

networking

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Networks to be put at heart of Information Economy Strategy

by Ian Grant

Physical and virtual networks underpin the government's vision for an information-based economy. In outlining the Information Economy Strategy (IES) earlier this month, the Department of Business, Innovation and Skills (BIS) said that without the right infrastructure – both physical and virtual – businesses will struggle to develop.

"In order to achieve strong and lasting growth, we need to back our most innovative businesses," said business secretary Vince Cable. "By developing the information economy we will provide the skills, digital services and new technologies to grow the UK economy and create jobs outside of London."

Cable highlighted areas like Bristol, Manchester and Cambridge where there

are clusters of enterprises and organisations which excel in advanced IT.

Developed in partnership with industry, the IES will make it easier for businesses to access public services online, and will also help 1.6m SMBs grow their online presence, enabling them to exploit new technologies. BIS said that 95 per cent of the firms that make up the information economy have fewer than 10 staff.

Noting the government has already earmarked £1.2bn to boost private sector investment in next generation broadband access, BIS added that it will shortly publish further details on its approach to digital connectivity. This may coincide with a "data capability strategy" which is expected in October and aims to expand on the UK's need to keep investing in



Business secretary Vince Cable: "We need to back our most innovative businesses."

high performance computing and data centres.

BIS said it wants the next generation of mobile technology to be developed in the UK, citing the new 5G Innovation Centre at the University of Surrey which has already attracted £50m as an example.

The government has asked Ofcom to look into creating an automated online geo-location database to provide on-demand, short term spectrum licences. BIS says this is for R&D in 5G and other advanced communications systems, but in practice it refers the 'white spaces' or unused frequencies in the TV broadcast bands.

In addition, BIS claimed that while the

UK leads the world in making government data publicly available, the means to exploit it fully are lacking. "The UK now has the opportunity to take a lead in the global efforts to deal with the volume, velocity and variety of data created each day," said the department.

Over the summer, it will consult on making available some information from VAT registrations. In addition, the Charity Commission is to publish information in March next year, while the Royal Mail has agreed to provide the Postcode Address File to independent micro-businesses free for 12 months. BIS also called for more open data in local government.

Metronet in £500k 'Fi-Wi' deal

Metronet (UK), the hybrid internet service provider, is to provide up to 1Gbps internet connectivity to Greater Manchester's City West Housing Trust in a £500,000 fibre-wireless networking deal.

City West is responsible for 14,600 homes in the Salford area of Greater Manchester. The organisation has defined 31 local neighbourhoods since it launched in 2008.

Martin Barber, the trust's assistant director of ICT, said: "Following our move to a state-of-the-art colocation data centre near Media City, we needed a reliable, proactive partner to supply high-quality data links."

Under the deal, Metronet will provide internet connections running at 100Mbps to 1Gbps to City West offices in Eccles, Irlam, Little Hulton and Swinton. Metronet will use

a combination of a high-capacity fibre core network with a high-capacity last-mile wireless tail service for dedicated, resilient internet and WAN connectivity.

It expects the installation to take a "fraction of the time" of traditional fibre. Metronet claimed this means it can deliver ultrafast broadband in five working days.

The firm already provides services to 30 housing associations in north-west England, including Manchester's Trafford Housing Trust and Mosscares Housing. The latest deal follows the recent expansion of its footprint to Chester.

"This partnership with City West means Metronet is steadily expanding its footprint in the public sector of the north-west," said Kate Rennicks, the company's public sector manager.

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UK companies advised to review security arrangements following PRISM revelations

UK firms that send email or process commercially confidential information via US-based servers should review their security arrangements very carefully, according to some IT experts. Their advice follows revelations that the US National Security Agency is collecting all the electronic data it can on non-US citizens under a project codenamed 'PRISM'.

PRISM was notionally set up to track terrorists and serious organised crime. But according to Peter Sommer, former

professor of computer security at the London School of Economics, it is hard to tell to what extent it also looks at company data. "[Company confidential information] is not within the NSA's remit, but we don't know if it is within its ambit," he says.

David Harrington, spokesman for the Communications Management Association, (CMA) which represents UK enterprises that purchase more than £13bn of communications services a year, says the revelations should have come as no

surprise. "All western countries spy on each other to some extent," he says.

In 2000, the European Parliament received reports that the US was using 'Echelon' to spy on communications. The system was said to look for key words in voice calls, emails and data streams, and it's claimed that the US, UK, Canada, Australia and New Zealand were all involved. The report accused the US of using Echelon to steal data about Airbus and passing it to Boeing which used it to block the French

firm's entry to Saudi Arabia.

Harrington points out that search technology has improved since then, and Sommer adds that Autonomy, the British software acquired by HP, "would not be a bad example to quote in this context".

Both suggest that UK companies and organisations should review the risk that exposing their data could raise. They recommend encrypting particularly sensitive information, and to use non-US servers for processing and storing it. ■

Colo deal cuts data centre costs

IT infrastructure and services provider Track Eleven expects to save at least one-third of its data centre costs following a move to Sentrum Colo which will house its hosted Cisco Unified Communications and contact centre platform.

The Sussex-based Cisco partner provides hosted telecoms services to UK SMEs with 100-7,500 phones. The firm says its services mean businesses need only buy handsets which saves capex and office rentals. Customers can access the mission-critical services 24/7 via a WAN connection, making high availability and performance crucial for Track Eleven.

With growing demand, the company was running out of capacity at its data centre. At the same time, it wanted to expand its capabilities and geographic

reach, and partner with multiple carriers. The firm also needed stricter resiliency and disaster recovery contingency plans.

Sentrum Colo was selected as it offered a facility that was close enough for engineers to travel to every fortnight for maintenance, met industry standards for security, and supported multiple carriers for WAN and MPLS connectivity.

The new facility houses part of Track Eleven's UC IT infrastructure, including physical as well as VMware servers.

The colo is said to offer List-X security status, N+N power protection, N+2 redundant high-capacity cooling, round-the-clock access to DC experts, and 4kW to 20kW power options per rack, among other facilities. ■

Six shortlisted to supply comms services for social housing trusts

The government has picked six suppliers for in its framework agreement to provide communications services to social housing for the next four years.

The Procurement for Housing (PfH) deal covers calls, lines, mobile communications data and unified services, and was awarded in three lots.

The first lot, for calls, lines, data and unified communications, went to Social Telecoms, Britannic Technologies, and Udata Infrastructure. Gamma, Daisy and ConvergeOne picked up the mobile communications lot, while ConvergeOne, Britannic and Udata will offer consultancy services. ■

The fixed communications part of the PfH agreement covers traditional calls and lines, IP telephony, voice and data network services, unified communications, data centre services and hardware. The mobile category includes voice and data, broadband and hardware such as smartphones and tablets.

The contract runs from February 2013 to January 2017. The deal is aimed at delivering savings to social landlords and their tenants.

PfH is the only national procurement organisation working with the social housing sector. Savings from centralised buying are ploughed back into frontline services, better homes and improving neighbourhoods. ■

Structured cabling 'future proofs' drama school's new campus

Brand-Rex has supplied the cable infrastructure for Milton Court, the Guildhall School of Music and Drama's new £90m facility in London which is due to open in September.

The school's IT department's aim was to install a high specification structured cabling system that would last in excess of 25 years. It decided to deploy 10Gbps to every outlet using Brand-Rex's 10GPlus Cat 6A system.

"For this environment, a shielded foil twisted pair, low smoke zero halogen cable was the most appropriate option due to the quantity of electrical services in the building that could cause electromagnetic interference," explains Chris Chandler, technical manager at Brand-Rex. "Over 150km of it was used to configure 2,000 10GBASE-T channels. In addition, singlemode (OS2) and multimode (OM4) optical fibre from our FibrePlus range has been used in the campus WAN and internal backbones respectively."

As well as running data, voice and video conferencing applications, Milton Court's IT infrastructure has to be able to handle the many radio and TV broadcasts that will be made from the new facilities as well as supporting the Guildhall's recording studios for sound and video.


It will also facilitate a large digital signage system, wireless networking to accommodate the increasing preference for 'bring your own device' functionality amongst students, and be used to network a building management system that operates access control, CCTV, and heating and ventilation. ■



The Guildhall School of Music and Drama's £90m Milton Court facility features 150km of Brand-Rex cabling and will open in September.

This latest win continues to affirm Brand-Rex as the UK's market leader for the volume of structured cabling systems sold. According to independent market research published in April by specialist building consultants BSRIA, the firm has won 15.6 per cent of the UK market by volume with 1.21m outlets sold in 2012 compared to the market total of 7.78m.

Last year, Brand-Rex secured several high profile contracts which included: Manchester City FC's new training ground; MTV; Viacom; Odeon Cinemas; the Welsh Assembly; the New South Glasgow Hospital (see Dec News); and many of the venues for the London Olympics. ■



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CityFibre said that York is set to become Europe's most digitally connected city by 2015.

CityFibre and Level 3 tie-up for metro fibre

York will be the first city to benefit from a backhaul deal between metro fibre network operator CityFibre and global carrier Level 3 Communications.

CityFibre aims to deploy fibre in the UK's secondary cities and towns. It will link its infrastructure to Level 3's global IP network, bringing dedicated symmetrical gigabit speed low latency internet services to customers. The two firms are currently choosing the next cities to connect.

CityFibre is now set to launch its new internet leased lines service. It claims this will enable businesses to greatly increase their productivity and competitiveness by exploiting smarter and more efficient working methods, such as cloud computing, teleconferencing, real-time communications and VoIP.

The new service will be launched first in York where CityFibre says it has built the

UK's largest metro fibre network. Earlier this year, it said that York was on target to become Europe's "most digitally connected city" as it announced further services for the local council which is merging its CCTV networks onto the local fibre core.

"York has one of the most resilient economies in the north" says CityFibre CEO Greg Mesch. "It's home to world-class science, technology and creative businesses, and the tourist industry attracts over seven million visitors a year."

Mesch says his firm has almost 30,000km of fibre in the ground, connecting more than 350 sites and data centres across the UK. He adds that CityFibre manages more than 100 private fibre projects and seven separate metropolitan fibre rings under long-term contracts with local authorities, police forces, healthcare organisations and universities. ■

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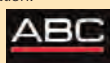


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THE WORLD ACCORDING TO...

Jeff Orr, founder and chief executive, Stack Data Solutions

Reaping the rewards of BYOD from the classroom to the corporation

Government cuts to funding for schools over the past few years have made it increasingly difficult to raise the standards of IT teaching. As a result, many schools in the UK are looking into the possible benefits of introducing bring your own device (BYOD) policies.

Allowing students to bring their own internet-connected devices into the classroom frees up a lot of expenditure in educational costs and provides teachers with a great educational resource. Through tablets, teachers and pupils can utilise everything from e-textbooks to educational apps. They also promote greater participation in the classroom. When new technologies are incorporated into everyday learning, students quickly become more interested in the material and are therefore more likely to succeed.

However, as BYOD has grown in popularity, it has also brought some challenges. One of the biggest concerns with allowing pupils to bring their own devices into the classroom is the lack of control teachers have when it comes to inappropriate text, images or videos being accessed. Furthermore, although certain sites and applications can be blocked, tech-savvy students are likely to find ways around these restrictions.

There's also the issue of securing any organisational data from deliberate attempts to compromise it, as well as the little known requirement to protect

the data on the user's personal device. All this is important in any organisation but particularly in schools, where hundreds of students may be accessing data wirelessly. Social media must be controlled to allow only suitable material and disallow other content. Safe searching on search engines needs to be imposed and searches logged at a user-level. One of the best methods to do this is through the use of virtual desktop technology which allow even large numbers of people in a wireless environment to work effectively and safely, with both corporate and personal data fully protected.

When it comes to implementation, it is important that only authorised devices are allowed onto the school network. A robust and efficient infrastructure is another must if the increase in the number of devices and traffic is to be supported. Schools may also need to consider increasing their internet bandwidth as more devices are accessing the web at the same time.

While this may be seen as just another 'new problem' for some organisations, it is one which will become increasingly relevant to all, as smart devices become more prevalent and sophisticated. The organisations which are well prepared and have the right systems in place will reap the rewards of BYOD – regardless of sector, size or location.

Vodafone in 50 per cent boost to UK network investment

Vodafone is to boost investment in its UK networks by half to £900m this year as it converges its fixed and mobile infrastructure. The move follows the operator's £1bn acquisition of Cable & Wireless Worldwide last year.

In a statement, Vodafone said it plans to provide integrated services to business customers and prepare for the launch of ultra-fast 4G services by the late summer.

"Vodafone is creating a seamlessly integrated fixed and mobile network that will support businesses and public sector

customers as they look to create innovative services, simplify their operations, increase productivity and reap the benefits of better ways of working – allowing their people to work from any location," it said.

Vodafone spent £802m on 4G spectrum in the Ofcom auction earlier this year. It has promised to deliver indoor coverage to 98 per cent of the UK population by 2015.

The firm did not respond to requests for information on how this investment would affect Cornerstone, its joint venture with O2 to share about 18,500 mobile masts. ■



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UC to help council save £500,000

Wyre Forest District Council will use a UC and disaster recovery system from ShoreTel as part of a consolidation project. The council serves an area of about 75 square miles in North Worcestershire and employs around 350 staff. ShoreTel's UC solution will consolidate communications from four buildings into one as part of a move that will contribute to an estimated year-on-year saving of £500,000. The firm says it has also provided a better platform for shared services and hot-desking to deliver further cost reductions for the future. It adds that its UC and disaster recovery solutions are able to provide 'pop-up contact centres' for sudden peaks in demand and help alleviate the worry of disruptions caused by unforeseen situations such as floods. ■

Ark completes huge modular data centre

Data centre operator Ark has finished building one of the UK's largest modular data centres on its secure estate at Spring Park, Wiltshire, with 93,000 sq m of capacity. Phase 1 opened just over a year ago with TalkTalk Business as anchor tenant. Ark sales director Stephen Hall says phases 2 and 3 were delivered concurrently in around 18 weeks. Each consists of two data rooms with their own power and infrastructure. They support around 750kW of IT load over seven separate aisles of 109kW that can operate at a capped annualised PUE of 1.25. Hall claims this could save users £1.1m a year per megawatt of capacity and up to 6,000 tonnes of carbon. ■

Aberdeen expansion pays off for Adept4

IT services company Adept4 says it has secured two significant contracts in Aberdeen after launching a local office in the port city earlier this year. Since April, the Cheshire-based firm says it has won a three-year contract to provide IT solutions and managed services to HR company Hunter Adams which has offices in Aberdeen and Edinburgh. Adept4 has also signed a one-year contract to provide managed IT support and services to specialist oil and gas sector accountancy firm FW Accounting. Adept4's expansion into Aberdeen followed its take-over of locally-based K10 Solutions in March. It says the move has allowed it to tap into the buoyant North Sea oil and gas sector and develop its presence in the region. ■

Wessex Water secures mobile file sharing and video with Accellion

Wessex Water, a regional water and sewage treatment business covering 10,000 square kilometres, will use Accellion mobile file sharing software to secure its communications, including streamlining a critical remote video inspection application.

Wessex Water needed to create a secure environment for staff to access and share documents from mobile devices. It has been running Accellion software since December 2012, and this has led the utility to expand its use to other parts of the operation. The new applications include the secure electronic delivery of content to and from regulators and partners.

Accellion is said to allow different groups to collaborate on national and international projects by instantly creating secure workspaces to share content, synchronise mobile devices and manage version control. Wessex Water has also used the software's API to build custom scripts for specific line-of-business workflows within its SharePoint enterprise content management system.

It is using the platform to manage video captured from remote site surveys carried out by third-party contractors. Up to five surveys are conducted per week, and each one generates up to 15Gb of video content for quality assessment and analysis of

engineering work. Previously, the company used DVDs, which often led to service delays. Now third-party surveyors can transfer video into the content management system to help the firm quickly meet compliance obligations while saving hundreds of hours per week.

Wessex Water enterprise architect John Willis says Accellion has all the security features needed, including tight centralised control and a full audit trail. "Accellion has many of the benefits of a cloud service while allowing us to retain our data on-premise to meet our security policies and compliance requirements," he says. ■

Old school meets latest tech

Norwich School, which has been run independently since 1089, is using 21st century Wi-Fi technology to meet the connectivity needs of its 1,000 pupils.

When it wanted to expand wireless network coverage to all 18 buildings on its campus, the school found it would have been too expensive to upgrade its existing controller-based Wi-Fi system. As a result, it bought an Aerohive system from local independent WLAN supplier AIT.

The new platform uses cooperative control access points (APs) that need no network controllers or overlay networks. This provides the scalability Norwich needed, without the cost of more controllers and management overhead. AIT installed the APs in all classrooms and administrative



The new Wi-Fi network uses cooperative control APs and covers 18 buildings across the school.

areas in less than two weeks, which saw the team overcome inherent challenges such as 10-foot thick walls in the medieval chapel.

Students are able to bring in their own devices to use in class and access learning resources, while staff increasingly use the network to fulfil key administrative duties. "Very quickly, we started to notice

substantial productivity gains, receiving far fewer calls from staff and pupils who were having trouble connecting to the network," says Steve Banyard, Norwich School's network manager. "Ensuring we have the right technology to apply the best teaching methods is critical to our pupils' education and the school's continued success." ■

Wireless to connect 14 Worcestershire parishes

Worcestershire County Council (WCC) is using fixed wireless broadband to close a 'digital divide' for 14 parishes at risk of being left out of the government's £1.8bn next generation broadband access scheme.

Wireless ISP Airband Community Internet is using point-to-point/multipoint technology from Cambium Networks (formerly part of Motorola Solutions) to connect around 2,000 homes and 200 businesses at up to 24Mbps.

The £700,000 cost, which will be met via grants from the sustainable transport and green infrastructure fund, has been made available for communities that may not benefit from the nationwide superfast broadband deployment.

By May, Airband had connected 120 residents and businesses in North West Malvern, Little Witley and Redditch. The council says customers are getting speeds as high as 40Mbps and Little Witley Village

Hall is running at 50Mbps. The final parts of the network are now being put in place, and at least 300 further connections are scheduled to go live in another 11 rural parishes before the end of June.

WCC cabinet member Simon Geraghty says: "The council made this funding available as we knew the difference this would make to local people and businesses. Making sure the county is open for business is an absolute priority." ■



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² Based on IDC white paper "The Economics of Virtualization: Moving Toward an Application-Based Cost Model" Michelle Bailey, November 2009, <http://www.vmware.com/files/pdf/Virtualization-application-based-cost-model-WP-EN.pdf>

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Special effects firms get special network

Specialist new media data centre operator DataRoom has signed a 10-year dark fibre contract with Geo Networks to provide high-speed, scalable connectivity to its Woolwich Arsenal home.

DataRoom is a collaboration between media storage facility Stockroom London and digital media service provider ChilliBean. It provides a central access point for the UK's cinema and TV post-production and special effects companies to render content. It also offers traditional data centre services such as disaster recovery, server virtualisation and colocation.

DataRoom has allocated an initial 10,000 square feet for visual effects and post-production companies to site and build their render farms and storage infrastructures. StockRoom London will continue to provide ultra-secure space for customers to archive and store film, tapes, data drives, documents and related items.

"SLAs and tariffs are designed to meet their specific needs, and we have archive storage facilities and space for other technical operations alongside," says DataRoom director Peter Godden.

He adds that having dark fibre means DataRoom can light additional bandwidth as and when its data centre customer base grows. "A traditional managed service, on a fibre-by-fibre cost basis, would have restricted our ability to offer our customers a cost-effective solution and space outside of the city. Now we can be a truly



Geo extended its fibre network by three kilometres through London's sewers to reach DataRoom's data centre at Woolwich Arsenal.

competitive alternative," claims Godden.

Geo had to use London's sewers to extend its network by three kilometres from Greenwich to the former British Library book repository in Woolwich's Royal Arsenal which houses the firms. It says running fibre in the sewers provides secure alternate routing to other networks, as well as a direct point-to-point connection to the TeleHouse West data centre in Docklands.

Geo's media sales director Will Pitt says DataRoom's dark fibre will allow it to achieve multi-terabit scalability. "This is perfect for the demands being placed on the companies involved in the sector who need to do what they do faster, with a focus on optimal quality and reliability." ■

UK's "biggest" cloud unveiled

UKFast claims its £12m *eCloud* will be the UK's first elastic cloud infrastructure to rival US giants Amazon and Rackspace.

The data centre operator says its new service is built upon the latest Cisco UCS blade technology, and offers petabytes of high availability storage from "best-of-breed" vendors such as 3Par and SGI.

Because it offers a pay-per-minute or contract model, UKFast reckons *eCloud* brings elastic cloud to the UK for the first time, and makes an enterprise-level cloud solution available to every level of business without any capital investment.

"With *eCloud* we wanted to create something really special," says UKFast CEO Lawrence Jones. "By combining the very best hardware with the highest level of customer service on an extraordinarily fast network, spread across multiple sites, it

finally gives British businesses what they need and has brought a level of technology to the UK that has never been seen before."

He goes on to claim that UKFast has been "leading the field" with dedicated servers for more than a decade.

"We grew from nowhere by automating everything and making what once took 10 days possible in two hours. Now the market has changed and we didn't want to just create a run-of-the-mill, self-serve product like other cloud offerings."

The launch of *eCloud* comes as the firm continues its mission to boost connectivity in north west England. Following the acquisition of No. 1 Archway at the start of the year, UKFast has begun development on its fifth data centre in Manchester. The site will also house the firm's new headquarters. ■

SunGard to transform IT estate for Serco Group in the UK

SunGard Availability Services is now responsible for the Serco Group's IT infrastructure in the UK.

As part of a five-year deal, it will also carry out a technology transformation for the group. It will offer the firm (and where appropriate, its customers) the opportunity to move their current estate to a virtualised, managed hosted model, utilising a range of cloud-based services and dedicated platforms.

Serco provides specialist services to national and local governments as well as major companies worldwide. SunGard says that the IT transformation will allow it to focus on its core business.

During the first phase, it will implement a dedicated private and managed public cloud based on its *Enterprise Cloud* and *Managed Hosting* services. In addition, SunGard will provide Serco access to its

recovery services portfolio.

Under the terms of the agreement which will be measured by strict SLAs, SunGard also plans to expand its own technology capabilities. It will create a new, fully resilient technology centre in Birmingham aimed at providing IT resources, skills and experience to ensure optimum availability, reliability, security and cost-efficiency. SunGard already has four other technology centres in the UK.

Keith Tilley, the company's UK and Ireland MD and EVP for Europe, says that giving customers a tailored approach is key to gaining trust as a technology partner.

"As the partner of choice, we understand the flexibility required and the approach organisations like Serco need to take in order to ensure they are entrusting their IT assets to someone they know will invest in the partnership." ■

Science Museum celebrates ICT with new £15.6m gallery

The Science Museum in London is developing a new gallery dedicated to ICT. Sponsored by ARM, BT, Google, and others, *Information Age* will be spread across 2,500 square metres, becoming the museum's largest gallery when it opens in September 2014.

Some of the rare exhibits on display will include the instruments that detected the first transatlantic telegraph messages in 1858, the BBC's first radio transmitter 2LO, and a BESM-6, the only Russian super-computer in a Western museum. One of the most spectacular objects will be the

Rugby Radio Station tuning coil. Donated by BT, this was once part of the most powerful radio transmitters in the world.

There will be six zones or 'Networks' focusing on the transformative effect the telegraph, the telephone, broadcasting, satellites, mobile telephony and the World Wide Web have had on society.

Describing the gallery as a "landmark" for the museum, director Ian Blatchford said: "*Information Age* will bring these innovations to life through the eyes of those who invented, operated and were affected by each new wave of technology." ■

How the tuning coil from the world's most powerful radio may look in the Science Museum's *Information Age* gallery, due to open next year.



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Grilling Cloud Providers

For businesses who take the strategic decision to move some or all of their entire infrastructure to a third party cloud provider, finding the perfect partner can be a complex process. The myriad of players, solution types and SLA scopes can lead to much confusion and make it difficult to compare like for like.

Here Pulsant offers seven key questions that will help 'grill' your potential providers more effectively and ensure their cloud is the best fit for your business.

Pulsant's (7) Questions for Wiser Cloud Provisioning

- 1 "What is the real cost of cloud, in terms of support, provisioning, and risk?"
- 2 "What resources am I guaranteed?"
- 3 "Where is my cloud hosted and my data stored? And where could it be replicated to?"
- 4 "What network separation and security protects my services and data from the cloud provider's other customers?"
- 5 "What resiliency features does the cloud platform provide and how do they work – in the event of a failure, will I suffer from data loss or corruption and what is the recovery time?"
- 6 "How should I best design my application to maximise availability?"
- 7 "Do you provide 24 hour direct access to knowledgeable technical support staff and what additional technical services do you provide to ensure my continued effective use of your service?"

While some still see cloud infrastructure as a utility-based resource, many more now appreciate its role as a strategic business tool which can be fine-tuned to address specific operational agendas.

Consequently, CIOs seeking to enhance their business contribution, are now taking a more proactive stance in building successful cloud outcomes by shaping storage provision in line with their commercial priorities. Those who do can create a more effective roadmap for growth, risk reduction and competitive success.

Pulsant wants to make it clear that just as all clouds are not the same – public, private, managed or enterprise – not all cloud providers or their SLAs are the same. While cloud technology helps unlock cost, scale, efficiency and performance returns, it is the service and care that is wrapped around the cloud provisioning that ensures it really delivers.

To make sure that their enterprise cloud provides a 'perfect fit', Pulsant recommends the following:

- 1 Before specifying your cloud type or provider, understand clearly what you want cloud to achieve for your business.
- 2 Seek partners that are able to secure your cloud and offer long term viability and a good attitude.
- 3 Don't be afraid to ask questions that are important to your business.

It's about taking control of cloud and not letting it drive you. With so much choice on offer, there is no excuse for settling for an unreliable and inflexible cloud that simply doesn't live up to your operational or performance goals.

By refusing to compromise on basics and insisting that cloud providers accommodate specific enterprise requirements, Pulsant believes that all businesses can get the scale, security and support they need to reap the broadest benefits and achieve the best cloud experience possible.

This is an extract from a Pulsant white paper called 'Taking Control of Your Cloud' – to secure a copy of the complete white paper email Paul Hughes, Head of Marketing, at paul.hughes@pulsant.com
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Take the grand tour of networks

From bookings to keeping in touch with family and friends back home, networks have an increasingly important part to play in the travel, tourism and leisure sector.

Will Sochi be the first BYOD Olympic Games?

The thousands of daily visitors and broadcasters expected to attend the 2014 Winter Olympics in the Black Sea resort of Sochi, Russia will be relying on an Avaya unified communications system to send images, data and high resolution 3D television pictures to an expected global audience of three billion people.

As the official supplier of network equipment, Avaya says it will provide a "full" communications experience to athletes, dignitaries, sponsors and fans worldwide. It will use a "fabric-enabled" network to deliver access to content from any device, anywhere, any time.

The Olympics pose unique problems for network integrators. Their infrastructure must be secure, robust, resilient, and cope with pervasive video, massive scale and huge peaks in traffic volumes.

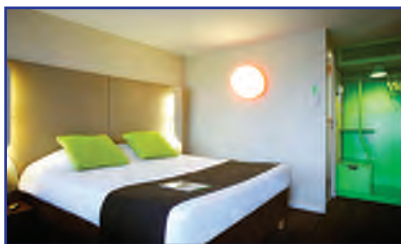
At the Sochi network's core is the Avaya Virtual Services Platform 9000 which is claimed to be an advanced hardware system that delivers high levels of performance, scalability and reliability. Avaya says it offers greater network simplicity combined with a virtualised network environment and the ability to create different network zones easily.

The network will also incorporate Avaya's 8100 Series WLAN unified wired/wireless architecture, supported by 8120 access points, to enhance network asset use and operational efficiency. Ethernet access will come from router switches such as the 4000 which features PoE, the 5800 ToR for data centres, and the 5000 for distribution switching.

Sochi is expected to set a new peak in wireless accesses due to the number of mobile devices visitors are likely to bring with them. To cope with this extraordinary BYOD environment, Avaya will deploy its Vena Fabric Connect solution. This is based on the IEEE 802.1AQ shortest path bridging standard and will allow the company to simplify the infrastructure, in particular eliminating the need to configure multiple network points, and provide an "intelligent edge" to the network.

Because events are split into clusters, along with live sites being built across Russia, there was a high demand for a BYOD system that would provide secure access for event organisers as well as being easy to use for spectators, teams and athletes. Avaya will use at least three identity engines to ensure only authenticated people have access to network facilities.

As Sochi (picture below) is largely built on greenfield, much of the technology will be installed from scratch rather than overlaid on existing infrastructure.



Network makes for 'appy holidays at Louvre Hotels

Louvre Hotels, said to be the second-largest hotel group in Europe, is using its managed network service from Colt to upgrade the guest experience across the board with new mobile applications.

The group operates more than 1,100 hotels in 42 countries ranging from luxury to budget. Its brands include Première Classe, Campanile, Kyriad, Kyriad Prestige, Tulip Inn, Golden Tulip and Royal Tulip. Because of a slow economy, competition is fierce and the company aims to use technology to ensure efficient, always-on access to business-critical systems. It also wants to provide guests with innovative booking and check-in services and reliable Wi-Fi, while reducing network and IT costs.

Network-enabled technology now allows guests to use mobile phones to make reservations, check-in, unlock their rooms (via NFC), access complimentary Wi-Fi services, pay bills, and to check-out.

UK-based Colt has worked with Louvre for over 10 years. It currently provides a fully managed Ethernet network that gives the group's French hotels access to its centralised property management system (PMS) which is hosted in the group's data centre. The PMS handles all aspects of each hotel's operations from the moment a booking is made via any channel, through to when a guest pays their bill and checks out. All information is updated in real-time. Previously, each hotel ran its own PMS, with IT specialists on site to support it.

Thierry Guiraudios, SVP of IT for the Louvre Hotels group, says its centralised PMS gives the hotelier consistent operations and management reporting across all hotels, allowing staff to be 100 per cent customer-focused. A backup network forms part of the Colt solution to ensure permanent access to the PMS.

The company decided to centralise the PMS more than 10 years ago to reduce the cost of IT and pave the way for new services. At the time, it was a ground-breaking move in the European hotel industry. Success depended entirely on the quality of the network connectivity.

Colt also provides Louvre with outbound and inbound voice services. The costs of national and international outbound calls, including those made by guests using the phones in their rooms, are over 30 per cent lower compared with the group's previous telephony supplier.

Guiraudios says Louvre originally chose Colt because of its dynamic approach, extensive portfolio of up-to-date solutions, and competitive pricing.

Adventure seekers drive call centre upgrade

Adventure holidays have bucked the recessionary trend in the hospitality sector, so growing demand forced Neilson Active Holidays, part of the Thomas Cook group, to upgrade its call centre to cope.

Brighton-based Neilson offers holidays covering skiing and snowboarding, beach club, yachting, and lakes and mountains.

A long-time customer of Siemens Enterprise Communications, the tour operator turned to the vendor's OpenScape platform to upgrade its existing contact centre functionality in order to handle increased call volumes.

Siemens says it commissioned the new system in just six weeks, way ahead of the typical four-month installation period. Since then, Neilson staff report raised satisfaction and an 11 per cent reduction in the number of calls being abandoned. Productivity has increased dramatically, according to IT and office support manager Graham White. "Since the successful implementation of OpenScape contact centre, productivity has significantly improved in all areas. All our agents now have constant access to key

performance metrics via a visual dashboard that is driving best practice of achieving 100 per cent asset utilisation.

"Most importantly, our customers benefit. Both queuing times and lost calls have reduced dramatically, so when our clients contact Neilson, they know they will get the right information in a time that reflects our busy lives."

The visual dashboard system ensures that more customers are booked on more holidays, and this has also enabled Neilson to adopt more flexible working patterns, benefiting the overall organisation.

Siemens says the system encourages and enables first contact resolution of incoming calls, no matter what the point of the call is. It adds that this not only improves the customer experience of calling Neilson, but also optimises the firm's use of contact centre resources.



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For enterprises, SDN is about fully migrating to virtualised environments, ultra-low latency networking, and coping with fickle demand brought on by BYOD.



Software defined networking is going to influence all your network purchase and operational decisions over the next five years. It will also affect equipment sales worth more than \$35bn a year. With money like that at stake, IAN GRANT pays attention.

Stu Bailey, CTO of network automation vendor Infoblox, has a useful concept for pigeon-holing software defined networking (SDN) and OpenFlow, the protocol that enables firms to separate content from control data in communications traffic.

"There's something fundamentally different in OpenFlow-style networking. From a business perspective it's about the emergence of large independent pure software networking companies, whose products run on generic or commodity 'white box' servers."

Imagine a graph, says Bailey. "Along the X axis (value) the scale runs from hardware to software, and along the Y axis (change), it runs from networking automation to SDN. All communications vendors and service providers are somewhere on that graph."

The ones leading the move to OpenFlow and SDN, the pure-play software firms like BigSwitch, Nicira and Vyatta, are in the top right-hand corner. The data networking and network appliance companies, like Cisco, Brocade and Juniper, are somewhere around the middle. And the traditional telco vendors, such as Ericsson, Huawei and Nokia Siemens Networks, are down in the bottom left-hand corner. Some firms, including Infoblox, have two positions. One because they make and sell network appliances, and the other because they have virtualised the appliance into software that runs on a 'white box' server. This is typically a commodity x86 machine more usually deployed as a computer server in a virtualised environment in a data centre.

All that is perhaps a generalisation or at least a simplification. However, SDN and OpenFlow are the tools by which users hope to make it cheaper and easier to buy and run their networks, whether they are enterprises, cloud service providers, or carrier operators.

It is also real. Google, a prime mover in setting up the Open Networking Foundation (ONF), runs its global WAN on SDN principles. Japanese telco NTT launched its SDN-based *Enterprise Cloud* service in June 2012 via data centres in Japan and Hong Kong, and is extending it worldwide.

Deutsche Telekom, another ONF founder, has chosen Tail-f Systems to deliver the key software components of its software-defined network in its *TeraStream* project.

More recently, Portugal Telecom and NEC said they will evaluate network virtualisation based on SDN technology for data centres and carrier networks. They will test NEC's *PF* series programmable flow switch and controller to see how it can overcome the economic and operational challenges within traditional networks, and see where it fits best in Portugal Telecom's business.

The network world has reached a turning point

Cliff Grossner, Alcatel-Lucent's strategic marketing expert, thinks the network world is at a turning point. "Software people and users are driving the agenda, not hardware people," he says. "We have been at such turning points in the past, but the incumbent market leaders have managed to re-establish their leadership. Take just two examples – the internet and mobile phones. Microsoft missed the internet; Netscape came along and almost took that market, but Microsoft was able to recover. It missed mobiles, but may get it back. The question now is whether the incumbent network equipment vendors are going to be able to recover."

Everyone in the upstream networking supply chain is staking out a position. Speaking during Interop in May, Dan Pitt, the executive director of the ONF which curates the Openflow standard, said that "there are as many definitions of SDN as there are enterprises that use it". This is partly due to deliberate misinformation by the incumbents who have most to lose, and it also stems from over-hyped promises that are years away from delivery.

Network appliance vendor Brocade reckons its new 'data centre on demand' product is a step on the road to SDN. "If you try to buy or even define SDN, it's actually very hard to do," says Marcus Jewell, the firm's head of Western Europe. "The clearest definition we have is to abstract the network from the hardware in

Why you should care about SDN (but not quite yet)

the same way that has happened with the virtualisation of computing and storage."

In other words, the SDN is based on software – not hardware. But software still needs hardware to run on.

HP Networking released another batch of Openflow switches and routers at Interop, bringing the total to 29. Exploiting them fully will have to wait until later in the year when HP releases its SDN controller.

Pitt compares today's networks with old-style mainframes – proprietary, closely integrated hardware and software, inflexible, hard to change, and expensive. SDN aims to do to networking what the IBM PC did for computing, and to use OpenFlow to lever open this oyster. It separates the hardware switching from the control software so that switches run at line speeds. The switches are controlled by the network operating system and messages between the two are carried by the OpenFlow protocol. The operating system has APIs that hook into the applications above them so they can effectively order network resources on demand using a pre-determined control policy.

This allows managers to 'program' their network resources according to the needs of their applications, or indeed to set up the applications so that they negotiate access to network resources according to their needs.

The waiting game

Not all companies are rushing to launch SDN kit. Dan Joe Barry, VP of marketing for Napatech which makes real-time network monitoring appliances for 135 network equipment vendors, is waiting for the hype to recede.

"There are at least three different major versions of SDN out there. The Ciscos and Junipers of the world are trying to open up their systems to SDN as a defensive posture; some are looking for alternatives to Cisco and Juniper based on cheaper switching and routing from commodity boxes with centralised SDN controllers. Then there's the VMware-centric approach with Nicira, and with those guys it's more based on function virtualisation and how

VMware can be central to that."

Christine Gebauer, UK marketing director at German-based Paessler which makes the popular PRTG network monitor, is also patient. "We do what our customers want when they want it," she says. So far there's been no call for SDN, but she's paying attention.

Use cases vary. For enterprises, it is about fully migrating to virtualised environments, ultra-low latency networking, coping with fickle demand brought on by BYOD, and distributed networking. For cloud service providers, it should help centralise traffic engineering, manage disaster recovery better and ease the burden of having multiple tenants with changing data processing needs. And carrier network operators



"The chief difference between legacy systems and SDN is that with SDN most of the boxes in the middle of the network don't have the intelligence to run routing protocols, and don't need to."

Dan Pitt,
Executive director,
Open Networking Foundation

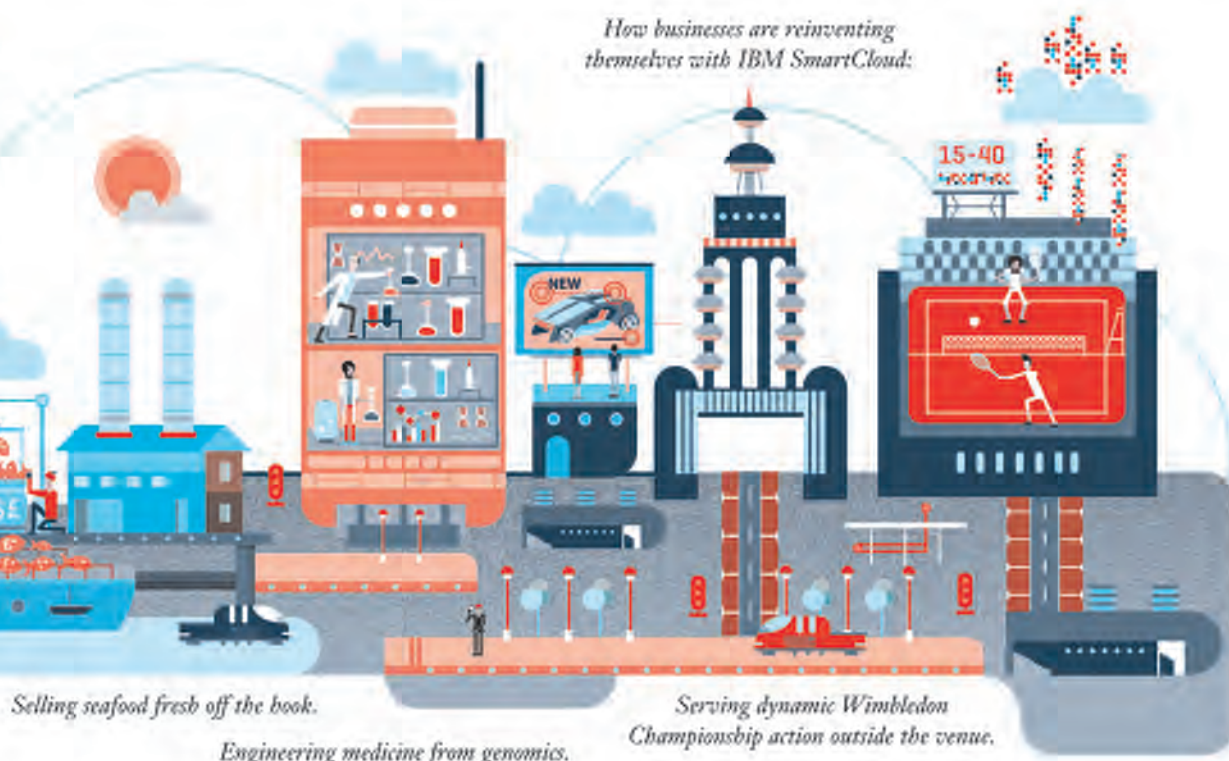
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Marc Holt, CIO, NC State

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should find it easier to provide bandwidth and services on demand, distribute content and manage traffic more efficiently.

BYOD enabled by mobile communications is clearly sharpening vendor and carrier focus on SDN in 4G/LTE mobile networks. It's also easier, since these are based on IP and Ethernet, and TDM is seldom purchased these days. Dictated by performance needs, data management is moving closer to the network edge. This distributed architecture is really a 'data centre without walls'.

The major infrastructure vendors such as Ericsson, Huawei, NSN, *et al*, are stepping up by migrating and upgrading function performance in their network edge packet gateway controllers (PGWs). This has great implications for makers of appliances which offer deep packet inspection (DPI), optimisation and policy.

With a distributed, virtualised core network, blade-oriented solutions will provide a highly integrated and flexible solution where policy, DPI and optimisation are placed in local or regional data centres.

"The chief difference between legacy systems and SDN is that with SDN most of the boxes in the middle of the network don't have the intelligence to run routing protocols, and don't need to," says Pitt. "They are simply given them by the network operating system, and are called 'flow tables'.

"Moreover, whatever you want to incorporate into routing – whether it's policy, or fine-grained security, traffic engineering, load balancing, energy savings, etc – you can simply program it in using ordinary programs created by ordinary programmers. You don't have to

wait for your [equipment] vendor to do it a year or two from now. In other words, you can program the network yourself."

This means routing and switching could be more responsive, and extra resources such as load balancers and firewalls, could be instantiated on a virtual machine and set up automatically in response to demand in seconds. Above all, SDN promises freedom from lock-in, flexibility in operations, and lower capex and opex costs.

Erik Ekudden, Ericsson's head of technology strategy, spoke for the telco's old guard when he said late last year: "We're not only talking about how SDN affects a router, which some of our competitors do, but how it impacts the whole network and how to make it optimal for the operators."

Huawei says its SDN strategy, *SoftCOM*, is aimed firstly at mobile operators because of LTE. Outlining his

firm's SDN strategy in February, CTO of the carrier network business group Sanqui Li said it would take several years to cover all the elements it needs to. But in the meantime, OpenFlow products from Huawei and others have started shipping, either as physical or virtual devices. These include controllers, Ethernet switches and routers, network monitors, among others. So far, most are destined for data centres rather than telephone exchanges.

Speed switches

The switches/routers now available mostly offer wire speed switching at anything from 1Gbps to 40Gbps. With the ONF agreeing in March to extend OpenFlow to optical transport, that top speed should rise quickly.

Silicon merchants that support OpenFlow include *EZChip*, whose *NP-5* and *NP-4* programmable single chip processors already offer line speeds of 240Gbps and 100Gbps (50Mbps full duplex) respectively.

Intel is offering *Seacliff Trail*, a programmable 10GbE switch that will allow network managers to migrate towards OpenFlow and SDN. Last September, ADI Engineering released a 640Gbps top of rack Ethernet switch based on *Seacliff Trail* together with a software development kit aimed at OEMs. It provides 48 SFP+ 10Gb Ethernet ports and four QSFP 40Gb Ethernet ports, controlled by the low-latency *FM6000* ASIC that Intel acquired with Fulcrum Microsystems in 2011.

Virtual switch makers include Big Switch, Cisco, IBM and VMware. Most support KVM and the popular hypervisors, in particular *Citrix XenServer*, *VMware ESX/ESXi*, and *Microsoft Hyper-V*.

A key aspect of an SDN environment is the ability to 'orchestrate' the components. This is where support for OpenStack and CloudStack platforms will be helpful, using OpenFlow as the go-between. So too is the ability to know what is on the network, what its relationships are with other network elements, what its privileges are, and how it's performing. This makes discovery and monitoring applications an essential part of an SDN installation.

The latest to enter the market is Alcatel-Lucent subsidiary Nuage Networks, which claims it represents "second generation SDN" because it scales across multiple



"There are at least three different major versions of SDN out there. The Ciscos and Junipers of the world are trying to open up their systems to SDN as a defensive posture."

Dan Joe Barry,
Marketing VP,
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data centres. The firm is working with Citrix, F5, HP and Palo Alto Networks to create what Alcatel-Lucent's new CEO Michel Combes claims is "a complete network services solution for the multi-tenanted cloud data centre". The platform separates and abstracts the definition and creation of data centre network services using three key virtualised elements: the services controller (VSC), the services

directory (VSD), and the routing and switching engine (VRS).

Meanwhile telecom operators, which see great advantages in SDN for its internal Ethernet-based operations, have set up the complementary network functions virtualisation (NFV) standards initiative under ETSI to create an open ecosystem specifically for carrier network services. But that's another story. ■

Colt takes the plunge into software defined networking

Pan-European network operator Colt has now joined the Open Networking Foundation (ONF). Nicolas Fischbach, director of network and platform strategy and architecture, explains what the company hopes to get from SDN.

"Colt was the first non-founding service provider in the EU to join the ONF. Firstly, it helped us to interact directly with the individuals driving OpenFlow/SDN, both within the vendor community as well as alongside our peers. This helped us progress our own research faster, fast-track our learning curve and influence vendors from within."

"Second is education. We spent a lot of time working not only on the SDN 'technology' and the concept, but also what it means for us and what can it do for our customers. Talking to vendors we quickly realised there was a massive gap when it came to defining proper use cases. This includes their business benefits as well as their implications, such as moving onto a service provider operating model."

Fischbach believes that the difference between SDN and network function virtualisation (NFV) is based on how you perceive and interpret it. He says the term is often described as today's IMS or NGN although it means something slightly different to every person you ask.

"In addition, the never-ending influx of marketing messages has made it difficult to say 'this is SDN'. NFV is, so far, not as diluted, but I'm sure this will change when vendor marketing messages get involved. In my view, NFV is at least complementary to SDN or a building block for SDN. A number of vendors also already have NFV-like components available whereas SDN providers, with a few exceptions, are still at the prototype stage."

"It's important to have direct discussions with your vendors to understand what's really on their roadmap. I expect questions such as *Is there a delivery date associated to it?*"

Fischbach says Colt has had some nasty surprises such as delays and diluted propositions versus promises. But it has also had some nice surprises, such as products shipping sooner than expected.

"The data centre estate is clearly the most advanced in terms of readiness and capabilities, and the transport networks

are catching up. We are actively researching, testing, developing and deploying components in the various domains."

Colt has already introduced SDN/NFV-compliant products and services. Last October, it launched *Virtual IP CPE* which virtualises the Layer 3 routing capabilities for IP access services on its provider edge. In addition, the company is working on a virtual cloud-based version of *IP CPE*.

"We are also in the final stretch of selecting and deploying a next-generation data centre fabric with the software components required to build an SDN environment. Finally, we are prototyping a lot with selected vendors especially in the transport domain."

"One important building block is the software component that will direct all of this. It will be interesting to see how best to combine commercial off-the-shelf controller software with our in-house automation and orchestration overlay."

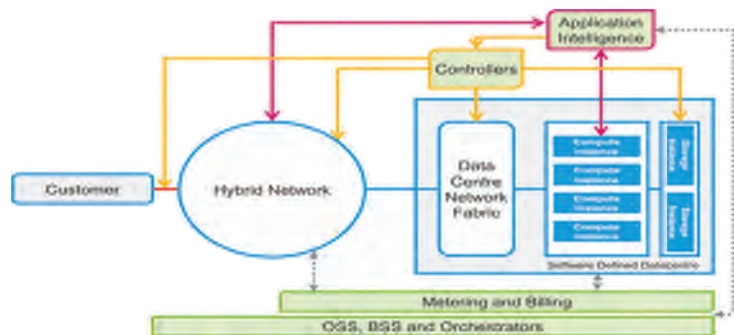
Does Colt know how SDN might change its business model and prices? Fischbach says there's no single answer as yet because it will ultimately depend on what customers say.

"Colt recently transformed itself from a pure play telecoms player to a provider of integrated network and managed services. Both SDN and NFV build on this transformation and contribute to its evolution."

"At this stage, the SDN/NFV impact is mostly internal. It helps us transform our architecture, evolve our operating models and build for the future. The building blocks will enable us to deliver the right service wrap to our customers."

"The transformation in the way capacity is consumed means customers are now starting to ask how they can consume network in a more flexible way that is aligned with their business requirements."

"The potential savings are interesting but we've seen a few situations where SDN solutions were more expensive than conventional ones. Despite these problems, SDN is clearly required to help us improve unit cost in a very competitive market."



Colt says that in the future, the addition of 'controllers' and advanced 'application intelligence' to augment existing as well as new network, compute and storage platforms will enable the delivery of next-generation business services thanks to end-to-end programmability and network functions virtualisation. The firm reckons that these two key building blocks, complemented by the right toolset from a metering, billing, automation and orchestration perspective, drive both the software defined network as well as the software defined data centre as one holistic service capability.

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Do more with less, even as the environment becomes more complex – that's the message to network bosses. IAN GRANT explores how WAN optimisation can lead to business optimism.

Running corporate networks is a lousy job these days but someone's got to do it. Fortunately the help is getting better.

Adrian Hobbins, CTO and co-founder of managed communications services provider Exponential-e, says businesses today are looking for greater flexibility from their network as a result of varying numbers of users, devices, applications and physical sites.

"For many, the solution is to utilise cloud infrastructure. However, this is putting increasing pressure on legacy networks. In addition, organisations are also facing increasing complexity as a result of network migrations and integration involving multiple providers.

"As a result, many businesses are finding that a hosted WAN enables them to operate their infrastructure more efficiently, and more easily explore additional cost efficiency or business continuity measures, including server replication, online backup and hosted telephony across the business."

But the network is only the means to the end. Outsourcing the WAN does not solve the basic problem, which is the network's performance with respect to the application that delivers the payload.

"The growing appetite for network bandwidth is unabated," says Jay Botelho, director of product management at WildPackets, an application performance management vendor. "As networks switch to 10Gbps and soon 40Gbps speeds, and become more cloud-like, traditional network analysis methods like real-time troubleshooting from network switch SPAN ports become unreliable and often

fail to provide the data needed for complex network analysis."

The fact is, netadmins who work either for enterprises or hosted network operators, are finding it hard to keep up. In a recent survey commissioned by ExtraHop, which makes network and application discovery tools, 34 per cent of IT professionals believe they are more likely to see a shooting star in the next year than real-time application activity on their network monitoring dashboards.

This tongue-in-cheek finding hides a serious point: many firms are either unaware or not using the available tools, or they just want to make it someone else's problem by outsourcing it.

Botelho says the only solution is network forensics. This means capturing, storing and analysing network traffic metadata in near real-time to reveal anomalies and spot trends like spikes in usage, drops in VoIP call quality and increased latency, and from there to

investigate the cause, whether network or application.

ExtraHop VP for EMEA Owen Cole agrees: "Without (network) visibility, IT teams are powerless to fix any problems that occur until after they happen, which holds businesses back."

ExtraHop's survey found that more than a quarter of respondents have lost count of the amount of time they spend each month troubleshooting issues, and a quarter reported needing to involve four to six people to fix problems.

"This could cost thousands of pounds more than using intelligent solutions that offer visibility and predict problems before they happen," says Cole.

That knowledge is everything, according to Brendan Reid, marketing VP of WAN optimisation vendor Exinda. "Having visibility of every piece of traffic on the internet or WAN, and the ability to control that traffic, is a major benefit of today's leading network optimisation

solutions. If the network manager knows what traffic is traversing the network, how much bandwidth is being consumed, and who the user(s) are at any particular point in time, he or she can then control all of the traffic by applying policies to define the maximum amount of bandwidth any particular internet site, cloud application or user can consume."

Once network managers have a clear picture of their company's network traffic, they can start to shape traffic patterns according to business needs rather than technologies. "They can even go so far as optimising applications on an individual user basis at a particular time of day, if this is what is required to increase productivity and therefore customer satisfaction," says Reid.

Doing this in the middle of a global technology transition from switching mainly circuits to packets does not make things any easier. Switching packets using Ethernet and IP brings greater flexibility and therefore complexity, but also allows more efficient use of resources, particularly bandwidth.

This capability is now convulsing the entire networking industry. The idea that WANs can be made as programmable as processing, storage and LANs is revolutionising networking thinking, operations and management. However, this is still a future that is unfolding.

Dave Greenfield, product marketing manager at Silver Peak which makes WAN optimisation software and appliances, says: "WAN optimisation software can today reduce over 90 per cent of the traffic across the network, accelerating application performance,



"A virtual WAN optimisation app can be downloaded from the internet in less than an hour; the same process for its physical counterpart would take weeks or even months to be delivered, configured and deployed."

*Dave Greenfield,
Product marketing manager,
Silver Peak*

Network recording delivers full visibility

You can't troubleshoot and resolve what you can't see. Traditional monitoring tools leave a lot of the detective work, ferreting out network glitches and investigating suspected intrusions up to the network engineers. Engineers have to trawl various log files and other sources for information, which wastes valuable time. Where detection tools do provide a packet snapshot, the details are usually very short and frequently incomplete, because capturing packets at the high speeds of today's networks is challenging and, in many cases, unattainable without specialized technology.

It's also worth noting that relying on detection tools for packet capture pre-supposes that the detection tool actually discovered the problem in the first place. That's a big leap of faith on a number of fronts. For example, frequently, the events that engineers need to investigate don't have an associated alarm. Network Operations (NetOps) teams in general rely on users for detection and then turn to tools for validation.

For their part, SecOps teams rely on dashboards of events generated by a variety of tools. These are often gathered together in a security information management or security information event management (SIM/SIEM) system's dashboard. Again, security tools are only as good as their primary signature sets or correlations, which again, is a big risk when you think about advanced persistent threats

The Emulex answer

Intelligent Network Recording fabrics based on Emulex EndaceProbe INR appliances have been deployed by many of the world's most critical and complex networks. An Intelligent Network Recording fabric gives enterprises 100% network visibility and ensures that when they are faced with network issues or cyber-threats, they have the relevant data to respond. An Intelligent Network Recording fabric based on Emulex technology consists of hardened EndaceProbe INR appliances,

purpose-built to capture, index, and record network traffic, regardless of network speed or traffic type, and the EndaceVision™ search engine for quick and easy visibility into the data that's been captured.

The following are the main reasons the largest enterprises have deployed an Emulex Intelligent Network Recording fabric:

1. 100% Visibility and Accuracy at Line Speeds. From 1 Gbps to 100 Gbps, the EndaceProbe INR appliances ensure that every packet is "visible" and receives nanosecond timestamping. Independent lab testing

continues to demonstrate that no other vendor can guarantee every packet, every time.

With DDOS and cyber-attacks now being launched at 50 Gbps and greater speeds, networks relying on technologies that begin dropping packets at 2 Gbps (and sometimes at speeds as low as 500 Mbps) are in trouble. For cyber-security teams, access to only 30% of the traffic can mean missing the packets key to identifying the source or type of traffic.

2. Data Management. You've just captured up to a terabyte of data containing not only customer and network data,

but possible threat information vital to your security response. Using standard analysis tools, it would be overwhelming to sort through millions of packets to come up with the source of a network outage, service degradation, or attack.

These two features — 100% visibility and complete data management — are a standard offering only from Emulex and are key reasons so many enterprises use an Emulex Intelligent Network Recording fabric for network forensics, operations, and security.

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Network problems that disrupt service delivery and security breaches that cause sensitive information to be lost are serious concerns for organizations that depend on their data networks for business continuity. Emulex's range of Intelligent Network Recorders are designed specifically to connect network engineers and security analysts at the sharp end of operations to the exact information that they need to investigate, respond and resolve intermittent and urgent events quickly and efficiently which helps organizations save money, reduce risk and sleep easy. Find out more at www.emulex.com/endace

- 100% accurate network recording
- Scalable from 1 Gbps to 100 Gbps
- Browser-based traffic search engine
- Full application-layer visibility



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prioritising key traffic, and eliminating packet re-transmission.

"It also uses Quality of Service (QoS) and traffic shaping, enabling voice, video, data and storage to reside on a single, converged network. And being software, it can be deployed in hosts in the cloud or in remote offices as easily as in the data centre, never locking organisations into the constant cost of refreshing hardware to accommodate ever-growing data volumes."

Optimisation tools

Silver Peak has recently unveiled a number of new products. They include the *NX-11K*, a two-rack-unit (2U) hardware appliance with 5Gbps of WAN capacity and up to 20Gbps of optimised throughput for TCP and non-TCP applications. The firm says it will support 512,000 simultaneous sessions.

Silver Peak also launched the *VX-8000* and *VX-9000* software data accelerators, claiming that the latter delivers more than 1Gbps of WAN performance. The new products are downloadable and run on standard hypervisors including VMware *vSphere*, Citrix *XenServer*, Microsoft *Hyper-V*, and KVM.

In addition, Silver Peak has announced that it can now deliver multi-gigabit performance on Microsoft *Hyper-V* systems following changes to the hypervisor. Greenfield says this will speed up tasks like remote data replication, virtualisation, cloud, Big Data, and server/storage centralisation.

The vendor has been working with Dell to produce a "branch office data centre in a box". Speaking at the launch, Brian Payne, executive director for

"Businesses are looking for greater flexibility from their network as a result of varying numbers of users, devices, applications and physical sites."

Adrian Hobbins,
CTO and co-founder,
Exponential-e

PowerEdge servers at Dell, said the new *PowerEdge VRTX* reduces 'hardware sprawl' and converges server, storage and networking in a compact footprint for the branch. "Silver Peak understands this model well. Its software-based WAN optimisation complements the Dell *VRTX* to help customers reduce the cost of long-distance networking and data acceleration between branch offices, data centres and the cloud," he said.

This is an extension of Silver Peak's *Agility* point and click solution introduced last year. It is designed to allow netadmins to accelerate individual workloads directly from VMware *vCentre* and other virtual infrastructure management consoles, simply by clicking menu choices.

"As a result, little or no networking expertise is required, making it easier than ever before to accelerate any application or workload in a virtual environment," says Greenfield. "*Agility* takes away the network-based deployment and configuration requirements, simplifies management, and allows the cloud or services manager to scale easily from a few applications to thousands of applications



from the virtualisation infrastructure management console with a few clicks."

Following the integration theme, at the recent Interop event held in Las Vegas, Exinda launched a network optimisation suite that combines WAN optimisation, network control and application monitoring. The suite is aimed mid-market enterprises and educational bodies. Exinda said at the time that many mid-market companies have had to use point solutions to solve individual network problems. But they are finding it harder to meet SLAs in the face of new mobile devices and their data torrents.

The company may be pushing at an open door. Market researcher Aberdeen Group found that 88 per cent of organisations have already centralised, or plan to do so, network and application performance and user experience visibility. "By deploying an all-in-one integrated platform, they are working to meet user demand, manage cost and maintain or improve the overall quality of their network and application experience,"

says Jim Rapoza, Aberdeen's senior network analyst.

With the new release, Exinda reckons its appliances can now create a baseline application performance score by monitoring application traffic for an hour, a day or a week. This reduces set up and configuration time, and makes it easier for network managers to assess and assure the performance of all business-critical applications.

It also has new Layer 7 signatures and protocols for applications such as *LinkedIn*, *Adobe Creative Cloud*, *SkyDrive* and *Google Drive* to allow network managers to identify traffic more easily and create policies to control that traffic depending on user, application, website, protocol or time of day. This ensures the right amount of network resource is allocated to the right traffic at the right time.

R&R Foods, said to be Europe's largest private label ice cream maker, used Exinda's network optimisation suite when it deployed an MPLS network, knowing it would need clear visibility into the different types of traffic impacting its network. "Our previous network experienced issues with bandwidth congestion and we knew that even with more bandwidth we'd still suffer in time from the same problems as we had no clear visibility into our network," says Jonathan Aldred, R&R group IT infrastructure manager.

He explains that the Exinda suite soon reported clear improvements in application response times and less "recreational" traffic. "The reporting and management capabilities of this all-in-one solution have allowed us to gain overall better control of our network," says Aldred.

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Avoiding the 'DIY hassle'

For firms that don't want the DIY hassle, Denver-based Virtela has introduced what's claimed to be the industry's first cloud-based managed WAN optimisation service, powered by its *Enterprise Services Cloud* architecture. Virtela says this is still the only open cloud platform purpose-built for enterprise networking, security and mobility.

The company has more than 50 local cloud centres located around the world, and its new service can be activated in more than 190 countries via its virtualised overlay network. This consists of more than 1,000 local and regional carriers that provide local connectivity to more than one million sites at a fraction of the cost of DIY solutions, claims Virtela. Perhaps uniquely, the firm offers 2.5x refund of its service fee if customers are unhappy with the performance improvement which, it says, can be up to 25x.

But what of the future? "We will see enterprises looking for solutions to deploy WANs with less risk to the business, namely by removing the bespoke approach to WAN services," says Exponential-e's Hobbins. "Organisations are also looking for a simplified procurement process, with simpler pricing models and solutions that ultimately make connectivity into cloud environments an easier process."

Exinda's Reid says the future of optimisation lies in the integration of conventional acceleration with intelligent network control for internet and WAN. "The ability to inject a deep understanding of usage context into how we manage our networks is the key in a highly complex future IT environment where personal devices are the norm and the application landscape spans public, private and hybrid networks."

Like all things networking, Silver Peak's Greenfield agrees that the future of WAN optimisation is clearly tied up with software defined networking (SDN) and network function virtualisation (also see *SDN feature* on pp 10-13).

"SDN has the potential to transform the industry and simplify network management end-to-end. By replacing proprietary network equipment control planes with software, organisations can easily implement systems that integrate

"As networks switch to 10Gbps and soon 40Gbps speeds, and become more cloud-like, traditional network analysis methods become unreliable."

Jay Botelho,
Director of product management,
WildPackets

compute, storage and networking.

"WAN optimisation vendors are starting to offer software that can provision, manage and control data acceleration directly from common virtual infrastructure management



platforms, such as VMware vCentre, Citrix XenCentre and Microsoft System Centre. This brings unprecedented flexibility and cost savings to

virtualisation and application administrators, enabling them to accelerate what they want and when they want without installing new hardware or reconfiguring switches and routers."

He adds that as software, SDN acceleration suites do not just make operations simpler, they also help with deployment. "A virtual WAN optimisation appliance can be downloaded from the internet in less than an hour; the same process for its physical counterpart would take weeks or even months for it to be delivered, configured and deployed."

"As a result, testing WAN optimisation is far simpler when it's delivered as software. And enterprises can upgrade to a faster appliance at any time – something that is often welcomed by those who may not know today what their WAN requirements will be in the future." ■



SANGFOR

Delivering Efficiencies in the Connected World

Business methods are changing constantly and companies that are successful have to change with them. Business is increasingly reliant on mobile workers and they are, in turn, increasingly reliant on access to the same data office based colleagues are using. Delivering applications and ubiquitous data access through 'cloud' services, video conferencing over the Internet might reduce travel and accommodation expenses, but, it does so by using more IT resources.

The additional pressure on networks, regardless of whether you are a diversified multinational or have a few locations in one city, you need everyone to be able to communicate with suppliers, customers and each other. Many organisations have a centralised server location, often hosted or 'cloud' based, where applications and data reside with branches connected in over a wide area network (WAN). No longer will users tolerate a poor service, the expectation is an office LAN like experience, wherever they are and that can lead to problems if the network doesn't perform as expected.

Solving Poor Productivity and Customer Service Problems

When a WAN performs poorly we see a low level of productivity at branch sites and increased user complaints as they are forced to wait until their requests are processed. Worse still, it can have negative effects on customer services and a loss of business in addition to a frustration and low morale amongst staff.

One traditional solution to solve the problem is to upgrade the bandwidth, which is always expensive, sometimes not possible and frequently doesn't produce the desired increase in performance. Any improvements that are made are often short-lived as the traffic increases and will quickly take any increased capacity. Additionally, it isn't always a lack of bandwidth causing the problem in the first place. LAN applications running over WAN are very chatty and wasteful of available resources.

A better and much more cost effective solution is to deploy WAN Optimisation from Sangfor which makes

far more effective use of the network infrastructure you already have. There are no expensive on going fees, simply a one-off cost that typically provides a return on investment within a year.

WAN optimisation works by reducing the amount of data that travels over the network, releasing capacity and making the whole operation more efficient. All transmitted data is cached enabling any data already sent to be identified and not sent again unless it has changed, cutting out completely the amount of data that was previously transmitted. Data that is actually sent is further reduced by compression.

The result is that traffic over the WAN is anything up to 90% less than it would be without optimisation and applications will run between ten and fifty times faster.

Immediate Improvements

One of the best features of the Sangfor WAN optimisation product is the truly plug and play nature so significant performance improvement is gained out of the box. It all just happens and no intervention is necessary. Once it is up and running however, you will receive performance reports and can make changes to settings that will allow you to prioritise specific applications and user activities to obtain optimum performance.

Operation	Performance Increase
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Remote file open	7-10x
Remote file save	4-5x
Remote Desktop	3x

Efficiency is further improved through software that optimises transmission mechanisms, accelerates application protocols and monitors and controls bandwidth dynamically. Mobile users don't miss out either because Sangfor provides a software client that is loaded on mobile devices to provide local WAN optimisation services.

If you have even one remote office, have mobile workers that need to access central data and application software or simply can't backup your data fast enough, Sangfor WAN optimisation products may be the answer to your performance problems.



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"Having visibility of every piece of traffic on the internet or WAN, and the ability to control that traffic, is a major benefit of today's leading network optimisation solutions."

Brendan Reid,
Marketing VP,
Exinda

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Contact centres

Innovative new products to help businesses and organisations enhance their voice and video communications.

Cisco's new 8831 is the first commercially available IP conference phone to use the latest *FLX* digital signal processing platform from Revolabs. The system is claimed to offer advanced audio technology, superior echo cancellation and acoustics, as well as proprietary wireless microphone technology for high audio clarity and flexibility.

The 8831's base unit is said to integrate the industry's first dual speaker configuration with four HD capable microphones. The phone also features a corded dialler and has been optimised for Cisco's *Unified Communications Call Manager* system.

The 8831 is available with three



options to expand coverage for larger rooms: a daisy-chain kit to link two base units together, and wired and wireless kits which each feature two omni-directional microphones. The kits enable users to easily place the additional microphones anywhere they are needed in the conference room to expand coverage and maximise sound quality.

Jabra says its recently launched *Motion* headset is completely interoperable with all mobile devices and UC platforms, and offers state-of-the-art features.

Using a combination of motion sensors and intelligent microphones, it says the device automatically adapts to the user's sound environment and adjusts to ensure optimal and clear audio quality, whether in a noisy office or on the road.

The headset also registers any movement instantly. For instance, calls are answered as soon as it's picked up; if the user starts walking, the speaker volume is automatically adjusted; and it will turn off to save power when laid down.

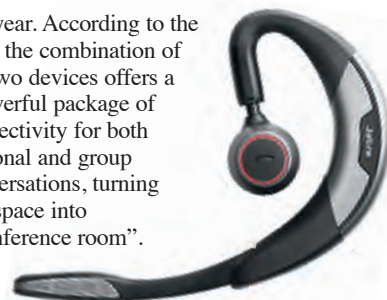
Jabra says *Motion*'s semi-circle design is ergonomically shaped to mimic the back of the ears, while a folding boom means it can be safely carried in a pocket without

the risk of breaking. The boom is also used to receive and end calls with a simple flip of its arm.

In addition, the company says the headset features NFC (Near Field Communication) technology for fast pairing – users simply tap the headset with their NFC-enabled devices to connect.

Motion can be used with Jabra's innovative Bluetooth-enabled speakerphone, the *Speak 510*, which was launched earlier

this year. According to the firm, the combination of the two devices offers a "powerful package of connectivity for both personal and group conversations, turning any space into a conference room".



Panasonic System Communications

Europe reckons it's got the ideal solution for office-based employees who require freedom of movement around the building whilst always remaining in contact.

The *UDT* series of phones can be used with Panasonic's SIP-based multi-cell DECT cordless system. The company says this enables a single communication zone throughout a site so that calls can be made or received from any location using compatible handsets and *UDS* cell station transmitters such as the *KX-UDS 124*.

Among the handsets offered in the range is the *KX-UDT111 Standard* (shown right) and the *KX-UDT121 Executive* (far right).

Panasonic says the *KX-UDT111* offers up to 12 hours talk time, vibrate alert, and is ideal for general office users in all types of organisations.

The slim and lightweight *KX-UDT121 Executive* model offers up to 14 hours battery life and includes Bluetooth headset support which is said to make it suitable for the retail, hospitality and healthcare industries.

Both feature high-quality 'wideband' voice and background noise reduction as standard which, according to Panasonic, demonstrate significant speech quality improvements compared to traditional cordless systems. It adds that with simplified administration and maintenance, setup costs are also reduced with "quick and effortless" cell station integration.



A new enterprise-grade docking station is claimed to be the industry's first, and currently only, device that enables employees to convert their tablets or smartphones into a desk phone.

ShoreTel says its *Dock* transforms *iPads* or *iPhones* that are running the *ShoreTel Mobility* app into "powerful" business desk phones and enterprise collaboration tools. Once they've installed the app, employees simply slide their *iPad* or *iPhone* into the *Dock* to turn it into a high-quality business desk phone. The device only requires a single power adaptor and automatically keeps the handhelds charged so that users always have a full battery.

When combined with ShoreTel's *Mobility* and conferencing applications, *Dock* users can take advantage of UC features including

voice, instant messaging, presence and conferencing on their *iPads* or *iPhones*. They can place and answer calls by simply picking up the handset and dialling a number on the *Dock*'s dial pad or on their device's screen.

The firm adds that since its *Mobility* app works over both Wi-Fi and cellular, the *Dock* can be deployed anywhere – users can be contacted on their same extension whether they are working at their office or at home.

ShoreTel has so far not confirmed any plans for a *Dock* that supports *Android*.



According to **Siemens Enterprise Communications** (SEC), its new range of *OpenScope* IP desk phones feature HD audio to provide better sound quality, and also feature GbE, customisation and application integration for high-performance users.

The firm reckons the ergonomically designed phones require minimal space on the desktop and are also energy efficient – it claims they use up to 34 per cent less power than rival phones.

In addition, SEC says that centralised device management and pre-programmed keys reduce service costs. With simplified programming and functions such as hold, transfer and headset pre-configured, it says users are set up much quicker.

There are two models that have been initially launched


as part of the new line-up. The company says the *OpenScope Desk Phone IP 35G* is designed for the "standard" user, with features including headset connectivity and multi-line options.

The *OpenScope Desk Phone IP 55G* is aimed at the "mid-range and power user". It is described as a highly secure device, and includes expandable multi-line capabilities and a customisable interface.



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Hiring by tech firms stays strong in 2013

Despite the recession, the UK technology sector remains upbeat about job creation in 2013, according to a survey by Barclays. It questioned more than 700 UK businesses and found that 63 per cent of technology firms will be creating new posts this year. While that's down from 78 per cent in 2012, Barclays says the technology sector remains more optimistic compared to the national cross sector average of 56 per cent, which is little changed from 2012's figure of 58 per cent.

More than half of the tech companies surveyed said they are planning to create senior management roles, the highest of all the sectors studied compared to the national cross sector average of 23 per cent. In addition, 93 per cent are creating middle management or skilled positions, while 37 per cent are planning entry level roles.

"The significant increase in top-level jobs, higher than any other sector, demonstrates how serious these businesses are about achieving ambitious growth plans," says Sean Duffy, MD of Barclays' technology, media and telecoms team.

In other good news for the sector, the study says 69 per cent of technology firms are not expecting to lose jobs this year.



Barclays' Sean Duffy says technology firms are "serious" about achieving growth plans.

CyberTalent Assessment tool aims to 'revolutionise' recruitment process

The SANS Institute has launched *CyberTalent Assessments*, a recruitment management tool that can help validate the skills of information security professionals.

SANS says that the typical hiring process for a skilled infosec professional is a "complex and time consuming task", even if the recruiter is a subject expert. It says the new tool will cut down on the administrative burden of CV reviewing, shortlisting and first interviewing.

Using exam questions based on the Global Information Assurance Certification programme, the assessments can provide benchmarks across many IT security domains including communications, internet, networking concepts and operating systems.

"Most importantly, the *CyberTalent Assessments* offer the best way to accurately verify the job applicant's technical knowledge," claims Tom Carver, director of SANS CyberTalent. "It provides that information in an easy to read format where the applicants' skill levels can be compared to each other."

The tool is a timed online assessment; organisations can send the assessment link to candidates wherever they are. As soon as it is complete, the recruiting manager can compare and contrast the participant's results in a variety of formats such as PDF, Excel or online.

Carver says recruiters typically look for key words, a particular certification or training qualification on a CV. "However, with this tool you can widen the criteria as

the assessment will drill down to actual practical infosec knowledge and cut straight to those suitable for the job whether they have the key words or qualifications on their CVs or not."

School competition aims to find future security experts

Secondary school pupils in the UK will be able to compete in a new national code breaking competition to demonstrate their potential for a career defending the UK from hackers and computer viruses.

The competition starts in September and is backed by the Cyber Security Challenge which is supported by industry, government and academia. It will see teams of key stage 4 students breaking coded messages designed by experts and developing their own for other schools to

crack. Entrants will receive a pack of ciphers, code breaking exercises and support materials that not only teach how to crack the codes, but also gets them working in teams to develop their own.

Their codes will be awarded points based on ingenuity and difficulty. The ciphers will then be shared with other schools for them to crack in order to gain further points. At the end of the virtual tournament, the top scoring teams will be invited to the final at the start of next year for a chance to win £1,000 in cash for their school.

NEW COURSES



C-Level Partner Audit Service – Cluster
Cluster has launched *C-Level Partner Audit Service* which combines a skills-gap analysis with a full quotation and business-case presentation for training investment.

The company, a major 'Cisco Business Learning Partner', says the service gives decision-makers all the information and support they need to ensure they make the right strategic investments in Cisco training. Call 0208 123 1600

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This seven-day course aims to deliver the very latest knowledge about data centre energy provision, use and management. Candidates who successfully complete the programme will gain *Certified Data Centre Energy Professional CDCEP* certification and an internationally recognised level 5 professional BTEC qualification.


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It replaces the need to buy, manage and maintain physical IT infrastructure and is built into Interoute's fibre connected physical Data Centres across Europe.

Using the online self-service portal you can choose to build your Virtual Data Centre in Amsterdam, Berlin, Geneva, London or Paris and move it between Data Centres for free. It's simple to provision, hugely scalable, compliant and cost effective.

We call it hands on cloud control. Visit us at Cloud World Forum for the full story.