

# Intelligent connectivity for intelligent healthcare

To deliver the digital ambitions of the NHS and tackle its increasing demand requires intelligent connectivity, the technology that ensures critical applications and information are always available at the point and instant they are needed, says **Keiron Salt**

Without good and reliable connectivity the technology we use will not work. Connectivity is a key foundation in realising the NHS's ambition for digital transformation.

The next generation of intelligent connectivity is vital to empower the NHS professionals and citizens to address the increasing demand on the NHS. Intelligent connectivity enables critical applications to be prioritised, provides network agility and performance for the cloud and flexibility of physical connectivity. It improves organisational efficiency through increased flexibility, agility, security and efficient use of bandwidth. It gives you greater control of your network, making it smarter, faster and safer. Intelligent connectivity underpins highly critical and bandwidth-hungry solutions such as:

- Community-based mobility solutions and preventative care for citizens.
- Specialists collaborating together to review high quality MRI scans and X-rays.
- Video consultation between doctors and patient on care reviews.

## SDN v traditional networks

Intelligent connectivity delivers a software-defined network (SDN).

SDN and network function virtualisation capabilities are now mainstream, enabling greater control, flexibility and visibility across not just the organisation's network but across applications and security. The traditional network is becoming increasingly complex to manage securely and reliably. This is compounded by the ambitions and pace of digital change, the changing profile of applications, use of the cloud, increased bandwidth demands and security threats.

## Responsiveness for critical applications

Health applications are critical in delivering



the best and most effective care. The latest health applications are highly data-intensive, driving demand for high levels of bandwidth with low latency e.g. large medical images.

Video conferencing and collaborating on medical data also drives significant demand on the network, often across multiple physical sites. The critical health applications must be responsive and work for the end users. Intelligent connectivity enables this with usage analytics in order to prioritise the right applications and their use of bandwidth. This means critical applications always take priority ensuring that staff have the information at the critical times.

## Agility to underpin the cloud

In my conversations with NHS chief information officers, many are on the journey to adopt cloud-based solutions, often starting with Microsoft Office 365. They are starting to see the benefits to their organisations of rapid deployment, agility and reduced total cost of ownership.

As the cloud brings agility, the connectivity needs to be agile, too.

Accessing cloud applications via traditional wide-area network architectures can traverse unnecessary hops and introduce additional latency with more complex time-consuming change process. Intelligent connectivity offers the agility to quickly set up connectivity based on

business usage of applications, self-service and intelligently steering traffic based on where the applications are hosted without the unnecessary latency.

Intelligent connectivity offers local internet breakout for easier access to software-as-a-service cloud services such as Office 365 directly, without additional hops to a centralised internet breakout.

The network can be extended into the cloud using private connectivity such as Microsoft ExpressRoute or Amazon Direct Connect for higher security, reliability, and speeds with lower latencies.

## Flexibility to use the right physical connectivity

Intelligent connectivity can be delivered using a combination of internet and multi-protocol label switching (MPLS). This offers the ability to make use of carrier-grade MPLS and internet, consumer grade internet or mobile networks such as 4G and 5G.

This provides greater flexibility and new possibilities of a much broader geographical reach and flexibility to quickly on-board new sites and also access the internet directly. It underpins agility as estates change and enables flexible working in the community. It also offers a cost-saving for appropriate scenarios, where the use of lower cost connectivity such as the internet can be used for additional contingency, testing new

services or replacing dedicated circuits.

## Embedding security

In order to retain the public's trust, patients' sensitive personal data must stay secure and confidential. Cloud adoption, use of the internet and flexible working is challenging the traditional security model.

Visibility across the network is now critical in defending against the continuous security threats. SDN provides a more agile and controlled security with end-to-end encryption across the entire network with all endpoints authenticated via key-exchange.

As the NHS looks to a digital future, intelligent connectivity is fundamental to its digital roadmap. Without it, there will be shaky foundations unable to cope with the increasing complexity and demand.

**To find how intelligent connectivity can meet your challenges, join us at: *Is the public sector network ready for the digital age, the Public Sector SD-WAN webinar on 11 February and the SD-WAN exploration day with BT and IDC on 28 February.* Contact [christina.chan@bt.com](mailto:christina.chan@bt.com) to attend**

**Keiron Salt is chief information officer, health, for BT**



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