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# European court says data retention directive is invalid

by Ian Grant

ISPs have been told to keep collecting electronic message metadata despite a European Court of Justice (ECJ) recently ruling that the European Data Retention Directive is invalid.

The ECJ acknowledged the usefulness of communications data in fighting crime, but it held that the directive did not spell out who could access the information and how they could use it. It said in practice data collection and retention was disproportionate to the main aims of fighting serious crime and terrorism, and at the current maximum of two years could be stored for too long.

The Home Office told *Networking+* that ISPs should continue to “observe their obligations” under the Data Retention Regulation 2009 that was originally

brought in to give effect to the directive. It is still considering its full response to the ECJ’s decision, but believes its position is compatible with the European Charter and the Convention on Human Rights.

In a Parliamentary written reply on 28 April, Home Office junior minister Karen Bradley told MP Julian Huppert: “The retention of communications data is absolutely fundamental to ensure law enforcement have the powers they need to investigate crime, protect the public and ensure national security.”

Now that the ECJ says the Data Retention Directive is and has always been invalid, the Home Office’s position appears inconsistent with the law, according to some industry sources. It declined to comment on speculation that the

government will have to introduce primary legislation to confirm the state’s power to collect communications data. It’s thought that such a move is unlikely given the differences between the government’s coalition partners, and an election looming.

Also at issue is the process whereby ISPs are paid for answering requests for the data. Authorities used the facility more than 550,000 times last year. The Home Office said the capital and running costs of implementing the regulation are “not available publicly”.

ISP Association secretary general Nicholas Lansman adds: “It is crucial that the EC and Home Office provide guidance and clarity to industry.”

Privacy watchdog the Information Commissioner’s Office believes that the ECJ’s judgement is important. However, it is waiting for the government’s official response before finalising its position, possibly in the next few weeks. ■

**Government data collection legislation could come off the rails following the invalidation of the European Data Retention Directive.**

PHOTO: IAN GRANT



## Capita acquires SWAN partner Updata Infrastructure for £80m

Capita has acquired network services provider Updata Infrastructure for £80m on a cash- and debt-free basis. Updata will become part of Capita’s IT services division. Capita CEO Andy Parker said the acquisition will strengthen his firm’s network capability.

Updata employs 160 people at six UK offices with a head office in Reigate. It provides a range of networking and connectivity services, mainly to public sector clients. The company is forecasting an operating profit of £5.6m on turnover of £41.8m in its financial year to 30 June 2014. For the 12 months to 31 December 2015, Capita expects Updata to generate operating profits of around £12m on revenues of about £74m. ■

Capita and Updata have worked together in Scotland since October 2011 on contracts for local authorities in West Dunbartonshire, North Ayrshire, Fife and East Lothian.

More recently, they teamed-up for the framework contract to deliver the £120m Scottish Wide Area Network (SWAN), a single public services network for all Scottish public service organisations that could be worth upwards of £325m over nine years (*also see News, Jan 2014*).

More than 4,600 sites will be connected to the initial network. These include GP surgeries, hospitals, pharmacists, schools and local council offices. SWAN is expected to save taxpayers an estimated £300,000 a month. ■

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See page 4 for more details




# Red tape hinders government deals for SMEs

Small IT companies are finding it harder to access the £14bn per year public sector market, according to the Office of Fair Trading (OFT). It says they are being hindered by overly complicated rules, costly and time-consuming security procedures, and a bias towards the incumbent suppliers.

The OFT's investigation into market concentration, high barriers to entry and high switching costs focused on two main areas: outsourced IT and commercial off-the-shelf software. Its report, published in March, found that SMEs faced "key barriers" when challenging the traditional oligopoly of big players, and added that the government's G-Cloud strategy was at the heart of the issues.

G-Cloud was launched to simplify procurement and to make it easier for SMEs to provide services for the public sector. But the OFT has been told that accreditation could take a year and cost £200,000.

In October, the Home Office said there were almost 1,200 suppliers on G-Cloud, 84 per cent of them SMEs. Cumulative sales from the *CloudStore* to September were £53.5m, with 58 per cent of the total spend going to SMEs (*see News, Nov 2013*).

Peter Groucutt, MD of cloud infrastructure and disaster recovery specialist Databarracks, says that although some SMEs have won business through G-Cloud, there is still work to do to ensure a level playing field. Calling



**Databarracks MD Peter Groucutt says that while G-Cloud offers a new way for SMEs to get into the market, there are those who will fight to maintain the status quo.**

for a "big culture change", he said that while G-Cloud is a new way for the public sector to buy IT and for SMEs to get into the market, there are those who will fight to protect the status quo. "The big incumbent [system integrators] have been profiting from the situation for years. They are the ones with the

large sales teams and public sector business units to promote their services, whereas until now SMEs have had no need to do this.

"Organisations will continue to buy their services the way they always have unless they are given tangible reasons why they should switch. Making this kind of impact takes investment in marketing."

In addition, Groucutt says the *CloudStore* needs improving: "The 'search' functionality doesn't work properly which means when an organisation goes to search for a service, it doesn't get back exactly the results it should. When that happens, [users] will most likely just revert to using the suppliers they are most familiar with." ■

## Three in four firms risk IT disaster

Almost three-quarters of firms worldwide are under-prepared for an IT disaster, according to the 2014 benchmark study from the Disaster Recovery Preparedness Council (DRPC). It also reveals that poor planning, testing and technological deficiencies cost an average of more than \$5m from the failure of critical applications, data centre outages and data loss.

The DRPC says 73 per cent of the organisations it surveyed are not taking adequate steps to protect their data and IT systems. Its poll of more than 1,000 firms ranging from SMEs to large enterprises, found that two-thirds of corporate disaster recovery (DR) budgets are too small; six-in-10 have no DR

plan, and of those that do, a quarter have never tested it. Only 33 per cent said they test their plan once or twice a year, but more than 66 per cent of them did not pass.

The study also reveals that three-quarters of those questioned have suffered outages of critical applications, costing from a few thousand dollars to over \$5m. More than a quarter lost data centre functionality for weeks at a time. Most are responding by building better plans to recover applications, networks and business services, including primary and secondary sites, and recovery targets for time and functions. The use of automated tests for recovery are also being used more frequently. ■



A computer graphic of London Gateway. Its connectivity options are said to be "superb" with round-trip latency to The City of around 0.2 milliseconds.

## Gateway DC one of the "most capable" sites currently available

High levels of connectivity are expected for the new London Gateway Data Centre (GDC) in West Thurrock. The new facility sits on a 2.3 hectare site and is housed in an existing warehouse that is currently awaiting further development.

Its developers say they have all planning permissions in place as well as connectivity and power – 30MW will be deliverable to the site from UKPN's West Thurrock Grid Sub Station. GDC will offer 8,000m<sup>2</sup> of hall space and will become fully operational 12 months after the first tenants have signed-up.

The facility is located a few kilometres from the New York Stock Exchange's disaster recovery and European Hub in Basildon. It is also just 20 metres from Fujitsu's data centre and 6,000km national fibre backbone. The centre will therefore be able to take advantage of direct connectivity via a diverse routed 'figure of eight' network through Birmingham and Leicester to Manchester, Southport and Leeds.

It's claimed this ensures direct low-latency access can be immediately available (subject to contracts) to 400 Tier 1 and Tier 2 carriers via London's Teleticity (Harbour Exchange), Teleticity (London East) and Global Switch (London East). Fujitsu's network also gives direct access to LINX and LoNAP plus easy connection to AMSIX and NLix.

The connectivity options for London Gateway are "superb" according to Charles Carden, a director with specialist property agents GVA Connect: "Diverse dark fibre routes are possible to The City of London, and estimated to have round-trip latency of just 0.19 to 0.2 milliseconds.

"The availability of BT, Colt, KPN and Cable & Wireless plus Fujitsu's IL-3 and IL-2 secure IP transit network gives access to some 400 carriers. High density computing capabilities (thanks to the 50MVA power potential) mean the Gateway Data Centre is now demonstrated to be one of the most capable sites currently available." ■

## Uni gets wireless network revamp

Facing a BYOD tsunami, Nottingham Trent University (NTU) has chosen ForeScout's *CounterACT* to provide network access control and security for its new revamped campus-wide wireless network.

With more than 25,000 students and 2,500 staff spread across three sites, NTU's wireless network accommodates about 6,000 active wireless endpoints and 10,000 'seen' endpoints. These figures are growing continually as students bring more of their own devices, including laptops, smartphones, tablets and gaming devices, onto the network.

Last year, following student requests for a simpler solution, NTU replaced its multiple fragmented networks with one integrated wireless network. Mark Pearson, the university's core networking team leader, says the previous NAC system had been hard to use and created a negative user experience. "At

today's UK universities, the student is king. We therefore had to ensure that connecting to the network is as painless as possible, regardless of the device in use," he says.

Following a review of NAC solutions available at the time, NTU chose ForeScout's *CounterACT* platform as it was easier to use than the previous system and didn't require an agent on each endpoint. "Once we connected *CounterACT* to our network, it was up and running in 30 minutes," says Pearson. "[It] is also non-intrusive to end users, which was critical, helping us to provide an inclusive and accessible network while optimising security."

After implementing *CounterACT*, Pearson says calls to the IT helpdesk dropped. He adds that its ease of management and automated mitigation capabilities have saved the university time, money and resources. ■

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# Edinburgh businesses to break BT bottleneck

Commsworld plans to unbundle the local loop at Edinburgh's Rose Street exchange. It aims to provide superfast broadband to some 2,000 businesses on the exchange following BT's decision not to include it as part of its £2.5m "superfast" upgrade.

Rose Street can offer speeds of up to 20Mbps using copper lines that were first laid 100 years ago, as well as leased line Ethernet connections up to 10Gbps. But a lot of businesses needs speeds in between those two according to Charlie Boisseau, MD of Commsworld's network division, Fluency Communications.

His firm will unbundle the local exchange network from BT this month. Using Overture's eight-pair wire-bonding Ethernet in the First Mile (EFM) technology, it will allow local businesses to access an affordable, enterprise-only internet connection with speeds of 35 to 40Mbps.

Boisseau says: "This is the ex-Hatteras technology BT has been using for years in about 700 exchanges, and which TalkTalk has used in about 3,000 exchanges. It gives you about 5Mbps per bonded pair."

Hatteras was considered to be the leader in Ethernet over bonded copper, while Overture specialises in Ethernet over TDM. The two firms merged in 2011.

Boisseau believes this is the first time local businesses will be able to get speeds normally associated with fibre but without its costs. "Firms have little chance of achiev-



**Fluency Communications MD Charlie Boisseau says his firm is unbundling Edinburgh's Rose Street exchange to give local businesses broadband speeds of up to 40Mbps.**

ing the 30Mbps internet speeds which the government has set as the 'superfast' target for businesses to flourish – unless they are prepared to shell out tens of thousands of pounds for their own fibre connection."

Commsworld set up its Fluency Network division last year to serve businesses in Edinburgh, Glasgow and Aberdeen without bouncing their data through servers in London or Manchester. More than 400 companies are already using the network. A number of firms have now also lined up to join the new Rose Street service which Commsworld believes will help boost its turnover to more than £10m in 2014. ■

# Glory for St Andrews' helpdesk

St Andrews has become the UK's first university and only the second in the world to gain 3-star certification from the Service Desk Institute (SDI) for its IT support.

The 3-star rating was awarded after an 18-month auditing programme by the SDI. It evaluates service desk operations against an internationally accepted standard for best practice, providing companies with a benchmark to form a baseline for service improvements. Each audit measures: leadership skills; policy and strategy; people management; partnerships and resources; people satisfaction; performance results; and social responsibility.

St Andrews' helpdesk supports 2,000 staff and 8,000 students through a single point of contact, and logs between 4,000 and 8,000 incidents a month. In 2013, it achieved 2-star certification from the institute, but its



**Master auditor Howard Kendall (second from right) with St Andrews' helpdesk stars (left to right): Kevin Donachie (associate CIO); Lorraine Brown (manager); and Steve Watt (CIO).**

"excellent strategy" played a major part in it gaining another star. SDI master auditor Howard Kendall says: "Quality leadership



## THE WORLD ACCORDING TO...

Damian Saunders, director, cloud networking group, Citrix

### Could development and operations be the saviour of IT staffing?

While technological progress and innovation is happening all around us, the paradox is that we've become ever more time poor. Businesses have to stay competitive. But to do so they need to do it faster with fewer staff, less budget, and at a quality better than the company next to them. Enter 'DevOps', which holds the potential to transform IT staffing much like outsourcing was expected to do a few years back.

Outsourcing helped businesses in part to become more efficient. While outsourcing works in some cases, the flipside is losing control over management, quality and security – factors some companies just aren't willing to give up. So if outsourcing isn't always the solution, why DevOps?

Until now, trends like SDN and cloud have had more of an impact on our actual IT systems than the people who run them.

But staffing costs account for the majority of corporate IT budgets, and this is where the focus should really be. IT as we know it has shifted from the simple nuts and bolts of manual maintenance to automated processes and virtualisation.

As a result, the skillsets needed to manage the technologies now being used within businesses have changed too. As the jobs that might once have been outsourced are being brought back in-house, this doesn't mean that the same people will be doing the same old work – rather the contrary.

Just as our data centres have become consolidated, so have our skillsets. We find ourselves in a time where an application delivery specialist may need equal levels of expertise in security and containerisation. Whereas 10 people might once have managed a data centre, thanks to DevOps we'll now need just one or two staff who have a more comprehensive and broader understanding of business needs and the ability to convert ideas into automation script.

These DevOps people will become the jack of all trades and thus, fewer people who have the broader skillsets can be hired. CIOs are beginning to understand that such personnel will come to add considerable value to the business.

Enterprises are already adapting to the DevOps trend. For example, after decades of offshoring, car makers are now bringing their factories back home and automating them.

Change is a constant in IT. But this is usually driven by a natural gravitation toward good science (cloud, virtualisation, etc) or towards good business sense like the operational and organisational efficiencies that typify DevOps. This positive change will certainly make jobs in the sector more interesting, while CIOs will save money and we'll all be able to achieve things faster and cheaper. DevOps could very well be the staffing saviour we've been waiting for.

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combined with a new location for the service desk, the appointment of a business relationship manager, and the implementation of a carefully planned customer experience feedback programme is clearly bearing fruit." ■

The SDI says it is Europe's only support network for service desk professionals and a leading authority on IT support issues. The other university to gain its 3-star award is Saudi Arabia's King Abdullah University of Science and Technology. ■

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## Anglo-Dutch merger covers all bases

Oncore IT has merged with Dutch specialist enterprise infrastructure consultancy, 5W Storage Services (5W). Since 2004, UK-based Oncore has focused primarily on building a multi-tenanted cloud platform operating from data centres in London and Amsterdam. It claims to have more than 100 customers in the legal, financial, insurance, retail and logistics sectors. The company hopes that its merger with 5W will now enable it to go after bigger clients in the oil and gas, shipping, automotive, government, utilities, finance and banking markets, along with IT distributors and systems integrators. ■

## Kelway lands £150m five-year Atos workplace deal

Atos, the French managed services vendor, has hired systems integrator Kelway to provide its desktop infrastructure and data centre hardware in the UK and Ireland for an estimated cost of £150m over the next five years. Atos, which has sales of £8.6bn and 76,300 employees in 52 countries, aims to cut costs using Kelway's end-to-end supply chain services and support programme. "This new partnership with Atos showcases Kelway's ability to deliver key business technologies at the enterprise scale," says Kelway CEO Phil Doye. "Working with Atos will provide another opportunity to help a successful organisation achieve competitive advantage with the right technology." ■

## Alcatel-Lucent allows hotel guests to BYOD

Alcatel-Lucent has launched a communications platform for the hospitality sector that enables smartphone users to access hotel guest services, such as concierge and billing, even before they arrive. The system is based on the vendor's *OmniPCX Enterprise* server and the *My IC Phone* client. It gives customers access to the hotel directory, speed dialling, caller ID and free internal calls when using the on-premise Wi-Fi network. There's also a click-to-call 'e-concierge' option. Multiple devices can be assigned to each guest room, automatically registered and managed as part of the hotel telephony and billing suite. ■

# Scottish fire service secures its data infrastructure from disaster

Scotland's Fire and Rescue Service (SFRS) has standardised its data management infrastructure across more than 400 locations, following a government mandate to cut costs and duplication of existing services.

After assessing its existing environment, SFRS replaced eight different backup solutions using CommVault's *Simpana 10* data management software. The vendor is helping SFRS implement its data backup and archive strategy to meet compliance and continuity requirements for mission-critical applications such as *Microsoft Exchange*, *SharePoint*, *SQL Server*, *Office* and *Oracle*.

CommScope says *Simpana 10* will increase SFRS' operational efficiency while providing nearly instant recovery of emails – something the organisation could not previously guarantee.



Created in April 2013, SFRS united more than 9,000 firefighters and support staff from eight legacy fire services in over 400 locations.

Philip van der Wilt, CommVault's VP for EMEA, says SFRS is now able to locate and retrieve emails practically on demand. "Email is increasingly recognised as a critical application, yet it seems that

companies are still falling behind when it comes to managing it effectively."

The service is using the software to provide backup and disaster recovery for Active Directory for *Exchange* mailboxes. It can customise archive rules to reflect the business specific needs of users and to automate data retention to comply with Freedom of Information requests.

Because SFRS moves large amounts of duplicate data – which needs to remain accessible for up to 21 years – *Simpana 10*'s built-in archive and search functionality is said to be valuable in terms of storage cost savings. CommScope claims that the migration from multiple backup solutions to the software delivered an immediate return on investment as maintenance costs are now significantly lower. ■

## PSU picks TalkTalk SIP EFM for surveillance centre

PSU Technology will use TalkTalk Business' SIP over Ethernet in the First Mile (EFM) technology at QVIS Monitoring's new UK surveillance control centre.

As part of a multi-year managed service deal, the systems integrator will deploy a combination of SIP and leased lines to handle QVIS' voice traffic in a high availability and secure architecture. TalkTalk's solution will be delivered using the operator's dedicated business SIP network that terminates on a secure managed session border controller.

PSU will retain full control of the network configuration and setup. This will enable it to self-manage the deployment without TalkTalk Business' input, controlling network capacity, volume of concurrent

calls, number presentation, and the import/export of DDI numbers in virtual real-time. TalkTalk Business assurance will be available round the clock, including a nine-hour SLA.

PSU MD Michael Lounton says: "We can self-manage service capacity and configuration, which helps us to respond almost immediately to any changes in QVIS' requirements. This greatly enhances the service we're able to offer them."

A subsidiary of CCTV distributor Adata, QVIS provides remote status, location and alarm monitoring services. Its new surveillance control centre will be used



QVIS CCTV monitoring system will use TalkTalk's SIP over EFM technology for voice traffic in its new control centre.

to monitor, manage and react to incidents on behalf of customers nationwide.

The UK SIP market is worth £100m per year and is growing at an annual rate of 20 per cent, according to Jon Nowell, head of product management at TalkTalk Business. He adds: "Now the market has matured, it's no longer enough merely to talk about cost-savings over traditional ISDN; the real value to a business comes from introducing SIP as part of a converged network strategy." ■

## MTI gives financial firm just "one throat to choke"

System integrator MTI is now responsible for security solutions at Mondrian Investment Partners. The international financial management firm's IT department now has a single point of contact and a more focused workstream for security management.

As part of a four-year deal, MTI has already replaced 80 regional servers with two sets of virtual ones to simplify and

protect Mondrian's IT estate. Under a renewed contract, MTI will now also handle security systems for the company.

Mondrian CTO Paul Fournel says the "evolution" was a logical step in the partnership. "In addition to giving me peace of mind, sharing the management of our IT security requirements with MTI will allow my team to adopt a much more proactive, rather than reactive, approach. The project

has been delivered on time and on budget and simplifies our security management."

Fournel adds that "having one throat to choke" as part of single sourced solution offers a huge advantage. "It is not only easier to manage but it allows my team to focus on their prime objective, that of developing and supporting investment applications. The quality of MTI's people means that I know we are in good hands." ■

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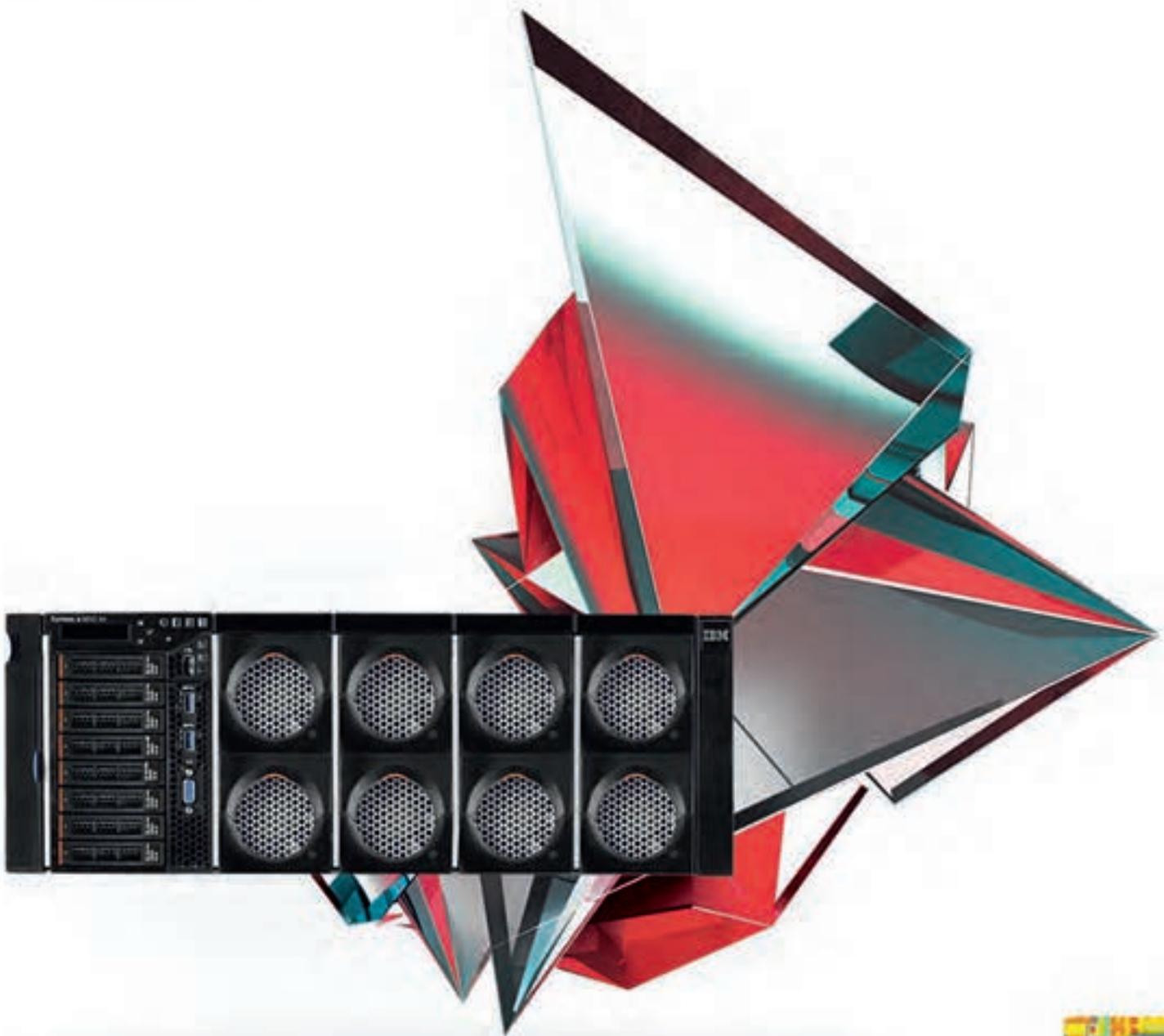
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# CloudEthernet Forum begins work to develop CloudE 1.0 framework

The CloudEthernet Forum (CEF) has begun vital work on defining the CloudE 1.0 standards.

Speaking at Interop in Las Vegas at the end of last month, CEF president James Walker, said: "What are the basic standards that need to be met for a workable Cloud Ethernet service? The industry must decide a set of vendor-neutral networking criteria without which cloud services cannot realistically be supported. This is a co-operative process."

Walker said the CEF now planned to recruit the "brightest brains and most experienced practitioners" to lead each of

the five fundamental areas under which its work is currently grouped. It describes these areas as 'VASPA' – virtualisation, automation, security, programmability and analytics (see News, Dec 2013).

The CEF has already begun developing reference architecture for cloud definitions, and is also in discussions with existing standards bodies to make sure that its work is in alignment with theirs. The aim this year is to decide initial and fundamental criteria for Cloud Ethernet which will be called 'CloudE 1.0'.

Walker said that all this work was "vitaly important" to avoid cloud fragmentation.

"The shift to cloud computing is as fundamental and far-reaching as the shift from mainframe to personal computer that did so much to boost business in the eighties. But initially what hindered the transition was the rapid fragmentation of the PC market into rival operating systems.

"The same could happen to cloud services under rival cloud providers – unless we can define standards for an industry-wide global open cloud environment. CloudE 1.0 is our first step on the path to the open cloud."

The CEF also announced the creation of its Open Cloud Project at Interop. This will



**CloudEthernet Forum president James Walker said an industry-wide cooperative approach to creating standards is vital to avoid cloud fragmentation.**

focus on creating an open test and iterative standards development programme for service providers, industry vendors and over-the-top cloud service providers. Initial work will be focused on three areas: application performance management, cloud security and traffic load balancing. ■

## Oxford NHS to save over £1m with hosted telephony service



Oxford Health NHS Foundation Trust is expecting to save more than £1 million in costs over five years by replacing four existing phone systems and exchange lines with a cloud-based service from Vodafone.

The new system will cover up to 140 sites in Oxfordshire, Buckinghamshire, Wiltshire and Somerset, with a total of 3,000 phone extensions. As well as cutting costs, Vodafone says the move to an off-site

**Vodafone says the move to a cloud-based system will enable Oxford Health NHS Foundation Trust to simplify telephony services for all users.**

hosted service will enable the trust to focus ICT resources on frontline patient care. It will also benefit from a system that is able to scale flexibly so that phone lines can be increased according to demand.

Dominic McKenny, director of informatics at Oxford Health, says that the trust was looking to reduce its telecoms spend, redirect the resources to more productive activities, and simplify the service for all users. "For example, even if a patient rings the wrong trust number, the new system will allow their calls to be forwarded to the correct service quickly and easily. This is

particularly critical within a mental health setting, when callers may be in distress and need to speak to a clinician urgently."

Vodafone says while it has around 700 public sector customers using its cloud and hosting services, Oxford Health is the first NHS body to install its hosted telephony service. It adds that the system also provides a "good foundation" for further innovation as the trust looks to implement better ways of working and drive improvements in the provision of mental health and community services. ■

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## Partners to deliver end-to-end virtual services for government

Informed Solutions and Skyscape Cloud Services have teamed-up to offer an integrated portfolio of professional and technical services to the public sector. The two firms say their joint offerings will help users to assess, re-design and transition their ICT estates and services onto the cloud.

The alliance combines Informed Solutions' methodologies and experiences in developing cloud strategies with Skyscape's IL3 'pay-as-you-go' hosting services. They aim to work together to offer organisations complete, end-to-end solutions, from cloud suitability assessments, service redesign and migration through to infrastructure and platform services, ongoing support, and management.

Skyscape CEO Phil Dawson says some government bodies have complex or very specific requirements and can be unsure about whether or how to migrate to the cloud. "Our partnership with Informed Solutions means these customers can work with a highly respected consulting firm that are experts in developing cloud-based service strategies, but also have the technical capability to deliver the service migration and ongoing support," he claims.

Informed Solutions adds that by allying with Skyscape, it aims to better serve government clients that are working towards delivering improved operational efficiency while reducing costs through the "intelligent" use of cloud computing. ■

## State spying hurting the cloud

A third of IT security professionals do not store corporate data in the cloud because they fear government snooping, according to a recent study by Lieberman Software.

In a survey carried out at the RSA Conference 2014 in San Francisco, the firm assessed the attitudes of nearly 280 IT security professionals towards cloud security. It found that concerns over state spying discourages 33 per cent from storing sensitive data in the cloud, while 80 per cent prefer to keep such data within their company's own network.

"IT managers are aware there is very limited data privacy in cloud environments and they therefore prefer to keep their most sensitive assets on premises," says Philip Lieberman, CEO, Lieberman Software.

"Another issue is legislation in the cloud and the fact that IT executives do not want governments probing into their corporate data. If a government or official body wants to see what data a company is holding, the cloud host involved is legally obliged to provide them access."

Despite the enormous impact of the NSA scandal, Lieberman believes that trust in the security of the cloud has actually increased over the last year. When the firm undertook the same survey in November 2012, 48 per cent of respondents were discouraged from using the cloud because of fears of government snooping, while 86 per cent preferred to keep more sensitive data within their own network, rather than the cloud. ■

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# Keeping energy and water flowing

Utility companies need to keep the nation powered and watered around the clock. As a result, networking technologies play a crucial part in underpinning all their services.

## Networking with the enemy

When E.ON was looking for a network company to connect its expanding wind farm estate to its head office, it made a surprise choice – a rival firm.

E.ON needs constant real-time contact with its remote wind farms in the Scottish Highlands to ensure optimum performance and reliability for its five million UK customers. That requires a guaranteed continuous connection between its wind farm estate and its Nottingham HQ.

It is now working with SSE Telecoms which owns one of the UK's most extensive fibre networks. SSE is providing E.ON with a national Carrier Ethernet MPLS VPN, internet access and extended telephony services, using microwave to complement the fibre backbone.



However, SSE Telecoms is part of the SSE Group – a rival energy firm that also provides electricity, gas and water services to around 10 million customers. Its telecoms division provides telephony and data services to all 20,000 staff at the group, and all that experience proved invaluable for E.ON.

Katie Ireland, SSE Telecoms' marketing manager, says: "As we are both an energy generator and telecoms company, E.ON trusts us to understand its business challenges and deliver critical infrastructure support services to ensure an absolutely minimal risk of downtime. This sense of shared responsibility makes this a truly winning partnership. We understand and appreciate how important a wind farm connection is. Because of that background and experience we are a perfect telecoms provider."

"SSE Telecoms is its own company and we do not share data within the group. We're a 'wires-only' operation, so we focus on delivering the fully meshed, highly available network that connects E.ON's alternative energy generation sites, while E.ON supplies and manages all the higher level apps."

Ireland says that other than power, communications is the second most

important thing for a wind farm – without telephone lines and internet access it cannot communicate information about the energy generated and other related activity. Without this, E.ON could neither trade its product nor feed it into the national electricity grid.

"The network means E.ON can manage its expanding wind farm estate in the Scottish Highlands with confidence. We guarantee that the critical communications systems that control and live-monitor each site are always available, no matter how remote the location or how bad the weather."

## AREVA nukes mobile bills with BT's help

AREVA, the French nuclear generation equipment supplier, is using the UK as the springboard for its global thrust into renewable energy. With 48,000 staff in more than 100 countries, it was keen to control and cut its telecoms costs, particularly mobile.

Roaming charges were already 30 per cent of the bill and growing dramatically, and as users adopted smartphones, data usage soon made up 26 per cent of costs.

AREVA needed to decrease spending quickly. It also wanted to respond quickly to future developments in mobility to minimise usage and expenditure. With the renewal of its existing mobile phone contract imminent, the company called in BT to help prepare its RFP: target – to cut 40 per cent off the mobile bill.

Consultants from BT Mobility used the telco's *Mobile Telecom Expense Management (MTEM) Quick Start* service to analyse AREVA's mobile estate and provide an accurate baseline model of usage for the RFP. Jean-Baptiste Quelquejay, head of services and information systems for AREVA says: "We were looking for a proven packaged approach for analysing mobile usage and BT *MTEM Quick Start* met requirements."

After working through the Christmas holidays, AREVA issued the RFP in January. Three operators responded. BT helped the firm analyse and respond quickly to the different proposals, and to appoint a new operator at highly favourable tariffs that helped AREVA cut its mobile bill by 45 per cent.

"By sharing its experience of negotiating mobile contracts for other organisations, BT strengthened AREVA's credibility with suppliers and gave us greater leverage in negotiations. Because BT is not a mobile operator we knew its advice would be impartial and for our benefit," says Quelquejay. "As a result we have gained new insight into our mobile fleet. For example, we discovered more

users in more countries than we thought we had. And BT's expertise has helped us to exceed our savings target."

AREVA's new corporate mobility policy also encourages more cost-sensitive end user behaviour by, for example, sending monthly bills to employees to increase their awareness of mobile expenditure.



## Helping to keep Yorkshire Water cool

When Yorkshire Water built its new data centre in Bradford in 2011, the design of the power and cooling infrastructure needed to be modular, allowing stepped growth from a predicted day one technical load of 150kW to a future level of 320kW. Efficiency was a key design element in order to meet both environmental and financial objectives.

According to Bury St Edmunds-based EcoCooling, many data centres consume as much electricity in their cooling systems as in their servers. The firm says its CREC (Computer Evaporative Cooler) system can reduce cooling costs by 95 per cent and produces a PUE of under 1.1.

During an initial phase, Yorkshire Water deployed six EcoCooling CRECs which each provide up to 30kW of air cooling. During cool conditions, incoming air is warmed by mixing the hot exhaust air with the cold air from outside. In warm conditions full fresh air is used, and in very hot conditions, evaporative cooling is enabled.

EcoCooling says the maximum relative humidity is controlled using its unique dynamic RH control. It claims that the input air will not exceed 80 per cent, thus offering full compliance with ASHRAE standards.

Electrically commutated (EC) fans are used for the supply and extract. These are said to provide the best efficiency with full speed control. EcoCooling adds that the control system minimises fan speed according to changes in room temperature which ensures that the "absolute minimum" energy is used by the system.

In addition, a Schneider/Crouzet PLC (programmable logical controller) system consisting of a master and slave arrangement provides a resilient control system. During a fire alarm for instance, the standby DX cooling system is automatically enabled, and the system also provides a suppressant gas purge facility.

Furthermore, EcoCooling says that remote control and monitoring is provided through a local network and is fully integrated with all other functions. Operating mode and set points can all be managed remotely, and operating parameters and faults are also reported.





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# Unlocking the security conundrum

**Cloud is now mainstream and yet concerns about security still hamper wider scale deployments. RAHIEL NASIR finds out how to dispel the fear, uncertainty and doubt.**

Cloud computing has achieved mainstream deployment in the UK according to the Cloud Industry Forum (CIF). Last autumn, it surveyed 250 senior IT and business decision-makers and found that 69 per cent had formally adopted at least one cloud-based service – an eight-point increase since the forum conducted its first survey in 2010.

But while the CIF believes that cloud is now accepted as a “viable IT deployment model”, it adds that data security still ranks as the highest concern. Amongst those who had adopted a service, 69 per cent said that this was uppermost in their minds during the decision-making process to migrate, whilst data privacy and the dependence on internet access was a worry for 51 and 37 per cent of respondents respectively.

Cloud, connectivity and colocation specialist C4L says security often comes up right at the start of the discussions it has with customers. “It gets asked much earlier than when people come and talk to us about just putting their own equipment into a data centre. There’s a bit of nervousness from them about trusting all their data to somebody else for the first time,” says marketing manager Gary Barter.

He adds that moving to the cloud gives a lot of companies an opportunity to take stock of their security settings and to do it right for the first time. IaaS provider Databarracks agrees. It believes that as cloud technology has matured, so has the customer’s level of understanding.

Citing evidence from its annual *Data Health Check* study published earlier this year, Databarracks says firms are no longer stalling in the face of security concerns, with many proactively implementing policies to overcome their anxieties. For example, the study – which surveyed over 400 IT pros from UK-based organisations – found that 64 per cent are considering, or have already put in place, an official policy restricting employee use of consumer cloud services such as *iCloud* and *Dropbox*. Forty-three per cent are also reviewing their security policies in light of last year’s PRISM revelations (see *News*, Jun 2013).

“Security is always going to be the major priority for those considering a move to cloud services, as you are often trusting a third party with your company’s most sensitive data,” says Databarracks’ MD Peter Groucutt. “However, the difference highlighted in our research is that organisations are no longer seeing this as a roadblock, but rather an opportunity to review their current security practices and implement effective new policies that protect their data and enable a more confident move to cloud services.

“We hear the blanket response of ‘we can’t use cloud services because they aren’t secure’ far less than we did even 18 months ago. That is a good indication of the increasing maturity of the UK market. IT departments have moved on from the ‘general’ concerns of cloud security and are looking at more specific issues.”

Some of those issues include a lack of understanding over basic data protection. For example, the *Data Health Check* revealed that more than two thirds of respondents didn’t know the legal limits on the amount of personal data an organisation can hold, while 80 per cent were unaware of the restrictions on moving data outside of the EU.

Groucutt says it is also worth pointing out that security is not black and white: “Organisations will benefit from realising you don’t have to encrypt everything (which, according to our research, 33 per cent of organisations currently do). Cloud service providers [CSPs] need to do more to help focus organisations on the real issues, like the specifics of when and where encryption is needed, and help them to stop worrying about general cloud security, which often causes unnecessary barriers to adoption.”

Barter adds that what people often don’t understand is that the scare stories they hear don’t necessarily apply specifically to cloud: “They haven’t yet made the connection that it’s not just cloud that’s insecure – it’s having any unprotected data that’s insecure. When people say cloud is not secure or ask how

secure is it, we almost have to turn the question round and say what is it you’re trying to protect against? Are you trying to protect against brute force attacks from the internet? In which case, data on your improperly secured laptop at home is just as insecure as sticking it on Amazon’s cloud somewhere.”

## No cooperation, no standards

What’s long been needed when it comes to cloud security are globally agreed industry standards – and that’s exactly what the specialist trade bodies are now pushing for.

For instance, as well as announcing work to define its CloudE 1.0 standards (see *News*, p6), the CloudEthernet Forum (CEF) has also created the Open Cloud Project. This aims to develop an open test and iterative standards development programme for CSPs, vendors and over-the-top (OTT) service providers.

Initially it will focus on security as well as traffic load balancing and application performance management. According to the CEF, the project’s open test programme will lay the groundwork for a fully inter-working cloud environment, and the advancement of best practices to manage OTT and cloud services.

Nan Chen, president of the Metro Ethernet Forum which is a close affiliate of the CEF, says: “Network security and application performance management are two critical areas for future work. The Open Project is intended to create an open test process for NFV, SDN and Carrier Ethernet applications. We also plan to work in conjunction with other relevant industry forums to maximise efficiencies and avoid any duplication of work.”

The CEF believes it is vital for the industry to work together on developing standards, as cloud services rely on the end-to-end interoperability of so many different players: “Unless we can define industry best practices and global standards to establish an open cloud environment,

cloud services run the risk of becoming more and more fragmented and difficult to integrate,” warns James Walker, CEF president and VP of managed services for Tata Communications.

Other industry bodies agree. For instance, the Cloud Security Alliance (CSA) is supporting the *CUMULUS* (*Certification infrastructure for Multi-Layer cloUd Services*) project that was set up early last year by various partners from Europe’s scientific and industrial communities. The project’s aim is to develop an integrated framework of models, processes and tools to support the security certification of IaaS, PaaS and SaaS. The CSA will contribute expertise from its research products (such as the *Governance, Risk management and Compliance Stack* toolkit), to help define the model, process and mechanisms. It will also help to validate scenarios, and publicise *CUMULUS* activities.

In a separate initiative announced last September, the CSA teamed up with business standards company BSI to launch the *STAR* certification programme (see *News*, Oct 2013). It describes this as a “rigorous” third-party independent assessment of the security of a cloud service provider. The technology-neutral certification is based upon achieving ISO/IEC 27001 and the specified set of criteria outlined in the CSA’s *Cloud Controls Matrix*. Its 11 controls areas cover: compliance; data governance; facility security; human resources; information security; legal; operations management; risk management; release management; resiliency; and security architecture.

The CSA points out that while no accreditation can ever guarantee data is 100 per cent secure, the combination of ISO/IEC 27001 and *STAR* certifications ensures a cloud provider has an appropriate system for the type of information it is handling. Databarracks’ Groucutt adds: “Accreditations like these are a good indicator that a cloud service provider follows strict and regularly audited security policies. To reassure

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The BSI says an information security management system (ISMS) such as ISO 27001 ensures businesses understand the risks to their data, and can be confident that they have the right policies, procedures and controls in place to protect them. BSI risk specialist Suzanne Fribbins says: "The beauty of ISO 27001 is that it takes a risk-based approach, resulting in an appropriate and affordable level of security. It is therefore suitable for SMEs through to large corporates."

She adds that BSI pioneered the development of the world's first ISMS (BS 7799) which went on to become ISO 27001. The standard is now part of the ISO 27000 series which, according to



**ForeScout says its CounterACT appliance offers real-time visibility into all devices on their network without the need for agents.**

Fribbins, provides best practice recommendations on information security management, risks and controls within the context of an overall ISMS.

The suite also includes ISO 27033, a multi-part standard, that provides detailed guidance on implementing the network security controls specified in ISO 27001.

Another new standard in development within this suite is ISO 27044 on Security Information and Event Management. This seeks to improve an organisation's information security posture by showing them how they can take relevant data, produced in multiple locations (logs, etc),

and look at it all from a single point of view in order to spot trends and see patterns that are out of the ordinary.

## Are your nuts and bolts safe?

While industry bodies such as the BSI offer a more 'holistic' view of security, other infosec specialists warn about ignoring the individual nuts and bolts of the network.

Citing a recent Arbor Networks report on infrastructure security, Infoblox says that more than a third of companies fell victim

to a DDoS attack on their DNS last year. "Despite this, over a quarter of businesses don't assign formal responsibility for DNS security," says EMEA technical director Chris Marrison. "Employed by all IP-connected devices, DNS translates domain names into IP addresses. Therefore, even the purchasing department, for example, can inadvertently put an organisation's DNS infrastructure at risk when buying domain names."

Marrison believes lack of clarity over who is responsible for DNS is one of the key reasons DNS security is often compromised across organisations. In a number of cases he says only very few, technically-trained employees understand the workings of the DNS, but these are not the staff who deal with it on a daily basis.

"DNS has continually evolved to become the core component of the internet, yet the general lack of vigilance across organisations makes it an easy and attractive target for cyber criminals. DNS can be targeted through cache poisoning, protocol and man-in-the-middle attacks, tunnelling, domain phishing and DoS/DDoS attacks. Moreover, firms are not only at risk of falling victim but of also becoming an accessory in someone else's attack."

Marrison goes on to say that DNS traffic tends to be filtered less vigorously than other types of traffic, such as web or email, as it is one of very few services to be almost universally allowed through firewalls. In sharp contrast to web traffic which is funnelled through perimeter proxies, the majority of network operators do not inspect DNS traffic or keep detailed audit trails for DNS lookups.

Infoblox claims to have developed the industry's first DNS appliance capable of protecting itself. By "intelligently" integrating security directly into a DNS appliance, the vendor says its *Advanced DNS Protection* system delivers a depth of defence against DNS attacks that is "far more robust and insightful than relying on a jumble of separate devices and services".

Marrison adds: "By recording and analysing statistics, administrators can examine their data for query rates, socket errors and other attack indicators, while distributing external authoritative name servers helps to avoid single points of failure. Cloud-based DNS providers can also be configured as secondaries for an organisation's own."

CSPs could also bolster their networks using dedicated software. For instance, digital security specialist Gemalto claims its recently launched *Protiva Cloud Confirm* offers a strong authentication software system for service providers. It says the "user friendly" and "easily deployable" SaaS platform enables robust, multi-factor authentication, and enhances the security and convenience of overall cloud computing for corporate customers.

*Protiva* also includes a mobile one-time password application and security token, as well as what Gemalto describes as a "state-of-the-art", multi-tenant authentication server for the highest level of data protection. The vendor reckons that its complete end-to-end solution enables self-service end user activations, significantly reducing the need for helpdesk calls related to password resets.

"For CSPs, this value added service can often represent a substantial reduction in costs," claims Gemalto. "*Protiva Cloud Confirm* ensures the trust that brings peace of mind to users, which is essential for mainstream adoption of cloud services and the BYOD movement. The hosted services ecosystem is constantly evolving, and Gemalto's solution offers form factor versatility for identity authentication in addition

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to a detailed reporting platform for CSPs to monitor user activity and account creation.”

BYOD is clearly a big security headache for network managers. Louise Bulman, VP of EMEA for network security specialist ForeScout, says its rise has led to an exponential jump in the number and type of devices connecting to the network. “IT organisations don’t have visibility into these unmanaged personal devices using their traditional management and security tools. They have a visibility gap – you can’t secure what you can’t see. This leads to security gaps, and security practitioners often spend an inordinate amount of time tracking devices, users and applications.”

Bulman goes on to identify two other big security challenges that CIOs and IT managers need to address. Firstly, there is inadequate collaboration between an organisation’s existing IT security systems which tend to operate in silos. As a result, these systems often don’t have the information context needed to perform optimally. Secondly, she says these systems lack adequate automation for quick mitigation of security risks to keep ahead of cyber attacks and exposures – most of the security controls are reactive and mitigation is manual.

“IT security professionals need to put in place automated tools and processes that address these issues and allow them to move to a model of continuous monitoring and mitigation, thus reducing their organisation’s risk exposure.”

According to Bulma, ForeScout’s *CounterACT* platform gives IT organisations real-time visibility into all devices on their network – managed or unmanaged, wired or wireless and BYOD – without the need for agents.

“*CounterACT* enables security professionals to manage and automate a variety of tasks based on contextual data about users, devices and applications along with the enforcement of predefined policies. For example, it allows for streamlined onboarding and management of devices.

“It also offloads routine tasks such as guest registration, ensuring all users have the most current software and that anti-virus and other security agents are installed, configured and running on all systems connecting to the network.”

This frees-up precious IT resources allowing the security team to focus on more strategic initiatives.”

She goes on to explain that using ForeScout’s *ControlFabric* interface, *CounterACT* shares the real-time data it obtains about devices and users with other IT security systems, making them context-aware and enabling them to make smarter security decisions. Existing data gathering and alerting IT security systems can also use the interface to trigger automated endpoint- and network-level risk mitigation actions using the ForeScout platform.

### Cloud confidence

Few would disagree that the industry needs to define what cloud security should look like and then adhere to it. “In the same way that everybody has a different idea

of what a cloud is, what a secure cloud is also varies widely,” says C4L’s Barter. “Clarity will help people move forward.”

Databarracks supports the view that there is confusion. For instance, Groucutt says that when comparing IaaS and the ongoing hosting of workloads with cloud-based disaster recovery (DR), the security concerns should be the same. “When you failover to a DR environment, the two services are almost identical. Yet, security is often seen as a bigger issue for IaaS than cloud-based DR.”

What does remain clear is that security will always take centre stage when it comes to cloud adoption – but then again, it should always be a top priority with any kind of network service, not just cloud. “Wherever your data is – whether on-premise, your laptop, in a data centre or in the cloud – you’ve still got to secure it. It doesn’t really

matter what the platform is. And actually it can be vulnerable and insecure in any one of those instances,” says Barter.

He goes on to suggest that a lot of people use security as an easy and convenient excuse for not moving to the cloud. Furthermore, he blames many providers for still selling the cloud as a “techy thing”.

“It’s almost packaged up to be for the very early adopters who are expected to be very tech savvy engineers and IT people. But actually it’s the CEO and the senior decision makers in the business that are now asking the questions about the cloud. And they’re suddenly realising that it’s hard and using security as a reason not to do it. But from a business perspective, if you understand how much cloud is going to save you and how easy it’s going to be, you’ll actually take security in your stride – just as you would with any other piece of data.” ■



**“If you understand how much cloud is going to save you and how easy it’s going to be, you’ll actually take security in your stride – just as you would with any other piece of data.”**

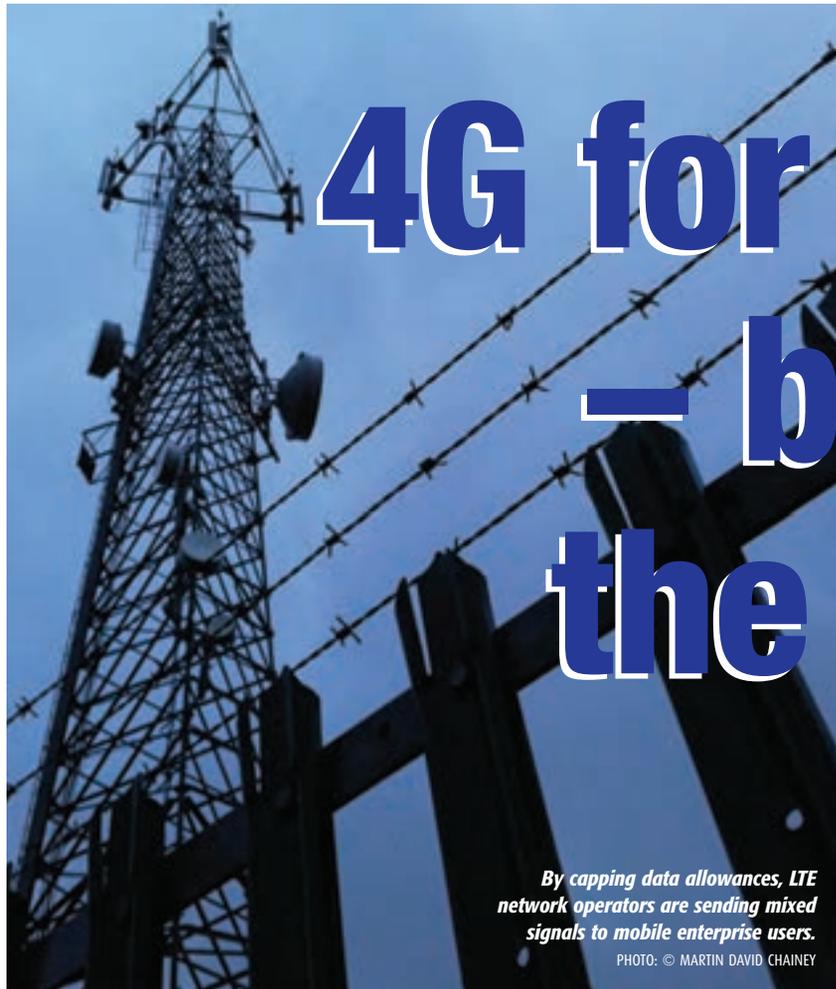
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# 4G for enterprise – but where's the gee whiz?

By capping data allowances, LTE network operators are sending mixed signals to mobile enterprise users.

PHOTO: © MARTIN DAVID CHAINHEY

**Uptake of 4G mobile access suggests the UK is making up for lost time. But is it fit for business? IAN GRANT finds out.**

Forget the years of intimidation, bullying, cajoling, chicanery, mudslinging, weeping, wailing and gnashing of teeth that preceded the November 2012 launch of fourth generation mobile services in the UK. Today, upwards of three million consumers have subscribed to a 4G service, and more are joining daily as the price of handsets, dongles and minutes starts to fall.

But for every silver lining there's a dark cloud. More than anything, the fast take-up reflects the public's thirst for data and content where and whenever they want it. Businesses are no different; they too would like (no, make that *need*) a single integrated network they can just plug into and play. While LTE is potentially a big step forward from 3G, it is not the ultimate solution.



**Mobile operators have embraced Wi-Fi, even though it falls largely outside their direct control and uses licence-exempt spectrum. But they have ambivalent feelings.**

Monica Paolini  
CEO  
Senza Fili

There are big differences between 4G and earlier generations of mobile technology. Understanding them and their limitations is key to the successful application of 4G in enterprises. 4G is generally taken to mean high-speed mobile transmission technologies such as LTE (Long Term Evolution – the latest incarnation of GSM), or Mobile WiMAX. The latter in the UK occupies a very tiny niche market. So for practical purposes, 4G remains synonymous with LTE.

Unlike 3G and 2G, LTE is a pure digital packet switching technology from end-to-end that uses IP. This makes it much simpler and cheaper to manage, and to build devices that exploit it. But, as *Skype* users will be well aware of, VoIP can be pretty iffy, especially if congestion increases latency on the line, or the networks lose packets en route (as is often the case).

While programmers are still working out the bugs in Voice over LTE (VoLTE), UK operators use their 3G service's circuit-switching technology in order to maintain a decent quality voice service. They also use 3G when there's no 4G signal, and will continue to do so for some considerable time. This is despite promises (in O2's case, a licence obligation) to provide a 2Mbps service with 98 per cent indoor coverage by the end of 2017 – but crucially, not necessarily with a 4G signal. Ofcom says: "Wherever 4G networks are rolled out, we also expect 2G and 3G to be installed alongside, reducing voice not-spots."

This makes the operators' 3G/4G coverage pattern extremely important for enterprise users. Is there a signal where you do business? It's not easy to find out as operators' coverage checkers work on postcodes. So for example, unless you know all the postcodes between home and work, it's hard to see if you'll have 4G connectivity during your commute

## TDD and FDD

LTE technology comes in two 'flavours': frequency division multiplexing (FDD) and time division multiplexing (TDD). FDD

requires different dedicated frequencies for uplinks and downlinks, while TDD uses one channel for both. China is the main proponent of TDD, but FDD is generally held to offer better quality of service and is used by UK operators. However, Vodafone and mobile re-entrant BT have the option to use both, judging from last year's mobile spectrum auctions. They are likely to offer a TDD service, possibly for niche markets like machine-to-machine (M2M) or very short range (femtocell) indoor coverage.

The other thing to note is that LTE's radio channels are quite narrow which restricts the amount of data they can carry. To boost the total network capacity, operators have to increase the number of cells and/or offload data traffic from the air as quickly as possible. Most are doing both, hence the massive and growing investment in public Wi-Fi. The Wi-Fi hotspots, often colocated in the cell base stations, take the traffic into fixed backhaul networks that use microwave and fibre to carry the signals to their destination.

US-based Senza Fili specialises in the small cell market. Its CEO Monica Paolini says: "Mobile operators have embraced Wi-Fi, even though it falls largely outside their direct control and uses licence-exempt spectrum. But they have ambivalent feelings. Wi-Fi is a huge reservoir of data

capacity that is largely free when used from residential or workplace locations."

Paolini argues that mobile operators should move beyond blind offload to get more directly involved in managing the Wi-Fi subscriber experience and in controlling the Wi-Fi infrastructure in public locations. She says they can do this by moving to Carrier Wi-Fi and integrating the technology into their networks.

That will certainly help. But it's not enough. Frankly, the operators need as much spectrum as they can get (preferably for free). But there is also new LTE technology called LTE-Advanced (LTE-A) that allows operators to cobble together different bands to give a higher carrying capacity. This is precisely what EE did when it tested a 300Mbps link in London's Tech City area late last year (*see News, Nov 2013*).

LTE-A is enabled by carrier aggregation. In this case 'carrier' refers to radio waves rather than the mobile operator, while aggregation is similar in concept to bonding fixed wire cables to increase transmission capacity. For the Tech City trial, EE brought together 20MHz of 1800MHz spectrum and 20MHz of 2.6GHz. The combination allowed it to stream 4K TV which requires 20Mbps compared to, say, 5Mbps for the BBC *iPlayer*.

## 4G SPECTRUM HOLDINGS BY UK MOBILE OPERATORS

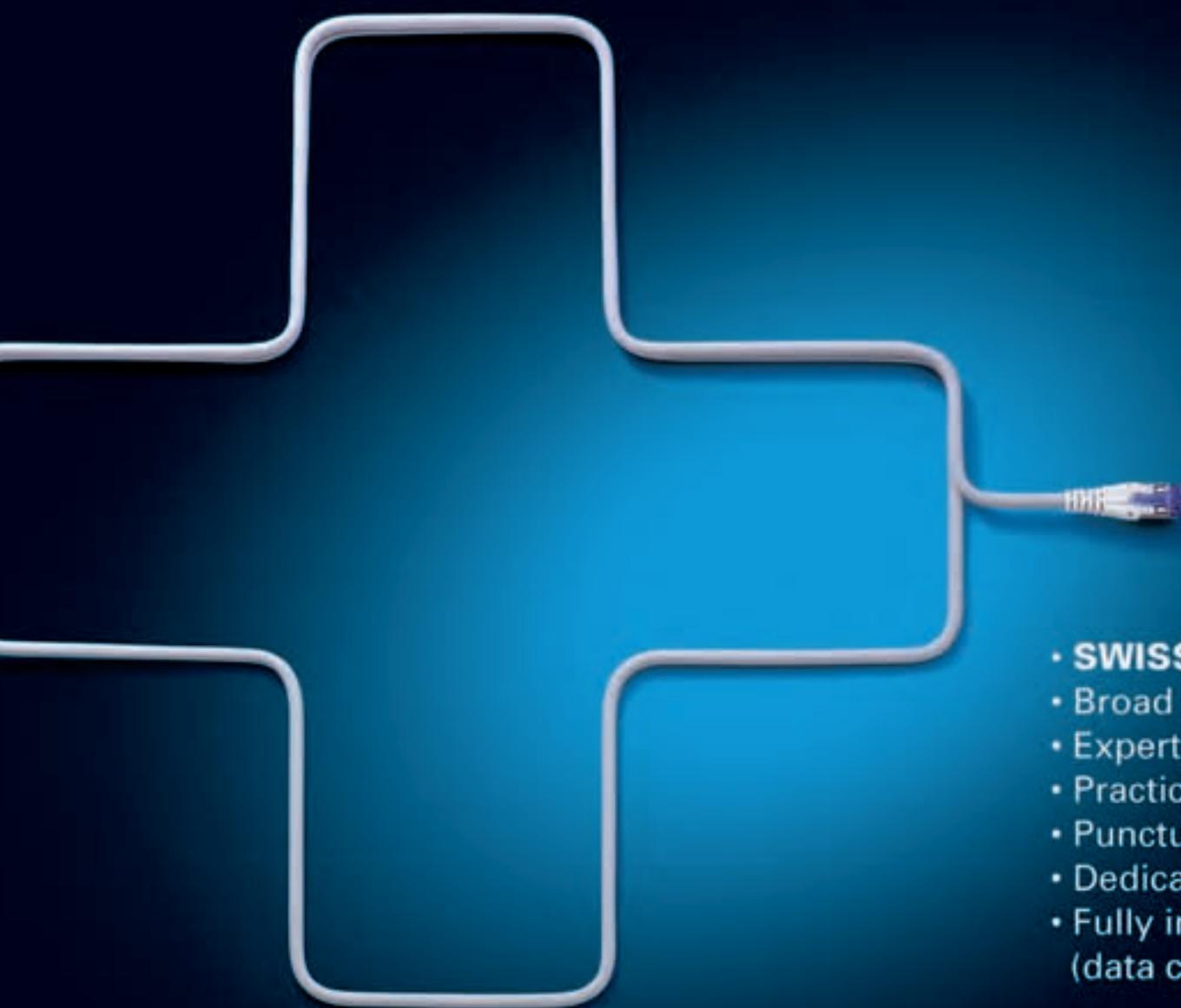
Winning bidder	Spectrum won	Base price for licence
EE (Orange and T-Mobile)	2x5MHz of 800MHz and 2x35MHz of 2.6GHz	£588,876,000
Hutchison 3G UK	2x5MHz of 800MHz	£225,000,000
Niche Spectrum Ventures (a BT subsidiary)	2x15MHz of 2.6GHz and 1x20MHz of 2.6GHz (unpaired)	£186,476,000
Telefónica UK	2x10MHz of 800MHz (coverage obligation lot)	£550,000,000
Vodafone	2x10MHz of 800MHz, 2x20MHz of 2.6GHz and 1x25MHz of 2.6GHz (unpaired)	£790,761,000
<b>TOTAL</b>		<b>£2,341,113,000</b>

The results of Ofcom's 4G licence auction held last year.

SOURCE: ANALYSIS MASON, 2013

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## The data paradox

Operators are double-minded and cautious about data. Worldwide, they face declining revenues from voice and messaging as 'over-the-top' (OTT) apps like *Skype* and *WhatsApp* become more popular. Rising revenues from data do not replace the earnings lost to these free apps. So from an 'all you can eat' inducement to subscribe to 4G, many operators are now capping data usage and outlawing tethering, or using your smartphone as a modem for your laptop or tablet to access the internet. The

message is: 'don't use the network'. David Dyson, CEO of 3 which doesn't yet offer a 4G service, told a Westminster e-Forum meeting in April that 99 per cent of the traffic on his company's network is data. 3 just recently set data caps to curb its few but very high volume users. Vodafone and EE both offer capped 4G services but don't reveal their voice/data traffic splits. However, EE says non-text data revenue represented 44 per cent of its average revenue per user (ARPU) in 4Q13. Alexandra Rehak, who heads telecoms research at Analysys Mason, told the

e-Forum that voice revenues are now less than half of UK mobile operators' total revenues. "Handset data traffic is the key factor in future growth," she warned, adding that ARPUs are sliding from £16.90 per month towards £15.60 in 2019. Her observation points to some of the market issues related to the device makers' implementation of 4G. LTE is not a monolithic technology; there are at least 17 frequency bands in the LTE domain, so despite the Global mobile Suppliers Association counting almost 1,600 LTE devices on the world market, only some

work in the bands implemented in the UK. True, most devices support more than one band. But it can make roaming, especially in the US, disappointing. Also, few manufacturers have launched devices that take advantage of the speeds possible with carrier aggregation. EE notes this is changing. It promised to launch its 300Mbps commercial service using a CAT6 Huawei router. This will provide a high-speed mobile Wi-Fi connection to up to 20 devices, and any devices that support the 802.11ac standard will run at up to 200Mbps. EE expects to ship the first commercial

## One-stop shop proposition

Vodafone is aiming to leverage its 4G capability to become a one-stop comms shop for UK and global businesses. In Ofcom's 4G spectrum auction last year (see *News, March 2013*), the company spent £802m acquiring the widest portfolio of mobile spectrum. That portfolio includes the crucial 800MHz frequencies which allow Vodafone's 4G signal to travel further into buildings. This was on top of its £1bn purchase of the Cable & Wireless fixed network.

"With 4G, our combined fixed and mobile capabilities really come to the fore," claims enterprise marketing director Jonathan Kini (pictured right). "Enterprise users in the UK can now take a fully



functional 'office' with them wherever they go. They can exchange large files, access back-end systems and databases, and collaborate with co-workers through high-definition video calling, as if they were in the same office. Business leaders can now truly be 'present' with their teams, regardless of geography."

Kini says 4G is also allowing Vodafone to add to its traditional offering through enterprise applications, taking advantage of the company's new multi-million pound investment into its network. "These applications, such as *Lync*, will increasingly focus on mobilising the UK workforce and you will see businesses move to managing their employees by output rather than proximity." Vodafone says it currently has around 500,000 4G subscribers, but Kini won't disclose how many are individuals, how many are SMEs, and how many are on an enterprise package. Instead, he says the corporate appetite for 4G is huge and that SMEs are early adopters, as they were with mobile telephony. "We have also

seen huge interest from our corporate and public sector customers who really see how 4G improves their communication to their people and customers. They can now view complex documents on the move and download and upload vital data-rich files without connecting to Wi-Fi." Kini goes on to say that capping data is only one way to ensure Vodafone manages its customers' usage and spend. "We must get out of the mentality that 'unlimited is best'. It's important we give customers a package which is both cost effective and provides them with adequate allowances so they can be effective month on month. "In addition, we are also giving many of our customers unlimited data for their first three months. Customers have the opportunity to understand and analyse their usage without the threat of out-of-bundle charges." Can Vodafone really be a force in fixed line? Kini believes that as fixed and mobile communications increasingly converge, it no longer makes sense to view them as anything other than one platform for

doing better business. He claims – at least until BT shows its hand – only Vodafone owns both fixed line and mobile networks in the UK, and says this allows it to offer a "truly technology agnostic" approach. "We're not pushing a specific fixed or mobile agenda but rather a solution that best suits our customers' needs. It's about everything – from delivering seamless access to cloud services with a unified customer experience, through enabling consistent information security beyond the traditional firewall, to rolling out innovative M2M capabilities. Vodafone can deploy IP-VPN services bonded to 4G mobile within days, if not hours – all with a single point of contact for firms." From an enterprise point of view, he adds that investment enables Vodafone to continue to be the strategic business partner for more than 70 per cent of the FTSE 100. The operator says it plans to spend a billion pounds in each of the next two years to deliver indoor coverage using 2G, 3G and 4G to 98 per cent of the UK population by 2015.

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Huawei Mobile Wi-Fi units by summer 2014, with handsets to follow later in the year.

However, while those speeds are about 20 times faster than 3G, they are still below the target of 1Gbps set by the standards bodies for stationary 4G downloads (100Mbps in motion). They also reflect the asymmetric bias that has dogged digital telecoms (downloads are faster than uploads).

While asymmetry may reflect traffic flows in Google searches and iPlayer downloads, business applications such as telephone conversations and video conferences need symmetry because both parties are as likely to talk as much as each other. Asymmetry also adds a hitch to cloud computing – many users would like to be able to upload and store or backup data in the cloud but this requires fast upload speeds to be practical.

## Ready for business

So is LTE the mobile solution enterprises have been waiting for? It may not be perfect, but as a technology 4G is a lot more business-friendly than 3G and users are more likely to adapt to it.

In a research paper commissioned by EE, consultants at Arthur D. Little said 4G networking led to improvements in enterprise application performance and mobility. These in turn led to: increased sales and enhanced customer service; improvements in products and services; personal and team productivity; management effectiveness and innovation; process efficiency and effectiveness; direct cost reductions; employee motivation; and better flexibility, agility and decision-making.

Proof came from the US experience with LTE, where two-thirds of firms interviewed reported increased productivity. Almost half (47 per cent) were able to cut costs. Thirty-nine per cent said they had won more business and, when asked if 4G had helped their organisations “innovate and jump the competition”, more than three-quarters agreed. “Compared with Wi-Fi, 4G LTE allows fully-mobile use of applications that require true broadband speeds and improved convenience with no need to authenticate onto another, possibly public, network,” said the consultants.

Analysys Mason sees LTE as a potential substitute for fixed networks for the home and SME market. “For example, UK Broadband’s *now broadband* service offers connectivity using LTE and 4G routers. This use of TD-LTE as a substitute for fixed networks could be an interesting solution in emerging markets,” it says.

Indeed, usage patterns uncovered by Ofcom suggest people consume high-speed data mostly when stationary and indoors. This makes 4G more like Wi-Fi as far as most users are concerned, and indicates why operators have found it hard to charge a premium for 4G.

Phil Sorsky, VP of sales in Europe for connectivity specialist CommScope, says 80 per cent of mobile data traffic originates indoors, but only two per cent of the world’s 30 billion square metres of office space has an in-building mobile wireless network.

According to Sorsky, the first in-building wireless solutions focused on extending coverage using an “outside-in” approach that relied on signals from the macro network penetrating the building. This is now changing to an “inside-in” strategy as traffic levels rise and offload becomes essential. He says: “The new unified wireless management platforms become so intertwined with existing WAN and LAN infrastructures that many office workers never notice them. They simply enjoy high data speeds without ever plugging into a socket.” ■

## 4G in the real world

Staff at the Berkshire Healthcare NHS Foundation Trust had been using 3G but found that it gave unacceptable response times. In April 2013, the trust issued 45 of its nurses with laptops and dongles, enabling them to log on to admin systems and make updates over 4G using EE’s LTE network.

The faster remote access means that the nurses can spend more time with more patients. “On average, our nurses can see one or two extra patients each day because of the time saved,” says Bill Johnston, technology lead at the trust. The organisation is now training 1,200 staff who work in the community and also equipping them with 4G devices.

In a 4G fixed wireless application, UK Broadband (UKB) supplied a 200Mbps

core backbone network to ETDE Infrastructure which specialises in lighting, electrical connections and highway infrastructure installations. ETDE used the network for a CCTV traffic management system that featured 61 pan-tilt-zoom cameras to cover an upgrade to a 27km stretch of the M1 motorway from junctions 10-13.

UKB is the operator behind the country’s first LTE commercial system which it switched on in 2012 using TD-LTE at 3.5GHz (see *News, March 2012*). For the ETDE deployment, UKB used Ceragon’s *FibeAir IP-10* microwave to backhaul the roadside camera video images to a nearby network control centre. Infinet Wireless point-to-point and point-to-multipoint radios provided a ‘last mile’ solution to the CCTV cameras not on the wireless core backbone.

ETDE director Simon Whitehouse, says a wireless system was used as traditional copper and fibre cables are highly vulnerable on construction sites. “If the video pictures from the CCTV units are compromised, there are significant public safety issues, so it was vital that we found a way to reduce the risk of broken connections.”

Typically in highway construction projects, cameras and control centres are connected using fibre cables strung along the roadside. These are often simply looped over the boundary fence posts. UKB says these are very prone to damage and consequent failure. “As a result of these unreliable connections it is necessary for engineers to be permanently on call to go out and fix faults. This is not only costly but also leads to times when public safety cameras are out of action.”

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# Control from afar

New hardware and software to help you monitor and manage your network over long-distance connections.

AMC (Alpha Micro Components) reckons its *NetPort II* plug 'n' play' Serial-to-Ethernet cable adaptor can give new life to old equipment by network-enabling legacy devices.

The external adaptors are based upon Lantronix's *XPort* device and offer RS-232, RS-485 and PoE options. They have an integrated web server, allowing any connected device to be 'contacted' and monitored via a standard internet browser, according to AMC.

According to the firm, *NetPort II* can be integrated into a system with minimal setup using a configuration utility for quick and easy customisation to suit any network or serial device.

Virtual Comm Port drivers are provided to allow a connected device to communicate with existing software over TCP/IP (for *Windows OS*). Alternatively, a 'direct socket' connection can be used.

The *NetPort II* features a Modem Emulation Mode, enabling it to behave like a modem but communicate over TCP/IP. AMC adds that the TCP/IP protocol stacks are embedded into the adaptors, allowing them to operate in non-PC environments.

Other features include an integrated 10/100Mbps Ethernet port and serial cable offering serial data rates of up to 921.6Kbps, and 128/192/256-bit AES encryption.



IHSE has released new fibre versions of its *Draco Tera Compact* KVM switches. The company claims it now provides a complete line-up of optimum space saving matrix switches for a wide range of applications.

Matrix switches enable switching between various computers and remote

consoles (keyboard, mouse, monitor as well as other peripheral devices). The *Draco Tera Compact* series is designed for small and mid-size installations, and is now available with fibre ports in all sizes, with 8, 16, 32, 48, 64 and 80 ports. IHSE says data transmission via fibre allows transfer

distances of up to 10km on either side of the matrix, which is ideal for interconnection between buildings. Computers can quickly be accessed from any position.

64- and 80-port chassis switches are also available as hybrid versions, equipped with



48 Cat X ports and 16/32 fibre ports. The vendor adds that its integral *Flex-Port* technology provides dynamic configuration of all input and output ports.

Riverbed has enhanced its *Steelhead* (pictured) range of network performance management products with the introduction of *Cascade Profiler* and *Shark 10.5*. It says customers now have a single integrated WAN optimisation and performance management solution that can deliver application acceleration anywhere while improving end-user experience and visibility.

According to Riverbed, in order to deliver the best end-user experience, networks have to understand consolidated web traffic and real-time, critical unified communications traffic across an agile and rapidly changing infrastructure. Without detailed application visibility, the vendor believes that IT teams are unable to guarantee the quality of service and performance of business-critical applications that enterprises demand.

By using *Cascade Profiler* and *Shark 10.5*

integrated with *Steelhead*, Riverbed says IT teams can take advantage of enterprise wide QoS and Path Selection technology to help prioritise the delivery of mission-critical applications over faster networks, while delivering less critical applications over less expensive commodity internet links.

It says the new platform offers centralised monitoring of QoS policies to visualise under- or over-provisioning of bandwidth, critical real-time collaboration and unified communication visibility and monitoring, and fully integrated *Cascade Shark* packet capture software into *Steelhead*.



SolarWinds has added more features to its *Network Performance Monitor (NPM)*. The firm reckons its platform offers the "robust network performance monitoring, alerting and reporting capabilities available in 'Big Four' enterprise software, but at an affordable, unique-to-industry price".

The *NPM* aims to simplify data centre network management. One of its key new features is the addition of a baseline threshold calculating functionality which, according to SolarWinds, provides the "deep visibility and advanced analytics not previously available to network administrators at such a price".

It says that dynamic baseline threshold calculation defines critical network device thresholds based on historical network performance data, enabling users to configure alerts simply and accurately. It automatically gathers baseline data for specified time intervals (weekly or daily) to determine normal operating parameters and calculates thresholds with relevant alerts. These allow IT managers to quickly assess whether a device is up, performing poorly, or about to fail.

SolarWinds has also added custom NOC views. It says these enable users to easily configure and display real-time fault, performance, and availability dashboards.

Users can drag and drop devices into network maps and automatically view real-time and colour-coded link utilisation for fully customised and detailed insight into network health beyond up/down status.

Other features include enhancements to the universal device poller feature. This allows users to add a CPU and memory utilisation chart in the *NPM* dashboard for additional uncommon devices, and then include stats from the new devices in monitoring and reporting.

There's also further support for additional routing protocols as well as for wireless controllers and devices from Motorola and Ruckus to enable broader network monitoring.



*APN (Adaptive Private Networking) Aware* is a software-based centralised monitoring application that supports **Talari Networks'** WAN appliances. It aims to give IT teams a holistic and unified view of real-time status and historical reporting on the quality of every individual link on their networks. Talari says this allows them to identify and fix problems more quickly, and achieve higher network availability and quality.

*APN* is said to offer network performance statistics and reports at a very granular level across the entire WAN. Talari says it can also give network managers data that can be used to enforce SLA contracts.

According to the vendor, when used with its WAN optimisation appliances such as the *Mercury* range (pictured), *APN* builds a detailed map of all paths through the network, the downtime, loss, latency and jitter on each path, and the bandwidth used by each application. This information is then used to build a virtual network overlay on the physical WAN and direct traffic

down the optimal path based on network conditions and organisation policies.

Via a centralised location, *APN* gathers the WAN's physical, virtual and application data from appliances throughout the network and stores it in a single database.

This allows IT teams to analyse current and historical network and application performance via interactive maps, graphs and tables that can be displayed from different perspectives. They can then take action for the purpose of troubleshooting, network and capacity planning, ROI analysis, and SLA confirmation.



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## KPMG sponsors first D&A summer school

KPMG will sponsor the UK's first Data Science Summer School to meet huge demand for data scientists in the finance, retail, technology and media sectors. The school's organiser, Pivigo Academy, hopes to recruit 100 of Europe's brightest PhD students and turn them into data scientists during a five-week course.

The project, dubbed 'S2DS' (Science to Data Science), ultimately aims to build a pipeline of talent in the data and analytics (D&A) field in order to plug the huge talent gap which currently exists. It is the brain-child of Swedish astrophysicist Dr Kim Nilsson who has had first-hand experiences of the difficulties many highly qualified academics encounter once they set out to find a job in the commercial sector. Nilsson is founder and head of the Pivigo Academy and a co-founder of Pivigo Recruitment.

"We believe data science is an incredibly exciting career for anyone going into it," she says. "Those launching their careers now will help shape the industry, and our students will be spearheading the data revolution in Europe for decades to come."

KPMG says data science presents a real opportunity for business to drive insight and value from the abundance of information being created in the digital world. The firm aims to be at the forefront of the D&A sector. Last year, it set up KPMG Capital, a global investment fund that will mainly back D&A businesses. In January, as part of its Digital Innovation Network, it also announced a partnership with the Chelsea Apps Factory which specialises in the design and production of mobile enterprise apps.

Courses at the summer school begin in August. Candidates with a PhD in analytical science (or similar degree), and a proven data analysis background and statistical knowledge can apply at [www.s2ds.org](http://www.s2ds.org). Successful applicants will pay a small registration fee and are eligible for free, single room accommodation.

■ IT and computing staff saw demand for their services increase further in March, according to the *Report on Jobs* published in April by the Recruitment and Employment Confederation (REC) and KPMG.

For permanent workers, the IT sector was in third place out of nine in the demand for staff 'league table'. Its index reading of 69.6 was higher than the average for all types of permanent workers across the UK (67.5), pointing to a strong pace of expansion. The league leaders are currently the engineering and construction sectors.

But temporary/contract professionals in IT and computing are not doing as well. Here, the sector came in at seventh place with an index reading of 63.7, lower than the national average of 66.0.

The *Report on Jobs* is a monthly publication produced by Markit on behalf of the REC and KPMG. It features original survey data, collected via questionnaires from a panel of 400 UK recruitment and

employment consultancies, and provides cross-sector and pan-region analysis of the UK labour market.

Data for the monthly survey were first collected in October 1997. All index numbers are calculated from the percentages of respondents reporting an improvement, no change or decline. These indices vary between 0 and 100 with 50.0 signalling no change on the previous month, above 50 an increase or improvement, and below it indicating a decline or deterioration.

### NEW COURSES

**Hortonworks Apache Hadoop 2.0 (various courses) – QA**

QA has added Hortonworks Apache Hadoop 2.0 training courses to its Big Data curriculum. The *Hortonworks Data Platform (HDP)* is said to provide the only 100 per

cent open source system architected, built and tested for enterprise-grade deployments.

QA claims its Hadoop courses provide real-world, hands-on lab experiences with certification opportunities. It says this will enable business users and non-technical managers, developers, and architects to maximise their knowledge and understanding of *Hadoop* and *HDP*.

Five HDP courses have been announced: *Hadoop Essentials*; *Data Analysis using Pig and Hive*; *Developing Applications*; *Operations Management*; and *Developing and Operating HDP on Windows*.

The courses are available through QA's public schedule or can be booked privately. [www.qa.com/hortonworks](http://www.qa.com/hortonworks)

**Digital Forensics and Investigation – ISACA**

Global IT association ISACA says digital

forensics and investigation is the recovery and investigation of data in any device capable of storing digital data. To respond effectively to any scenario involving a data breach, organisations rely on the tools and techniques of digital forensics and e-discovery.

ISACA's course will detail the concepts and principles security auditors and professionals need to review, conduct or participate in such forensics investigations. It focuses on defining digital forensics and e-discovery, exploring specific digital forensics methods, and learning regulations that impact strategies for analysis, risk mitigation and organisational preparedness.

Neil Hare-Brown, ISACA certified information systems auditor and CEO of Blackthorn, will lead the event on 1 May at Infosecurity Europe, Earl's Court, London. [www.infosec.co.uk/en/shop/ISACA-Training/](http://www.infosec.co.uk/en/shop/ISACA-Training/)



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*Pivigo Academy founder Dr Kim Nilsson says students will be "spearheading" Europe's data revolution.*



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