, NHS Direct Wales had been using a voice network based on a BT provided and supported Nortel Meridian 1 platform since its inception. The existing network had at its core a Meridian Option 61 system with a Nortel Contact Centre Manager Server located at Thanet House, the NHS Direct Wales headquarters building in Swansea.

The voice network had evolved as the NHS Direct Wales service expanded. A Meridian 1 Option 11 system was added to serve its Mamhilad location and latterly a Nortel Remote Gateway 9150 with Voice over IP connectivity was installed to provide a survivable branch office solution for its Bangor location. The remote sites are interconnected with Swansea by dual BT 2Mbps private circuits.

The success and expansion of NHS Direct Wales was however putting pressure on existing accommodation and it was decided to open a satellite office at Conway House in Swansea. Time was of the essence and the new centre would need to house around 40 people; a mixture of call centre agents and office-based staff. NHS Direct Wales approached BT for advice on the necessary technology platform.

Paul Newman, Head of Information and Technology Resource at NHS Direct Wales, says: “We have been working with BT since the beginning and they are a company we know we can trust. We wanted to leverage the benefit of our existing network investment and asked BT to propose a solution to serve both voice and data needs at minimum cost.”

### BT solution

The BT solution serves the Conway House facility with a fully converged voice and data infrastructure. Voice services to the site are provided through upgrade and enhancement of the existing Meridian Option 61 at Thanet House. This was enabled with the addition of IP Line capability and interconnection to the LAN infrastructure through a Signalling Server. The LAN at Thanet House was also upgraded with the provision of three 48-port Nortel 5510 Ethernet Routing Switches to replace legacy LAN equipment.

A 10Mbps LAN Extension Service (LES10) connection links Conway House and Thanet House and is used to carry both IP voice and corporate LAN traffic. Nortel IP Phone 2004s are deployed at Conway House to provide voice services to both office-based staff and call centre agents. These are connected to the in-building LAN infrastructure, comprising another 48-port Nortel 5510 Ethernet Routing Switch.

The solution also provides for a similar upgrade to the legacy LAN environment at the Bangor and Mamhilad locations, again utilising either the 48-port or 24-port Nortel 5510 Ethernet Routing Switch. With the new solution all calls are now routed initially to Thanet House through a single BT 0845 Lo-Call number. Calling line identification is used to route the call to the next available agent at the location nearest to the caller, enabling enhanced customer service through improved local knowledge.

Paul Newman says: “We were initially sceptical about the benefits of IP Telephony but it soon became clear that this was the way for us to go. The initial cost of the IP Telephony implementation was around the same as that for the more conventional solution but the added value in terms of reduced ongoing administration costs was significant. More important, was the added flexibility that the technology conferred upon the organisation.”

With IP Telephony implemented throughout the network, NHS Direct Wales now has far greater operational flexibility. Additional voice extensions can now be provided by programming an IP Phone and sending it through the post. All the intended user then needs to do upon receipt is to plug it into the local LAN infrastructure.

# Case study

## NHS Direct Wales

The technology is also the key enabler for more flexible working. Paul Newman explains: "Recruitment and retention of call centre staff is a constant issue. Not only do our people need to have the necessary clinical knowledge but they also need to be Welsh speakers. IP Telephony has enabled us to consider a flexible home working business model, which will help us attract and retain high quality people."

NHS Direct Wales will be able to connect a home worker through a secure VPN (virtual private network) connection over a standard ADSL broadband line. This will enable connectivity to both the corporate network and provide voice services using a Nortel IP Phone 2004 at the home location.

The NHS Direct Wales solution also includes a five-year BT CustomCare maintenance contract, with service levels tailored to the precise needs of the organisation.

### Results

The new converged solution has enabled NHS Direct Wales to enhance its services in an evolutionary fashion, demonstrating the value of Nortel evergreen technology. It has transitioned from a pure circuit-switched environment, through Voice over IP across the wide area, to IP Telephony to the desk. This has maximised the value of existing technology investment and enabled implementation without disruption to day-to-day operations.

Paul Newman says: "The BT solution instantly offered good value for money. Looking to the future it provides us with a flexible and scalable platform that will enable us to quickly and inexpensively make changes and enhancements."

When the home working capability is established, NHS Direct Wales will be able to recruit specialist staff from a wider potential resource pool, over a greater geographic area. It will also be able to roster staff to work at different times of the day and night to meet operational demands without concern over travelling limitations or personal security.

The virtual call centre capability is proving to be valuable in attracting high quality people, which in turn enables NHS Direct Wales to enhance its services to the public. The proposed home working concept is also proving very popular with staff – enhancing work life balance and improving the perception of NHS Direct Wales as a caring and flexible employer.

There is the potential for even greater benefits in the future. BT provides the NHS in Wales with a corporate network known as DAWN2 (Digital All Wales Network). The new IP-based infrastructure provides the opportunity to utilise the DAWN2 network for voice. Paul Newman says: "DAWN2 connects all of our main locations and we are now planning to extend IP Telephony by routing all of our voice traffic over the DAWN2 network. This will allow us to cease the dedicated private circuits linking our buildings and enable further substantial cost reductions."

NHS Direct Wales is likely to merge with the Welsh Ambulance Service in 2007 and the NHS Direct Wales call centre will potentially form the gateway in to the new integrated service. With the Welsh Ambulance service also operating a BT-provided Nortel technology solution the new architecture prepares the way to make integration that much easier.

---

### Why BT?

- BT is a trusted long term suppliers to the NHS and NHS Direct Wales, and have a thorough understanding of the health sector and specific healthcare issues in Wales
- The BT solution enabled an evolutionary approach – delivering the service enhancements whilst retaining significant value in existing technology investment
- Capability to deliver the solution in the required timescales with a minimum of operational disruption.
- New solution architecture compatible with future service enhancement and integration plans

# Case study

## NHS Direct Wales

### Technology blueprint

The Nortel 5510 Ethernet Routing Switch is available in two varieties offering either 24 or 48 ports for desktop switching using 10/100/1000BASE-T and RJ45 connections. Both models feature Quality of Service capability to allow prioritisation of voice and other mission critical data across the network. The Nortel 5510 Ethernet Routing Switch also incorporates features to improve data flow across the network, including multilink trunking (MLT), an integrated time domain reflectometer (TDR), jumbo frame support for larger file applications and internet group multicast protocol (IGMP) snooping, as well as the latest security protocols to protect the network from unauthorised access.

IP Line provides IP Telephony support to both Meridian 1 and CSE1000 enabling the migration from a traditional PBX architecture to a converged IP-based architecture. The solution runs on a single slot 32-port Media Card interfacing to an associated Signalling Server. The technology packetizes and compresses voice for transmission over an IP network and each Media Card can serve up to 128 IP Phones.

Nortel IP Phone 2004 is a high-fidelity full duplex speakerphone designed for regular phone users that can connect to the network through any available LAN port. Features include a Pixel-based LCD display with adjustable contrast, self-labelling programmable keys, message waiting/visual ring indication, and a Microsoft TAPI-compliant interface.

---

### Main BT products and services

- BT supplied Nortel Meridian 1 Option 61 with IP Line capability
- BT supplied Nortel Contact Centre Manager Server
- BT supplied Nortel 5510 Ethernet Routing Switch
- BT supplied Nortel IP Phone 2004
- BT LAN Extension Services (LES10)
- BT 0845 Lo-Call
- BT CustomCare Long Term Maintenance

### Offices worldwide

The services described in this publication are subject to availability and may be modified from time to time. Services and equipment are provided subject to British Telecommunications plc's respective standard conditions of contract. Nothing in this publication forms any part of any contract.

© British Telecommunications plc 2006.  
Registered office: 81 Newgate Street, London EC1A 7AJ  
Registered in England No: 1800000

Designed by Westhill Communications.  
Produced by Ecoutez Creative Limited

