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Dark fibre fuels future
Zayo to install London-wide dark fibre network for SSE Telecoms
News, p2

Medically fit networks
How IT systems can help improve health services
Real World Networks, p9

Features
Modular data centres. PLUS, training: get your head in the cloud
Features, pp10-17

BT goes to court over SWAN tendering process

by Ian Grant

The Scottish government's attempt to buy a new public service network that would save it £300,000 a month has ended up in court.

The Capita and Updata Infrastructure consortium tendered the highest-scoring bid for the Scottish Wide Area Network (SWAN) contract *(News, Dec 2012)*. Other bidders were the incumbent, BT, and a joint venture between Cable & Wireless (Vodafone) and Virgin Media Business.

A Scottish government spokesman says that BT has taken the procuring body, NHS National Services Scotland (NSS) to court, alleging NSS was not transparent in the scoring process for the bids. BT is calling for the tender to be re-run or for NSS to pay it £20m in damages.

NSS has applied for an urgent dismissal to enable it to award the contract and speed up the savings. It had hoped that work on SWAN would begin in April.

A Capita spokesman said: "We are aware of the legal challenge. It is a matter of public record that Capita has participated in the bid process for the provision of Scotland's wide area network but, until the SWAN board confirms its decision on the preferred bidder, it would be inappropriate for us to comment."

BT is already receiving at least £264m in public money for rolling out next-generation broadband access under the £410m Digital Scotland project. At the time of writing, the telco did not respond to our invitations to comment on the SWAN tender.

Under the initial 'Vanguard' contract, NHS Scotland, Education Scotland and six local authorities will join the new SWAN. The contract is valued at around £110m, but the winner could take home £325m as more public sector bodies join during its six-year lifetime. The NSS said in a statement there is already a "good pipeline" of other organisations committed to participating because of the possible savings.

The NHS has 150,000 staff in Scotland alone, according to the government spokesman who added: "Ultimately, the real value of the network is in creating a standard platform for the whole public sector – economies of scale, common technologies, savings, integration possibilities, so that would [mean] thousands more staff." ■

The Court of Session at Parliament House, Edinburgh, where Judge Malcolm is hearing BT's complaint against the NSS' system for scoring bids for the Scottish Wide Area Network.

PHOTO: MACCOINNICH APRIL 2005 & USED UNDER CREATIVE COMMONS LICENCE.

Threat to traditional vendor model as SMEs look to open source

Traditional IT models are under threat with 31 per cent of SMEs currently using non-license-based solutions compared to 16 per cent in 2005, according to research by Scale Computing. In a survey carried out for the infrastructure provider by Vanson Bourne, it's predicted that this will rise to 36 per cent by 2015.

The study of senior IT personnel in 200 UK firms found that 48 per cent reported their budget was not enough and that smaller firms had less scope when it came to cutting costs. "The major IT vendors have for a long time forced enterprise solutions on small and mid-market firms and made them pay through the nose for software for too long," claims Jeff Ready, CEO, Scale Computing. "Today, small and mid-market businesses realise there's an alternative, and they no longer have to pay for expensive infrastructure systems."

This contrasts sharply with large businesses. Ninety-nine per cent of respondents agreed to some extent that large organisations have a reputation for buying "big name" brands, as their IT decision-makers believe that by doing so they will become more employable.

Ready says: "Traditional IT has been brainwashed into thinking that paying more money for big brand names is value for their business. The reality is that there is a new breed of IT emerging, which is savvy enough to understand that the alternatives are good enough, and they no longer have to pay for licences."

Seventy-six per cent of respondents said that the aim with most of their IT systems was to have a robust, scalable infrastructure that achieves competitive parity at minimum cost. As a result, Scale Computing says it's no surprise that some form of licence-free IT is the preferred option for 69 per cent of IT heads. ■

SSE Telecoms sees a bright future for its London-wide expansion.

Dark fibre fuels future for London

The end of 2013 saw SSE Telecoms sign a deal with Zayo Group to install a London-wide dark fibre network. Zayo, an international provider of bandwidth infrastructure services, will install a point of presence network which will connect 22 locations. They include 21 BT phone and Ethernet exchange points in London and a further exchange serving the Slough area.

SSE Telecoms already operates its own fibre network in London. But this new contract will enable it to leverage Zayo's additional fibre reach, as well as the firm's ability to design and build large-scale fibre networks. SSE aims to offer a high-capacity connectivity network to a greater number of businesses based in the capital. Services are scheduled to go live during the second quarter of the year.

The deal plays a part in SSE's larger plans to extend its network coverage to all major business conurbations across the UK. The programme, known as 'Project Edge', will see the company deploy its own high-capacity PoPs in 54 additional central business districts, serving almost 106,000 more business postcode areas with high-bandwidth fibre connectivity.

■ In a separate deal announced in January, SSE will supply 190km of dedicated dark fibre to connect Everest Data Centres. The network provides connections from London Docklands to Everest's existing centres in Slough as well as its new 1,000 rack, 6MVA facility in Reading.

"This network solution has been built with the future in mind," says Chris Jagusz, MD, SSE Telecoms. "Our scalable and agile network can accommodate further expansion as Everest extends its UK presence with next-generation data centres."

The demand may come soon, as Everest MD Ed Butler says his firm is looking to establish a site in the M25 corridor in the "near future". ■

Technical glitches costs UK £3.4bn

The UK economy is losing £3.4 billion every year due to technical glitches and software crashes, according to new research from software firm FileMaker.

The problems appear to increase with the size of the firm. Fifty-two per cent of C-level execs in larger SMEs (those with over 300 staff) reported losing an average of 3-4 hours per month from technological issues.

The survey also flagged up how technology is failing to support workers as habits change, for instance with remote working. 92 per cent of respondents said they work remotely at least some of the time, but two fifths of them also complained that their organisation's support for remote working limited the scope of work they could accomplish whilst away from their desk.

Tony Speakman, FileMaker's director for Northern Europe, says: "This study highlights the costs that businesses incur by using technology that falls short of expectations and business requirements."

According to Speakman, although C-level execs in SMEs believe they understand the technology, it is costing an unacceptable number of man hours and failing them on fundamental issues such as duplication of effort and mobility.

Despite these apparent limitations in currently available solutions, the research also showed untapped resources that were already at hand. For example, features such as *Excel*'s collaboration tool to share spreadsheets had only been used by five per cent of respondents, with people being almost as likely to print out a hard copy. ■

Following earlier customer trials, First Great Western has now expanded its on-board Wi-Fi service.

Free Wi-Fi expansion is on track

Train operator First Great Western (FGW) is to roll out free Wi-Fi across its *High Speed* and *Night Riviera Sleeper* services by the end of 2014 with the help of transportation connectivity specialist Nomad Digital.

The deployment delivers on promises to increase Wi-Fi provision which the train firm made last October as part of its bid to acquire a new 23-month franchise. The time scale for delivery will see both daily *Night Riviera* services kitted out by June with the larger fleet of 53 *High Speed* trains beginning installation in May. Completion is expected by the end of the year.

The expansion plans come on the back of a successful test run where FGW trialled Wi-Fi on board its fleet of *Class 180* trains which serve the North Cotswolds. "Our free Wi-Fi has been very well received by customers, and within the coming year all high speed and sleeper fleet customers will be able to read their emails, browse the web, or simply catch up with friends while on the move," says FGW MD Mark Hopwood.

As well as offering wireless services on its trains, the operator also offers Wi-Fi at a number of stations in conjunction with public access hotspot provider The Cloud.

Nomad Digital says this latest deal with FGW is yet another example of the "vast increase" in demand for wireless data on trains worldwide. "The public's demand for Wi-Fi connectivity on transport has grown rapidly, becoming a vital tool for working and staying connected while on the move," says CEO Andrew Taylor.

Over the last few months, Nomad Digital has deployed its systems for a number of train operators such as Eurostar and ScotRail (*News, Jul/Aug 2013*). ■

Mobility worries holding back UK businesses compared to rivals

UK firms are missing out on the benefits offered by mobile solutions, according to independent research commissioned by Citrix. More importantly, they appear to be running the risk of falling behind their rivals in other countries, with UK firms ranking fourteenth out of 17 nations when asked whether they thought "mobility as an initiative" would give them an advantage.

The *Mobility in Business* report polled 1,700 senior IT decision-makers around the globe and found that despite 48 per cent of UK businesses already having a formal mobile strategy (in line with the worldwide average of 47 per cent), only a quarter thought it should be a "top business priority".

Citrix believes the UK could lose out if attitudes don't change. "High growth economies like Brazil, India, and China are moving to capitalise on the potential of mobile, leaving those economies we consider to be more developed at risk of being left behind," warns James Stevenson, Northern Europe VP of Citrix.

The survey also sheds light on the concerns that are hampering firms. The top three barriers reported were: legacy systems were not suitable for mobile purposes (53 per cent); support for multiple mobile operating systems (45 per cent); and supporting the proliferation of device types (37 per cent).

However, Stevenson thinks companies may have to go mobile whether they want to or not: "There's been a shift in power between the employer and the employee. Workers are driving change in how IT is being used in the workplace; they want the freedom to choose the apps, devices and productivity tools they feel the best to help them do their daily role." ■

Portsmouth Hospital Trust can now build on its ability to track application performance.

Portsmouth Hospital cures visibility issues

Portsmouth Hospitals Trust (PHT) has deployed an ExtraHop *EH2000v* virtual appliance to help manage more than 100 clinical and administrative applications, including its core Citrix-based virtualisation platform.

With a remit to provide a full range of services to more than 650,000 people across Portsmouth, South East Hampshire and West Sussex, PHT relies on a suite of critical applications for its day-to-day operations, including in-house developed databases. While over 6,000 staff use the systems for tasks such as accessing patient information in real-time and managing patient discharges, Philip Kenney, PHT's head of IT operations, wanted more control over the applications environment.

"Latency or failure can dramatically impact the effectiveness of our clinicians and staff, as well as patient care," he says. "With such a high-pressure and demanding environment, IT must be an enabler, not a source of delays and frustration."

With that in mind, Kenney enlisted the help of service management and operational support systems specialist Nxtera who had previously delivered a successful project for the trust. It recommended ExtraHop's solution because of its use of wire data to gather information instead of requiring probes to reside on the servers, which can themselves cause performance issues.

"The operational intelligence we've been able to extract using ExtraHop's wire data analytics has been a game changer for PHT," says Kenney. "We now have the ability to see real performance for every user across every application in real-time."

Owen Cole, ExtraHop's EMEA VP, adds: "PHT had a huge area of opaqueness in their application delivery chain and simply could not find a technology that offered the level of visibility they required."

He goes on to explain that the highly complex environment–with VMs migrating between locations depending on workloads and the available resources – was a challenge for log and agent-based APM, as well as legacy NPM technologies. ■

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THE WORLD ACCORDING TO...

Peter Groucutt, managing director, Databarracks

Distinct lack of IT competence and training in UK businesses

UK organisations are distinctly lacking in cloud-specific competencies and training. In our latest Data Health Check report, we found that 43 per cent of IT professionals rate their current competence in cloud implementation and management as either 'poor' or 'very poor', with only seven per cent rating it as 'excellent'. This is despite the fact that 64 per cent of the 400 IT professionals from UK-based organisations questioned are currently using at least one cloud-based service.

Respondents were asked about the changing ways in which technology is used by businesses today. As part of this year's report, greater focus was put on assessing the impact of cloud computing on the IT job market, as well as the competency and training of employees.

Despite the obvious lack of confidence in their cloud competency, 54 per cent of respondents have received no cloud training in the past 12 months. Even more worrying is that 53 per cent have made no plans for training in 2014.

While all this doesn't present an immediate threat to jobs, as businesses continue to use more cloud services there is clearly a new skillset required to manage them. While the myth that cloud services will eventually replace in-house IT teams is largely unfounded, what we can expect to see instead is a change in the shape of the job market.

Our data shows a significant reduction in tape-based backup and continued growth in general cloud adoption, with minimal job losses. IT departments are evolving. In the past, the majority of their time was spent managing internal systems and a smaller portion was spent on using those systems to support their organisation. Cloud services allow IT teams to focus the majority of their time on using technology to best serve business.

Cloud services have evolved rapidly over the past decade, and their adoption is likely to continue to grow. Our report suggests that the number of organisations who have adopted at least one cloud-based service has risen to 64 per cent in the last 12 months. There is no reason cloud computing should be something for the IT department to fear. But employees must ensure that they remain relevant in today's changing market by gaining the appropriate skills and qualifications.

Training for the cloud – advice from the CloudEthernet Forum, pp14-17

Council's new WAN cuts costs

North Lincolnshire Council PSN will replace its existing WAN in a bid to improve collaboration and enable better "joined up" public services in the region. The project, which will see a move to using resources provided by MDNX, promises to deliver next-generation infrastructure whilst also reducing the collective costs of the network used for public services by over 25 per cent during the next five years.

The council will connect workers at 72 sites across the region including its offices, libraries, schools, colleges, youth centres, leisure facilities, courts, and homeworkers. The aim is to power a collaborative approach and provide a platform for other public services to join and benefit from the network by, for example, playing a role in the future deployments of other services such as CCTV and city-wide Wi-Fi.

An educational network will also be deployed over the PSN providing connectivity to more than 50 schools across the county and linking into education networks such as Janet. Additional content filtering is to be deployed through MDNX's strategic partner Equiinet to protect student internet usage whilst on campus.

"The integrator model provides a truly competitive approach to the delivery of connectivity enabling us to access an array of different products and services," says Paul Smith, unified communications manager, North Lincolnshire Council. "This has enabled us to introduce a huge amount of flexibility into our network."

In separate news announced in December, MDNX has acquired Easynet, a global provider of managed networking, hosting, and cloud integration services. The merged operations of the two businesses, including the North Lincolnshire deal, will now operate under the Easynet brand. ■

Microsoft extends security support for Windows XP

While Microsoft is planning to stop support for a number of its end-of-life products on 8 April (*News, Jul/Aug 2013*), it says it will now extend its anti-malware support for *Windows XP*. In an announcement posted on its *TechNet* blog on 15 January, the software giant says it will continue to provide updates to its anti-malware signatures and engine for *Windows XP* users through 14 July 2015, in order to help organisations complete their migrations. It adds: "This does not affect the end-of-support date of *Windows XP*, or the supportability of *Windows XP* for other Microsoft products, which deliver and apply those signatures. For enterprise customers, this applies to *System Center Endpoint Protection*, *Forefront Client Security*, *Forefront Endpoint Protection* and *Windows Intune* running on *Windows XP*. For consumers, this applies to *Microsoft Security Essentials*. ■

Tunnel network

UK passengers travelling through the Eurotunnel will now be able to use their mobiles following the signing of a 10-year deal between Vodafone and EE to offer both 2G and 3G services. The 50km deployment was carried out by Alcatel-Lucent using Axell Wireless' distributed antenna system (DAS). This features a network of repeaters and leaky-feeder cabling that are used to propagate coverage throughout the length of the tunnels. The GSM-P network, which supports consumer calls, required 142 repeaters, while the separate GSM-R network used for specialist railway communications needed 375. ■

Kcom's telephony available via GPS

Kcom has been awarded a framework deal for telephony services by the Government Procurement Service (GPS). The service, which is in charge of saving money for the public sector by improving supplier management, has cleared the communication services provider to offer both traditional telephony and inbound voice services as two separate lots in the framework. Kcom says this new framework agreement is the procurement vehicle of choice for these services. It adds that it avoids the current situation where telephony lines and calls procurements have to be split between the PSN Connectivity and PSN Services frameworks. ■

Zoo keeps data poachers at bay

Chester Zoo has deployed WatchGuard Technologies' integrated security platforms to provide unified threat management and protect its network and data across a 110-acre site.

With 350 full-time employees and more than 250 seasonal staff, Chester Zoo is home to more than 11,000 animals and attracts over 1.4m visitors a year. It uses a fully virtualised server farm on a 10Gbps backbone with 1Gbps fibre connecting the majority of its 175 desktop computers. There are also more than 100 PC-based EPOS terminals deployed at the entrance, shops, and catering establishments.

Chester Zoo uses a fully virtualised server farm on a 10Gbps backbone with 1Gbps fibre.

WatchGuard says its solution offers a suite of functionality including intrusion prevention and detection, Web 2.0 application filtering, and SSL VPN support to enable secure remote access. The platforms were supplied and installed by Chester Zoo's IT solutions provider and WatchGuard partner Concorde IT Group.

Martin King, Chester Zoo's IT manager, says: "Concorde helped us at every stage of the process – even coming to do the install at five o'clock in the morning. Ongoing management is straightforward and intuitive for our IT department team."

As well as reliable intrusion prevention and detection services, King says the WatchGuard solution was chosen as it also offers improved logging and reporting. "WatchGuard was the only vendor that ticked all our boxes for the functionality we needed going forward and also offered the most competitive price," he adds. ■

Self-service to reduce waiting times for doctors

Pennine Acute Hospitals NHS Trust (PAH) will use a self-service enterprise app store for 10,000 users in order to streamline application delivery and improve employee satisfaction.

Driving the trust's consumerisation of IT and BYOD initiatives, Flexera Software's *AppPortal* and *AdminStudio* will prepare, package, and provide applications allowing doctors and other staff to easily access hospital services and data on their personal smartphones and tablets. With users often having to wait up to seven days for the delivery of their apps, PAH hopes that the self-service enterprise app store will drastically reduce wait times to as little as fifteen minutes.

The trust is rolling out the store at the same time as migrating from *Windows XP* to *Windows 7*. It is also carrying out a virtualisation initiative that involves converting *.MSI* packages to *Microsoft App-V* format.

AdminStudio will provide the OS and virtualisation conversions. It will also offer application testing, remediation, packaging, and hand-off to the app store that will be provided by *AppPortal*.

Christine Walters, associate director for IM&T, Pennine Acute Hospitals NHS Trust, says: "We want to empower our clinical professionals to request, obtain, and consume business applications and services quickly and reliably, in an environment that's as easy and intuitive as downloading an app from *iTunes*."

Flexera Software says it was also chosen because of *FlexNet Manager Suite*, its software license optimisation solution. This is claimed to offer visibility and control of IT assets, thereby reducing ongoing software costs and ensuring compliance. ■

Small cells could make big sells

Enterprises are no longer willing to contend with poor in-building mobile coverage, according to research from specialist consulting firm Real Wireless. The independent study, carried out for the Small Cell Forum, found that 82 per cent of businesses would switch provider to guarantee coverage.

With in-building coverage an issue for businesses of all sizes, Real Wireless showed how operators should not only address the problem but that doing so would be a sound financial investment.

For a representative medium-sized business with around 180 employees and an office floor space of 2,700m^2, it says that installing just four enterprise small cells can increase the customer lifetime value from £65,000 to as much as £271,400 – an increase of 329 per cent. Even conservative estimates would see an improvement of 194 per cent to £190,000, according to the study. By delivering improved coverage and customer satisfaction, Real Wireless reckons that operators can expect to make a return on their investment within the first year as well as see improvements in customer retention and spend.

The study also looked at other in-building wireless options including distributed antenna systems, repeaters, and Wi-Fi, but concluded that although all the solutions have a part to play, small cells offer a strong commercial benefit.

"It is not just the carrier that can benefit, but the enterprise too," says Professor Simon Saunders, technology director and co-founder of Real Wireless. "Improving coverage means fewer dropped calls and less frustration." ■

BT plans more fibre to cities

BT will invest a further £50m into its commercial fibre broadband programme over the next three years. In an announcement made in January, the firm said that the money will benefit more than 30 cities, helping to make high speed broadband available to more than 400,000 additional premises.

BT said that the new investment will focus on three areas: enabling city cabinets that weren't part of its original commercial plans due to technical challenges or local planning restrictions; deploying FTTC to serve multi-dwelling units such as apartment blocks; and laying further fibre, including FTTP technology, to new build sites in cities. ■

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Unmet expectations hampering cloud adoption

Cloud is still a relatively small investment for the UK's largest organisations and is failing to meet IT leaders' expectations, according to sourcing advisor Alsbridge.

It consulted 50 senior IT decision-makers around the UK and found large mismatches between the expectations and the real-life results that cloud was giving.

For instance, 74 per cent expected operational cost savings but only 41 per cent saw any significant reductions. Efficiency was also lacking with 59 per cent expecting tangible benefits and only 35 per cent feeling that they'd seen the results they had hoped for.

"Cloud has been hyped-up by consultants and suppliers alike for many years, but in truth there is still caution around its wider adoption beyond SaaS and 'sand-boxed' platforms," says John Sheridan, director and head of IT outsourcing, Alsbridge.

The survey showed that with those who had invested in cloud solutions, SaaS had been adopted by 70 per cent, whereas other solutions trailed far behind with PaaS at 32 per cent, computational IaaS at 20 per cent, and storage IaaS at 14 per cent. Sheridan blames a lack of investment as many respondents claimed that barely a fifth of annual IT budgets are spent on externally managed cloud computing accounts.

Alsbridge also discovered that almost two thirds cite data sovereignty and privacy as their top concern to adopting more cloud services. A tenth said legacy applications were their biggest problem, whilst one in twenty felt they lacked the necessary skills.

Sheridan believes that these are not unreasonable worries. "What concerned me most was the limited recognition of key risk factors. Based on our experience of the primary challenges, IT leaders are seriously underestimating the job of migrating to the cloud," he warns. ■

IT leaders are seriously underestimating the job of migrating to the cloud, says Alsbridge's John Sheridan.

Cloud telephony promises to help managers keep pace

BT and Cisco have launched *One Cloud Cisco* to meet the perceived demand for improved communications and collaboration tools without the need to rip and replace telecoms hardware.

The new service is based on Cisco's *Hosted Collaboration Solution* and promises a "full range" of collaboration tools – including mobility, *Jabber*, instant messaging, and high-definition video as well as high-definition voice.

The partners say it can be deployed on a pay-per-user basis with options for no term or call volume commitment, which aims to address IT departments' need for solutions that are cost efficient, scalable, and easy to deploy.

Also on offer are BT's *One Voice* portfolio of services. These include a VPN that allows voice and data traffic to be securely transmitted over a public network, reduced rates for mobile calls by routing calls via the BT *One Voice* network, and SIP trunking which aims to open up a range of unified communications options.

The rationale for the launch is based on an independent survey of 500 IT decision-makers carried out for the firms. Here, two thirds felt that their current comms platform wasn't equipped to change with their business needs. On top of that, 85 per cent reported that they were looking to deploy cloud collaboration services in order to help them meet demand. ■

More racks: NaviSite has ordered 2.4MW of capacity as part of a deal signed with Digital Realty.

NaviSite expands into two new UK-based data centres

The European subsidiary of NaviSite, an international provider of cloud-enabled hosting, has signed a deal with Digital Realty Trust which will see 2.4MW of IT load being made available on a long-term basis across two data centres in Woking and Redhill. The move is partially a response from NaviSite which claims it has experienced exponential growth since introducing its infrastructure-as-a-service *NaviCloud* platform in 2012.

Existing services at the Woking data centre will see an increase in capacity along with a new cloud node at Redhill. The hoster's key target is to be able to launch a UK-based disaster recovery service over the cloud.

"The business environment is experiencing an increased focus on compliance, data sovereignty and regulation," says Ron Pepin, director of data centre operations for Time Warner Cable, NaviSite's parent company. The firm hopes that having a UK-based operation will solve many of the potential headaches such issues could cause for its clients. It says that previously, although applications and data over the cloud were held in this country, backup and disaster recovery were not. The new deal will see those services also being offered in the UK, enabling customers to deliver against any data sovereignty restrictions.

Pepin explains that the choice of Digital Realty Trust came down to the way that its facilities had been built, in particular the high-speed networks connecting the data centres. "The structure by which Digital Realty has built its facilities provides power, cooling and redundancy at a scale that will reduce NaviSite's time-to-market for provisioning new IT services in a secure way. These factors were key for us in making the decision to expand our data centre footprint with Digital Realty." ■

Start-ups boosted by "pay-as-you-grow" VoIP service

Mantle Enterprise Business Centres is working with cloud-based telephony specialist Teliqo to deploy a VoIP system that will include deskphones and teleconferencing facilities.

Mantle provides independent serviced offices, and with this latest project it aims to augment its "pick and mix"-style selection of services which it offers to firms setting up their businesses.

The company will use Teliqo's system across two sites in Wokingham, Surrey to support its rapidly-growing tenant base of 120 professionals. It's claimed the platform offers a simple, scalable service that delivers low-cost calls along with over 200 "professional" features, from conference calling to call recording.

The key benefit for Mantle is that the cloud solution forgoes the hardware and capital expenditure required for a traditional phone system, and also uses a "pay-as-you-grow" model where the firm only pays for the current number of users. Teliqo says that adding and removing users can be done typically within 24 hours, meaning a quick response to clients who suddenly need to up- or downsize.

The system also supports mobile working via the *One Number* feature. This allows users to have a single number that can be answered at any of their deskphones, smartphones, laptops, or tablet devices.

Luke Bolt, MD of Mantle Enterprise Business Centres, says: "Teliqo has enabled us to add significant value to the services we provide to our clients, giving them the resources that are usually the reserve of much larger companies." ■

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Just what the doctor ordered

IT networks are playing a significant role in the management and delivery of health care services that are often spread over wide areas and used by millions of people.

St. George's slays the downtime dragon

These days if the network is down for more than four hours, hospitals start to divert patients and shut down services. So when St George's Healthcare NHS Trust decided it could no longer afford to patch its old desktop estate it went to tender for a robust and reliable network.

The hospital's 33-strong IT team manages 5,000 desktops and over 160 applications, including pathology, electronic patient records and picture archiving and communications systems.

"We wanted a one stop for everything: network, storage, compute, desktop virtualisation, BYOD, and so on," says Kerman Jasavala, St George's deputy director of ICT.

The contract went to Cisco. It was based on a medical-grade network using *CNAB* (*Cisco Network Architectural Blueprint*) for the NHS, and was implemented by approved partner Block. The solution builds on St George's existing Cisco infrastructure plus the vendor's enterprise network architecture and unified computing system (UCS). These form a secure end-to-end platform for BYOD and VDI in a healthcare setting, and includes Cisco IP telephony, which replaces a legacy system.

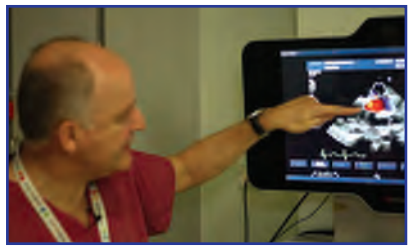
The system serves more than 7,000 staff who look after a local population of 1.3m and deliver specialist services to some 3.5m. Its main site, St George's Hospital in Tooting, has 900 beds, and it also provides community services through a smaller 100-bed unit and 11 health centres.

Jasavala says: "We needed to make a step-change. People were working across more sites, and mobility was becoming increasingly important, especially for clinicians who needed reliable access to do their jobs efficiently wherever they were."

There are now more than 2,000 BYOD/VDI users. The trust believes the only exceptions may be back-office workers for whom mobility is less of an issue.

Jasavala says they are using the *Cisco AnyConnect* client and a VMware *View* client that together allow users to self-provision. If the user is running a Mac or Windows PC, logging on involves two-stage authentication with a text token.

The platform provides consistent mobility including session persistence, regardless of device or location. Medical teams have bedside access to files, test results, and reports, improving the quality and safety of patient care. Although lower opex was not the main driver, it is emerging. Further savings will come from digitising paper records, and other clinical programmes will see electronic prescribing and clinical documentation.



Telemedicine saves doctors 1,300 hours per year

A remote HD video system used during cardiac operations is saving consultants and nursing staff at Evelina London Children's Hospital thousands of hours a year, allowing them to treat more patients and provide a higher standard of care.

The hospital treats 100,000 children every year, including 6,000 for heart problems, and has earned an international reputation for cardiology, receiving patient referrals from around the world.

"Our cardiac surgeons are currently performing almost 500 operations per year," says Dr John Simpson, consultant paediatric cardiologist. "For cardiologists to be physically present for all 500 is very challenging. We wanted a more efficient means to see the scans being performed in the operating theatre."

The enterprise team at Evelina London worked with Polycom to apply video collaboration technology in the hospital's operating theatres. The cardiology consultants can now share high-quality images and collaborate in real-time to make informed decisions more quickly while the patient is in theatre. This reduces operation times, especially the time patients spend under anaesthetic, a key factor in hastening post-op recovery.

Using a Polycom *RealPresence Group 500* system and a Philips ultrasound cart enables theatre staff to transmit clear data and scan images in full HD to one of several review stations within the hospital. Using the Polycom personal video collaboration system, the remote on-service consultant can review the same scan data as the surgical team sees.

"Normally, if a senior cardiologist is needed to review scans in theatre, then the on-service consultant needs to scrub, change into theatre clothing and go into the operating theatre," says Simpson. "This takes around 90 minutes and may compete with other clinical commitments on the ward, intensive care unit or talking to parents. The new remote system cuts the time needed to around five minutes."

The new system ensures patients have quicker operations, diagnosis by the most senior doctors, and spend less time under anaesthetic. The system is also said to have saved an estimated 1,300 hours of consultants' and surgeons' time each year – with even more efficiencies gained in nursing services and support.

"Staffing costs have been significantly reduced and consultants can cut the time it takes to prepare to enter an operating theatre," says Simpson. "The time they save can be used to help more sick children and their parents."

Leeds NHS trust goes paperless for staff records

A hosted paperless records system from EMIS Web has enabled one of England's biggest NHS occupational health (OH) services to save time and improve healthcare. The Leeds Teaching Hospitals NHS Trust's SEQOHS-accredited department is responsible for the occupational health for more than 25,000 staff and students at several sites including Leeds General Infirmary and St James's University Hospital.

The Occupational Health Service has to keep records on a multi-disciplinary team of medical and administration staff. Anyone treating a patient may have several interactions at multiple sites, and each event has to be recorded in the employee's file. OHS business manager Andrea Hildred says: "We desperately wanted a system that would enable authorised team members to access and update an employee's OH file safely, securely and in real-time.

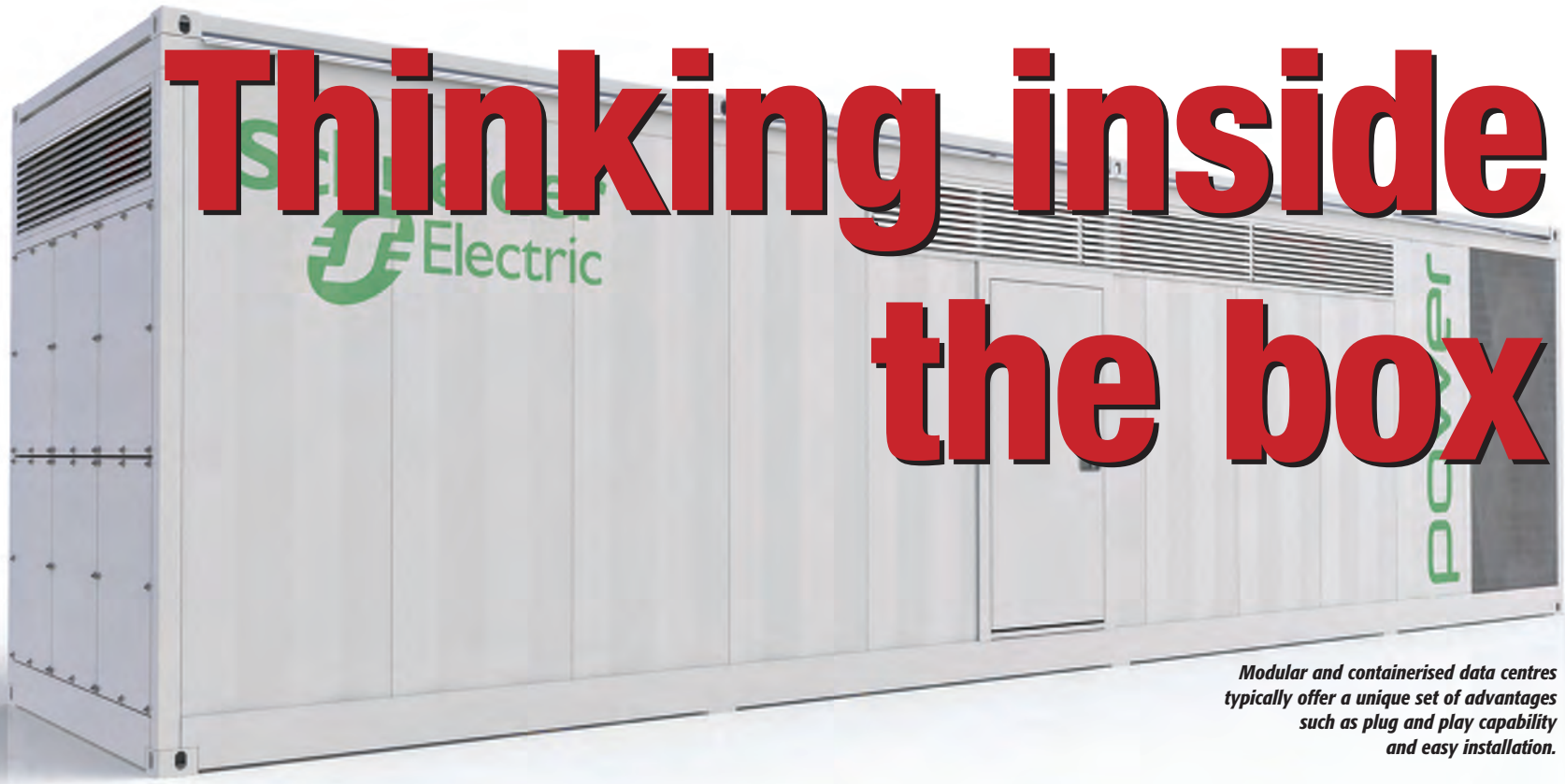
Hildred says that with EMIS Web the process is quicker, safer and more accurate than paper records because the templates drive consistency and information gathered is in real-time. The system enables the department to react better to emergencies. "For example, we support staff who are exposed to blood. In these situations, enabling team members to update immediately the affected individual's file is fantastic because of the need for speed and accuracy."

Hildred says preparing clinics is one of the service's biggest tasks. This means getting each attendee's file, ensuring clinicians have the right details, and updating individual employee files with notes and actions. "With EMIS Web, we spend much less time on prep because the data is there in a centralised hub."

The time saved means the system is effectively self-funding. It is also highly adaptable, enabling the organisation to create bespoke templates and reports.

The OH team is now looking at linking EMIS Web to an online health screening programme for assessing the health of student doctors and nurses.

Thinking inside the box



Modular and containerised data centres typically offer a unique set of advantages such as plug and play capability and easy installation.

Modular data centres are growing in popularity. RAHIEL NASIR rounds up some of the latest products and looks at their unique benefits.

Modular data centres continue to grow in popularity. In a white paper published last year, *(Assessing the cost: modular versus traditional build)*, DCD Intelligence said that in both established data centre markets such as France, the UK and US, as well as the emerging BRIC nations, data centre operators have reported growing investment in modular technology over the last few years *(see figure 1)*.

So what exactly is a modular data centre (MDC)? In the same white paper, DCD Intelligence says the concept traditionally referred to ISO shipping containers which are deployed as standalone 'data centres in a box', complete with all the necessary IT, power and cooling technology. It adds that these containerised data centres continue to be used to support disaster recovery and temporary IT projects, which was why they were originally developed.

Over time however, DCD Intelligence says a distinction has emerged between 'containerised' and 'modular' data centres: "In contrast to containerised data centres, [we] understand a modular data centre to be a data centre design based on prefabricated, pre-tested modules assembled in a custom-configured manner to form a complete solution, ideally defined by software.

"Although data centre modules are delivered to end users in a pre-assembled form, with hardware and software components already fully-integrated, it is common for power modules to be deployed alongside data centre modules as separate plug-ins."

Schneider Electric says that a lack of standard terminology for describing modular approaches has made selecting the appropriate type difficult. It says that data centre systems or sub-systems pre-assembled in a factory are often described with terms like 'prefabricated', 'containerised', 'modular', 'skid-based', 'pod-based', 'portable', 'self-contained', 'mobile', 'all-in-one', and more. "There are, however, important distinctions between the various types of factory-built building blocks on the market," it says.

In a recently released white paper (*Types of prefabricated modular data centers*), the firm aims to eliminate ambiguity between the various form factors in the market, and proposes a standardised set of definitions for the growing categories of modular and prefabricated data centre products and solutions. It suggests a framework that, in addition to helping define and categorise different types of modular and prefabricated data centre equipment, seeks to act as a guide for choosing the best approach for customer installations based on their business requirements. "Understanding the limitations and benefits of each form factor helps ensure the optimal approach is selected. Ultimately, business needs around speed of deployment, scalability, space constraints, capacity, and cash flow drive the decision," says Schneider.

And when it comes to such business needs, MDCs do indeed offer organisations a variety of unique benefits.

What's on offer?

Barcelona-based AST Modular has been trading for 15 years and claims it was one of the first companies to provide modular and containerised data centres (CDCs). It says their advantages include: reduced capex; plug-and-play capability; portability; fast time to market; energy efficiency; and easy installation. It adds that its CDCs are highly secure, pre-engineered facilities that feature heavy duty, anti-vandalism construction, and provide an "optimal" DC environment for servers in any location. Furthermore, they're scalable – modules for chillers, generators and vestibules (for example) can be added on; containers can be stacked vertically; and by combining building blocks, large scale modular deployments can be achieved, says AST.

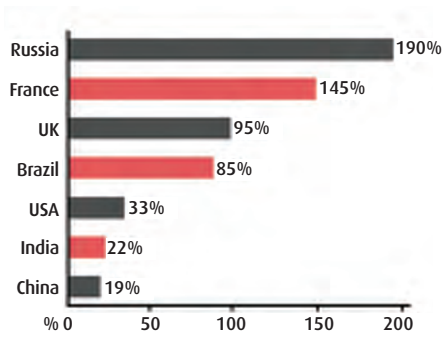


Figure 1: Increase in investment in modular data centre technologies, 2011-2013.
SOURCE: DCD INTELLIGENCE

The firm also offers non-ISO MDCs. These are longer and wider than CDCs and are available in 25ft and 40ft configurations. They have no internal rails and therefore have more internal clearance space. AST says that they feature the same benefits as CDCs and can be combined for scaling up.

A third option offered by AST is the *DC Modular Room* (*DCMR*). It describes this as an "IKEA type" flat-packed kit that features fireproof partitions to enable organisations to build a DC room either within an existing building or outside it. The shelter panels are installed on site and are certified against water, fire and dust. AST adds that they are thermally insulated, energy efficient and "highly" robust.

In January 2014, Schneider announced the acquisition of AST Modular, adding the Spanish company's capabilities to it its own extensive line-up of prefabricated data centres. Schneider itself claims to have set a new standard in prefab DCs with 14 new modules and 12 new reference design that were launched in November. It says the reference designs provide details for complete data centres, scalable in 250kW to 2MW increments and complying with Uptime Tier II and Tier III standards.

According to the company, the new modules deliver IT, power, and/or cooling integrated with "best-in-class" data centre infrastructure components, and its *StruxureWare* data centre infrastructure management software for an "easy-to-deploy, predictable data centre". The vendor adds that its modules range in capacities from 90kW to 500kW and are customisable to meet end user requirements.

"Prefabricated data centres enable data centre managers to maximise the speed of business through rapid installation, easy expansion and improved cash management," says Kevin Brown, Schneider's VP of data centre global offer and strategy. "This prefabricated approach inherently increases the predictability of the build process, since most of the construction occurs in a factory instead of in the field."

Schneider claims that with its launch of the industry's first complete library of prefabricated reference designs, data centre managers now have a pre-engineered starting point to realise three significant improvements. These include:

- Speed of deployment: prefab modules are delivered on-site pre-configured and pre-tested for an easy installation with a lead time of 12-16 weeks, depending on the level of project complexity. Site preparation and module production can be completed concurrently, resulting in minimised on-site construction and deployment time
- Flexibility and scalability: various module options and configurations enable the infrastructure to be deployed and scaled as needed to meet demand. Capex reductions result from eliminating complicated new construction or expensive building retrofits
- Predictability: prefabrication and factory testing reduces human error and on-site construction risks while improving compliance, safety, and efficiency. Design and manufacturing are closely coupled to greatly minimise uncertainty which results in more predictable performance of the data centre infrastructure.

Colt is no stranger to the prefab market and launched its first MDC in 2010. Like its rivals, the entire *Colt Modular Data Centre* – including all power and cooling elements – is constructed and tested in approved manufacturing facilities before being transported to its final location.

At the time, Colt said: "This innovative

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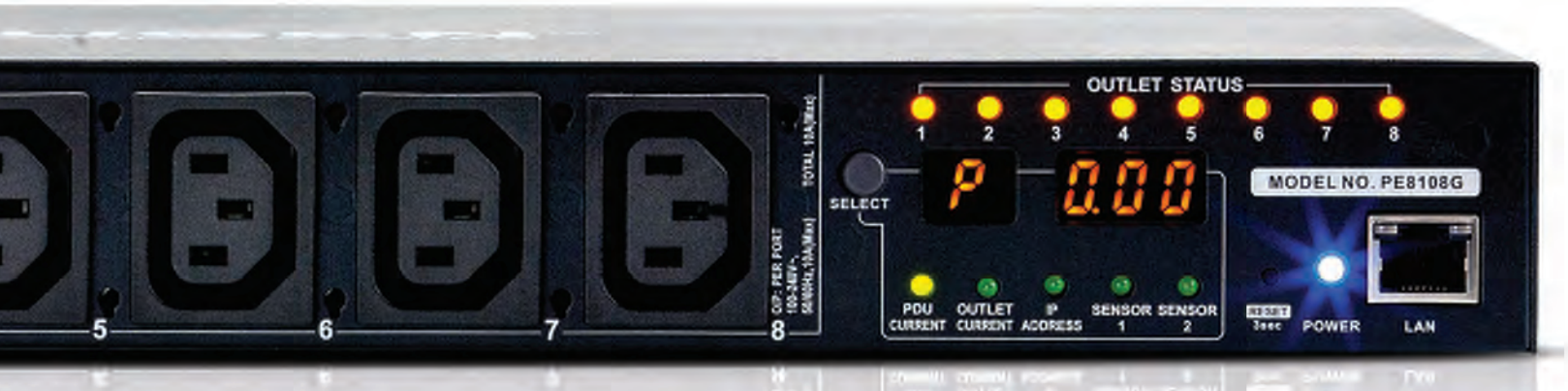

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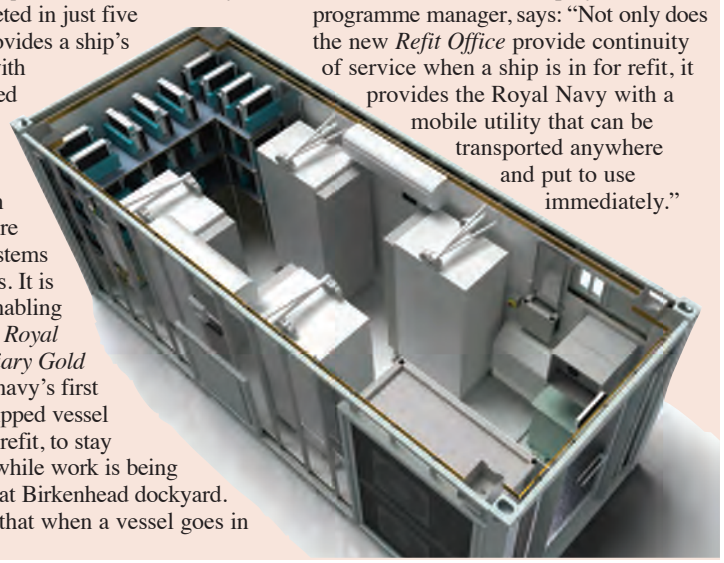
Container helps to keep Navy's systems afloat

Royal Navy crews can continue to work as normal while their vessels are being refitted with a portable data centre, thanks to a containerised server room supplied by the ATLAS Consortium.

The containerised solution was developed by ATLAS in conjunction with STS Defence as well as the MoD's Defence Information Systems and Services. ATLAS is a collaborative team that includes Cassidian, CGI, Fujitsu, and HP which was systems integrator and lead contractor on the project.

The consortium designed and built a secure and fully functional server room in a 1,169 cubic feet container. This compact *Refit Office* (*pictured*), which HP says was completed in just five months, provides a ship's company with uninterrupted access to the MoD's Defence Information Infrastructure (Future) systems during refits. It is currently enabling the crew of *Royal Fleet Auxiliary Gold Rover*, the navy's first DII(F)-equipped vessel requiring a refit, to stay connected while work is being carried out at Birkenhead dockyard.



HP says that when a vessel goes in for refit, its nodes and equipment are "decanted" into the *Refit Office* while the crew works in four interconnected portable cabins. The container's four racks can be configured to meet a wide range of computing needs. Two of the smaller Maritime Type 2A nodes – each of which has up to 24 user access devices (UADs) and peripherals plus supporting servers – can be kept fully operational and connected to the outside world via satellite using Inmarsat's *FleetBroadband* service. The system has been designed to be easily and inexpensively upgraded to support the larger Maritime Type 2B nodes.

In addition, the mobility and resilience of the containerised solution enables the MoD to use it in a far wider range of situations and locations around the globe. Paul Johnson, HP's DII deployed maritime programme manager, says: "Not only does the new *Refit Office* provide continuity of service when a ship is in for refit, it provides the Royal Navy with a mobile utility that can be transported anywhere and put to use immediately."

approach will allow us to deliver highly power-efficient, turnkey data centre halls to customers in less than four months, whilst offering the flexibility to build large-scale data centres in 500m² increments to the size and layout of their choice. We will reconstruct and commission the data centre – all within four months, approximately a third of the time required for a conventional build in the market."

The firm added that its MDC has a design target PUE of 1.21, thus driving down the overall costs of operating a data centre through decreased power usage. Colt's initial offering included a range of power and cooling options, with the minimum base configuration capable of 750kW power and 1500W/m² power density for a 500m² hall. Its MDCs can also be joined and double-stacked to suit the customer's capacity needs.

HP is another big name vendor that specialises in prefab data centres. It first came to our attention three years ago when it worked with Airbus and claimed to have doubled the aircraft maker's usable super-computing power with the implementation of two containerised *Performance Optimised Datacentres*. The *POD*s enabled Airbus to quickly expand data centre capacity, boosting computing performance for aircraft development while saving space and energy. At the time, the deployment gave Airbus the 29th biggest computer in the world according to the official *TOP500 Supercomputer* list released in June 2011.

Each *POD*, installed at the customer's sites in Toulouse and Hamburg, contains servers, storage, networking, software, management, and integrated power and cooling. HP said that a total of 2,016 clustered *ProLiant BL280 G6* blade servers enabled the two 12 metre-long containers to deliver the equivalent of nearly 1,000m² of data centre space. The firm added that compared to an installation in a nearby customer data centre, its water-cooled *POD*s consume up to 40 per cent less power – with a "near-optimum" PUE rating of 1.25, Airbus was able to decrease operating expenses while delivering power capacity in excess of 15KW/m².

In a more recent deployment last November, HP announced that the Royal Navy was using a CDC while its vessels are being refitted with a portable data centre *(see Container helps to keep Royal Navy's systems afloat, left)*.

November also saw the release of Cannon Technologies' latest configurable and expandable ISO-compliant self-contained data centres. Available in 6, 12 and 13.5 metre versions, Cannon says its MDCs are shipped mission-ready and available for clients to quite literally "switch on and go".

The firm adds that the new units include its *CP-M* Series of advanced three-phase modular power protection as a standard integrated feature. It claims this advanced version of its UPS module helps to reduce single point of failure and mean repair time, as well as increasing site power availability wherever the MDCs are located.

Cannon explains that a key feature of the UPS function is support for plug-and-play battery facilities, allowing the power feed to continue to protected equipment while batteries are being replaced. On top of this, the vendor says the units support up to 95 per cent power efficiency (and up to 98 per cent in eco mode) with an integrated power capacity as high as 800kVA using four 200kVA cabinets in parallel. This modular power flexibility is said to allow users to scale their power and runtime options as demand grows, or as and when higher

levels of availability are required.

"Thanks to the use of 1.4 metre (five modules) and two metre (10 modules) 19-inch standard cabinets, clients can enjoy access to standard-sized rack data centre-style cabinets with a capacity of 10/15/20kVA in just three units of space," says Cannon engineering manager Mark Awdas.

He adds that the composition of the racks can be built completely to the customer's specifications, as well as to a pre-configured design that is available to be carefully drop-shipped to the user's site in a relatively short timescale.

Should you go modular?

According to US-based Active Power, which specialises in modular power systems, the benefits of an MDC approach are "so great" and the variety of products "so wide", that it believes every data centre build or expansion project should evaluate a modular approach. However, its adds that there are a number of key questions that data centre operators should ask before engaging with a modular supplier as these will help avoid costly mistakes.

While Active Power emphasises that its experience has shown that MDCs have thrived in a number of scenarios, the level of benefits will vary depending on the particulars of the project. Jay Cantu, the vendor's product manager for modular infrastructure solutions, says: "We have also seen several proposed deployments that turned out to be poor fits for modular solutions after thorough evaluations, especially with outdoor containerised solutions that present unique challenges. While these issues can be overcome, they need to be considered in the total cost of the deployment and may swing the cost analysis."

Cantu explains that the common reasons to reject a modular deployment include: incompatibility with local building codes; lack of available outdoor space; difficult and/or expensive access to usable space during installation (i.e. staging, craning, rigging, etc); and difficult and/or expensive connections to power, water, cooling, etc.

He also points out that in the past, customers typically built out all of the physical infrastructure they believed they needed and then held off on populating the data centre with racks and servers as they waited for their customer base to grow.

"While prudent, operators still need to fund the cost of the land, design and architecture, and construction of their entire physical shell before a dollar of revenue comes in. A modular approach enables the customer to expand the physical infrastructure, power and cooling infrastructure, and IT load at blocks of capacity based on their actual growth needs. Customers are then able to defer large capital outflows normally incurred at the start of the project into more palatable stages." *(See figure 2 below.)*

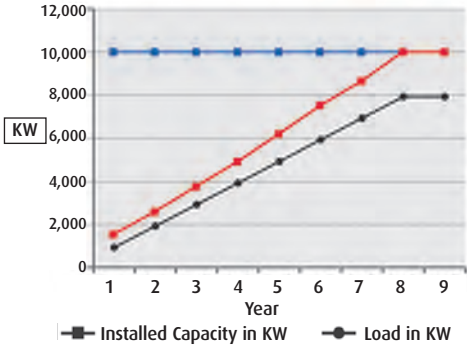


Figure 2: Scalability of modular design (red) versus conventional build (blue). According to Active Power, a modular design enables data centre owners to start small and deploy 'right size' units of IT and/or power capacity, deferring large capital costs until capacity is needed.

Cantu goes on to point out that one of the advantages of a modular implementation is that site preparation and offsite modular construction can occur simultaneously. He reckons that this can almost make the lead time of the modular equipment "irrelevant" in that the modules can typically be built in less time than the customer can obtain a construction permit, perform preliminary site work, and pour concrete pads. However, it should also be kept in mind that skilled engineers and contractors will still required to complete the installation.

"Although factory testing will alleviate much of the problems usually incurred, the fact remains this is still an on-site construction project with site inspections, third-party agents, and authority having jurisdiction approvals. The modular approach helps to improve, but does not eliminate, the required interactions and involvement of all of these entities," says Cantu.

He also stresses the importance of choosing an experienced modular supplier: "While the initial idea of stuffing electrical equipment into a one-time use shipping container seems like a way to save money, we have found that experienced modular packagers prefer to build purpose-built enclosures." Cantu says that such enclosures can then be easily integrated and sized according to local standards, regulations and certifications.

Furthermore, he says many inexperienced modular packagers find out the "hard way" about the structural integrity of the enclosure when the unit is populated and craned onto a truck for delivery."Weight distribution and centre of gravity play a large role when the item is in the air. Experienced riggers and the appropriate hardware are needed to ensure the enclosure is not damaged when being loaded onto a truck."

Finally, with the unit on site, Cantu says experienced vendors usually deploy a project manager who attends meetings and aids in the planning and installation of the site infrastructure required for connectivity of the modular components.

So is the MDC the data centre of the future?

HP says large mission-critical data centres housed in brick and mortar buildings are "rapidly" running out of capacity, and that new builds are expensive, typically taking up to two years. If that's the case, a 'data centre in box' that offers quick deployment, scalability, energy efficiency, and cost savings seems like a no-brainer. The prefab and modular DC looks set to become a trend that cannot be contained. ■

Getting your head around the cloud means that all the disparate cultures of IT find a common language to share experience and really begin cooperation.

Stairways to heaven – training for the cloud

Management has decided that your company's future lies in the cloud. So how does IT go about retraining? JAMES WALKER says a global cloud training strategy is urgently needed, and explains why the CloudEthernet Forum should play a key role in setting its agenda.

The ICT universe is like those astronomy photos of vast nebulae in collision: every now and then great systems converge and grow chaotic before settling down to some sort of new order.

In the 1990s it was 'Bell-heads' meet 'Net-heads'. Here, one communications culture , built around message-dedicated physical connectivity, collided with a whole different culture that believed in chopping everything into tiny packets to be shaken through a sort of network mesh until it all came out the other end. In the 2000s it was WAN hits LAN – until they learnt to speak the common language of Ethernet. Now, with cloud computing, it's networking meets data centre and… CRUMP!

It has been said that networking people don't understand IT, and data centre people don't understand networking. At one level this statement is absurd and pretty insulting – of course the IT staff know plenty about networking and vice versa. But it does a highlight a difference which is rather like trusting your life to an experienced pilot versus someone who has read all the flight manuals. Each knows enough about the other to serve their own discipline, but that is not the same as the wisdom of experience and a comprehensive grasp of a highly complex system or environment.

When LAN met WAN, the former group had a simple answer for every issue: just give it more bandwidth. It took them time to really come to terms with WAN's Classes of Service and traffic routing concerns.

These examples already reveal one important fact about cloud education: it requires more than just telling people what they need to know to fill the gaps in their understanding. The real education comes once the disparate cultures find a common language to share experience and really begin cooperation. How can this best be achieved? To begin with, let's take a look at some of the pressures that are driving the demand for cloud training.

Changes in the IT department

As companies migrate to cloud-hosted services, a lot of existing maintenance, repair and upgrade services will also move to the cloud provider. At best, this will free-up support personnel to focus on more important IT projects. Of course, it could also make them redundant. But experienced IT staff are always in demand, so it will be wiser to give them more cloud training to meet the growing demand for cloud specialised consultants, developers, and architects. Indeed, as companies get a hunger for new cloud-hosted applications, the emphasis will shift from support to innovation – particularly in the area of mobile and handheld computing.

There is little doubt that cloud computing – by shifting from a capex business model to the pay-as-you-go opex model – is so much more attractive to today's fast evolving business environment. But security is still a dominant concern for cloud novices, raising a significant demand for training, either to ensure that data stored on the cloud is protected and meets industry-specific regulations, or else simply to get a better understanding of the risks in order to inform better business decisions. There will also be a need for more education on private cloud creation, management and inter-working with public services.

Search for 'cloud training' on the internet and you'll see there are already plenty of courses available to meet the above demands. But upon closer inspection, you'll notice that they are very fragmented. Typically, it is the big vendors or user groups offering sound, practical training based around their preferred product portfolio. What is harder to find is a globally recognised cross-platform standard, a practical vocational equivalent of an MIT or Cambridge degree in Cloud Computing.

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Lacking in definition: One of the problems of defining cloud computing is that the industry itself has yet to come up with a standardised definition. Such a standard will be a major leap for the sector and for training within it.

This again boils down to the fact that we do not yet have a common language – these different groups do not even have consensus on what they mean by the term 'cloud'. We are still at that peak in the 'hype cycle' where you can be pretty sure that someone, somewhere will be offering expensive weekend courses on "Cloud Consciousness" or "Find your Inner Cloud".

A model for re-education

So far, all this is looking rather negative. But we did find one recent example where a similar collision of cultures was managed and resolved in reasonable time to the benefit of the whole industry – and even to the greater benefit of the global business and public service communities. Taking the WAN meets LAN collision, 'Ethernet' became the common language and is still bringing these two cultures into cooperation. This didn't happen by chance, but rather because the MetroEthernet Forum (MEF) played a very active role in promoting Carrier Ethernet. It is worth revisiting how this was achieved.

The MEF began with a group of Ethernet vendors who saw an opportunity to extend Ethernet from the LAN into the metro space, with the benefits of simpler, unified connectivity. Their first step was to cooperate, bringing competing companies together to decide common standards so that a 'Metro Ethernet' marketplace could develop rather than a scattering of incompatible metro solutions.

The second step was a recognition that the concept had far greater potential beyond the metro space, and the Carrier Ethernet brand was launched as a global connectivity solution. The lesson here was the realisation that this couldn't happen without the collaboration of carriers and service providers. So the MEF launched a major recruitment drive to get commitment from a broader spectrum of WAN stakeholders.

The Carrier Ethernet brand provided the common language between the LAN and WAN communities – so the real learning was now taking place, thanks largely to the MEF's globally recognised definitions and specifications.

"Writing and creating definitions will build the dictionary of terms needed to ensure that cloud training courses grow beyond niche skillsets and become recognised for qualifications with universal value."

James Walker, President, CloudEthernet Forum

The third step was to speak to potential customers and reassure them that they could safely adopt these new services (and at a time when uncertain economic conditions were making the industry highly risk-averse). Certification programmes were launched for equipment and for services, a guarantee that all this would at least 'do what it says on the tin'. The resulting uptake became the telecommunications success story of the decade. By 2012, Carrier Ethernet sales had outstripped the sum total of all legacy WAN technologies combined.

This has been followed by further certification: the *MEF Carrier Ethernet Certified Professional* (*MEF-CECP*) programme that offers a basic Carrier Ethernet education plus an examination and a certificate of acceptance.

So the question is this: how relevant is this process to today's convergence of IT and networking in the cloud? Should the CloudEthernet Forum (CEF) plan a similar path to promote cloud services through education and standardisation? After all, although the MEF and CEF have some overlap in terms of membership, the two forums do have different members and serve quite different groups: network-oriented staff as opposed to data centre, cloud and application-oriented staff.

Is this the way for the cloud?

The first point of similarity is that Carrier Ethernet and the cloud both incorporate a collision between cultures of the sort already described. And both create a very fast-growing market – even more so in the case of cloud services. Like the collision of giant nebulae, such explosive market growth could easily lead to a Tower of Babel scenario of competing, incompatible solutions and market fragmentation. So the first two steps described above could be

even more urgent for the CEF: the need for cooperation between potential competitors to develop a common language between the IT and networking worlds, and a corresponding need for commitment from every type of cloud stakeholder to make sure the common standards develop truly universal appeal, across both network and applications.

Writing and creating definitions will build the dictionary of terms needed to ensure that cloud training courses grow beyond niche skillsets and become recognised for qualifications with universal value. It also gets the IT and networking stakeholders talking and cooperating faster for a smoother transition into cloud services. Certification helps consolidate this common language by giving it a tangible form in a wider business community, guaranteeing interoperability of defined services across multiple suppliers.

That will naturally lead to the creation of a professional training programme: a course of training, an exam, and globally recognised certification for a certain level of expertise in cloud computing and services. One lesson from the MEF experience is that – in the face of explosive market growth – the initial courses are likely to be more business than technology focused.

In other words, it would be foolish to begin the programme by competing with the many available proprietary cloud technology training courses, because the technology is still very fluid and common ground is yet to be established. What is first needed is the common language and level of technical understanding to be able to speak to the marketplace and offer sound advice on cloud choices and decisions. So any initial CEF professional training and certification will be targeting the sales community. More specific technical training can follow as common technical standards emerge.

Another lesson the CEF can learn from the MEF's experience is that clearer labelling is needed to reflect the ways its solutions evolve. The MEF specified "Carrier Ethernet" but the technology kept evolving as new definitions were laid down. Later features, such as multiple Classes of Service, were not available for the early adopters and so the Carrier Ethernet market was becoming less clear about 'what it says on the tin'. In retrospect, it adopted the IT version labelling convention and announced "CE 2.0" to distinguish today's state-of-the-art Carrier Ethernet from retrospectively labelled earlier standards as "CE 1.0."

To avoid such confusion, you will hear the term "CloudEthernet 1.0" being used to describe the initial Ethernet standards for the cloud, while the common language is being developed.

What now?

So how does IT go about retraining given management's decision that the company's future lies in the clouds? Almost certainly there will be a need for some specific technical training either from your main networking and data centre vendors, or from a training body targeting their customers. However, we have already agreed that it is important for any large organisation not to lose sight of the more important long-term need to get IT and networking talking a common cloud language.

Until the CEF launches its own vendor-neutral certification programme, there's a lot to be said for any major stakeholder becoming directly involved with our work (which is currently focused on CloudEthernet 1.0 and its principal use cases), agreeing a shared set of architectural principles, and building a common and consistent dictionary of terms.

The main business concerns about cloud migration are not about technical detail so much as general issues around , security, loss of control, accountability, or privacy leakages. Addressing such broad issues requires a similarly broad understanding.

So again, the recommendation is first to encourage as many people as possible to gain a wider understanding of cloud computing and how networking, applications, virtualisation and hardware all must work in harmony to deliver a seamless cloud service. Remember too, that current IT networks include many legacy systems that are not compatible with cloud deployments.

Building a firm foundation for a global cloud future

Training is essential for any organisation's successful deployment of cloud-based solutions, and that knowledge has to be multi-disciplinary. I believe that the CEF must play a leading role in defining a standards-based platform to support interoperability of the different layers and sub-systems manufactured by different vendors, with elements that may be geographically distributed and which can belong to different cloud environments (public, private or hybrid).

In addition, a carefully designed professional training and certification programme – with an initial emphasis on building a common language and cross-discipline understanding – will help build a group of recognised experts across the industry. Only then will we have the shared knowledge, experience and skillsets to increase efficiency and speed deployment of CloudEthernet, and so provide a firm foundation for a global cloud future. ■

This article is a summary of the notes taken during a meeting with CEF members to discuss the issues surrounding cloud training. The main contributors were: Phil Tilley, senior director of Alcatel-Lucent's IP portfolio strategy; Dan Romascanu, director of external standards for Avaya; Dr Hongwen Zhang, president and CEO of Wedge Networks; and Henry Bohannon, senior director and head of Ethernet product management at Tata Communications. My apologies for not ascribing individual contributions.

off-the-shelf: UPS

Power savers

Uninterruptible power supplies can not only keep businesses up and running, they can also help save money, too.

Eaton's new modular double conversion three-phase UPS units feature power ratings of up to 200kW and are said to combine "market-leading" energy efficiency with scalability and vertical and horizontal redundancy.

The firm claims its *93PM* units deliver energy efficiency of up to 97 per cent while providing flexibility for increased demands, thanks to their modular design. This is said to make it easier and cost-effective to scale the system as load demands change without increasing the carbon footprint, thus enabling users to reduce capex and take a 'pay-as-you-grow' approach.

The new devices have been included on the government's Energy Technology List (ETL), allowing buyers to qualify for a 100 per cent rebate claim against tax.

The ETL, which is set up by The Carbon Trust, is designed to help tackle climate change by granting special status to products that meet the criteria, as well as rewarding those companies that invest in the approved products.

Products listed under the ETL are eligible for the government's Enhanced Capital Allowance scheme for meeting specific energy saving criteria. The scheme allows users of ETL approved energy-saving equipment to claim 100 per cent of purchase and installation costs against tax in the first year.

Emerson Network Power has launched the *Liebert APS* UPS with *FlexPower* technology. It claims the system can achieve up to 92 per cent efficiency in double-conversion mode, making it one of the highest efficiency UPSs in its class.

The *Liebert APS* is designed for small to medium sites that expect increasing power requirements as they upgrade to larger servers, add storage capacity, and use more powerful processors to meet growing demand for resource-intensive applications.

FlexPower modules allow capacity to grow in 5kVA/4.5kW increments up to 20kVA/18kW. Battery modules may also be added as needed to increase backup time. *FlexPower* and battery modules are hot swappable, and can be added or replaced seamlessly, says Emerson.

The device can be installed in any data centre or network environment – on raised or non-raised floors, or in standard rack enclosures. Three 'IntelliSlot' ports allow multiple modes of communication and control. It is compatible with Emerson Network Power's *Trellis* data centre infrastructure management system, as well as Liebert's *Nform* and *SiteScan* monitoring and reporting systems and with MultiLink shutdown software.

To enhance system availability, the *APS* has a fully redundant design. This allows the critical load to run on conditioned power regardless of any single failure within the system. Power needs of up to 20kVA/18kW are also supported. It has a wrap-around maintenance bypass so the connected load can keep running while the system is being serviced. Modular scalability also allows users to add capacity quickly or backup runtime to support changing power needs without shutting down.

Following early investment in 3-Level IGBT technology, **Socomec** has introduced new 250kW and 500kW models in its *DELPHYS Green Power 2.0* range. It's claimed that this enables the line-up to reach 96 per cent efficiency in Voltage Frequency Independent (VFI) mode. As a result, the range complies with environmental protection standards, saving energy without compromising on performance.

With its unity output power factor (PF=1) the new units can provide users with full-rated 500kW power in accordance with IEC 62040-3, bringing total power capacity to 4MW. This makes the new *Green Power 2.0* suitable for the most demanding data centre applications, says Socomec.

Combined with a set of dedicated services and energy efficiency solutions, they are suited to co-location facilities or public clouds, as well as large data centres. The new units, which are lighter and smaller and lose less heat, are also said to be suitable as an integrated critical power solution with Socomec's containerised *Smart PowerPort* system.

Tripp Lite has expanded its healthcare line with the introduction of the new high-capacity *SMART2500XLHG* UPS system. It is designed to protect medical equipment in patient care areas from damage and data loss while providing full compliance for patient shock protection.

The *SMART2500XLHG* UPS offers a 2200VA/1920W load capacity, the highest of any Tripp Lite medical-grade UPS system to date. It features full line isolation and leakage current reduction to less than 100 microamps for optimal safety.

The vendor says that full isolation also provides continuous noise filtering and enhanced common mode surge suppression to safeguard equipment. The system is claimed to be ideal for devices requiring medical-grade protection and leakage current reduction, limiting cumulative leakage current to less than 100 microamps.

Advanced automatic voltage regulation corrects brownouts and over-voltages without using battery power, while USB and DB9 communication ports work with included *PowerAlert* software to enable remote monitoring and control. NEMA and IEC C13 outlets are also included for universally adaptable outlet options.

Uninterruptible Power Supplies Limited (**UPSL**) has unveiled the *PowerWAVE 9500DPA*, which it claims is the only modular UPS that can scale efficiently to 3MW of clean, reliable power.

Designed for mission-critical data centre applications, the *PowerWAVE 9500DPA* is engineered for high-power, modular and transformerless UPS operations, and is said to provide amongst the lowest total cost of ownership and highest energy efficiency measures in its class.

The device can scale vertically in 100kW steps to provide up to 500kW of power in a single frame. Horizontal scalability is also possible, with up to six frames in parallel, to increase total power to 3MW. UPSL says this means there's no need to over-specify the original configuration; modules and/or frames can be added to optimise the power needs and increase/decrease power to meet future requirements. This ability to "rightsize" reduces capital expenditure, optimises operating efficiency and helps reduce total cost of ownership, says the firm.

It adds that the UPS delivers 96 per cent true online efficiency (>99 per cent in eco mode) to cut running and air conditioning costs. Decentralised Parallel Architecture technology also means each UPS module contains all required hardware and software for full system operation, maximising availability. Frontal electrical connections ensure easy installation and maintenance.

Skyscape seeks students for cloud scheme

Skyscape Cloud Services has launched a new undergraduate placement programme. The scheme, open to sandwich degree students, has been designed to help develop the skills and experience that are needed when working with large-scale cloud and virtualised computing environments.

Skyscape offers on-demand and accredited cloud computing services aimed at public sector organisations. It claims to be developing one of the UK's largest cloud computing platforms, and says it has experienced "significant" growth since it was formed in 2011.

As part of its new placement programme, the firm has created up to 10 roles for outstanding candidates in cloud operations and development. They include operations analysts, automation engineers and portal developers. Skyscape says the scheme will help it to scale its business and nurture technology skills across multiple disciplines.

The programme is initially being offered to undergraduates as a sandwich placement, but successful candidates could be considered for longer term employment. The first undergraduate, studying Computer Digital Forensics at Portsmouth University, has already joined Skyscape's operational support team for a one-year placement. There is also the opportunity for successful applicants to gain further professional qualifications from Cisco, EMC and VMware.

Data Centre Alliance names new SVP for training

The Data Centre Alliance (DCA) says it has elected six of the industry's "most powerful and respected chiefs" to its board of governors. They include Rob Coupland as senior vice president for training and skills.

Coupland (*pictured below*) is said to bring more than 15 years experience to his new role, and is currently MD at TelecityGroup. He has also worked with NTL and Cable & Wireless.

Coupland will build on his involvement with the recent DCA Graduate Bootcamp *(Network Knowledge, Sep 2013)* to establish links with schools, universities and commercial training organisations, and ensure that the industry can avoid the currently forecast skills shortage.

The DCA says his appointment complements TelecityGroup's corporate initiatives to facilitate apprenticeships in the technology sector throughout Europe.

How to deploy SIP

Following the launch of its dedicated SIP trunk service, Nimans has produced a 12-page guide that outlines many of the key areas needed for successful SIP deployment. Among the topics covered in the booklet are data bandwidth requirements, the number of trunks needed for deployment, connectivity criteria, SIP benefits, management considerations, *et al*.

The firm, which claims to be the UK's largest distributor of telecoms and data equipment, says the recent launch of its own SIP trunk service provides resellers with 'more control' and access to a complete range of network-based products and expertise.

Mark Curtis-Wood, the firm's head of network services, says there's a right way and a wrong way of doing SIP: "Resellers need to understand what the client wants, put a solution together and deliver it to them. The guide is part of this ethos, a key building block in helping resellers identify and capitalise on market opportunities especially at the SMB level. We want to open their eyes to the huge potential."

NEW COURSES

Intensive Wireless Communications Course & WCET exam – IEEE Communications Society (ComSoc)

ComSoc is currently offering a combination package for its wireless communications course and the Spring 2014 *Wireless Communication Engineering Technologies Certification (WCET)* exam. The five day course will be taught online via *WebEx* on 17-21 March. It covers all seven areas tested in the *WCET* exam including: RF engineering, propagation and antennas; access technologies; network and service architecture; network management and security; facilities infrastructure; agreements, standards, policies and regulations; and fundamental knowledge.

ComSoc recommends candidates have a degree from an accredited institution and three or more years of graduate-level education or professional experience. It says the programme is also suitable for professionals with an engineering or technology background.

www.comsoc.org/training

Best Management Practice Portfolio with PRINCE2 – BCS & QA

IT training expert QA and BCS, the Chartered Institute for IT, have partnered to deliver *PRINCE2* as part of the full *Best Management Practice Portfolio* (*BMP*) by AXELOS – the joint venture between the Cabinet Office and Capita.

BMP comprises *ITIL* and the *PPM* portfolio of certifications which includes *PRINCE2*. The BCS says that by teaming up with QA, it can now offer a complete learning pathway for IT and project management professionals, enabling career progression and "clear validation" of their skills.

The BCS adds that it offers an extensive range of professional certifications with more than 60 internationally recognised certifications in 11 key subject areas.

www.bcs.org/bmp

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