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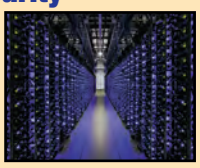

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Organisations pay a high price for avoidable IT downtime

by Rahiel Nasir

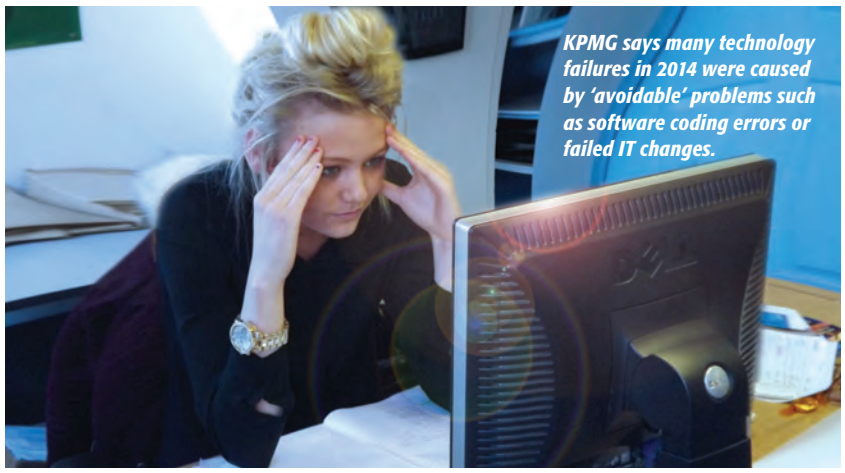
Dealing with IT failures cost organisations an average of £410,000 per incident last year, according to KPMG.

In its *Technology Risk Radar* report, the consultancy firm tracks the major technology incidents faced by businesses and public sector bodies. In its report for 2014 released in December, it found that a mean of 776,000 people were affected by every IT failure and that four million bank and credit card accounts were compromised as a result of technology breakdowns.

According to KPMG, many failures were caused by 'avoidable' problems such as software coding errors or failed IT changes which accounted for more than 50 per cent of the IT incidents reported last year. Of these, it says 7.3 per cent were due to human error. KPMG believes this figure shows that basic investments in training are being ignored at the employers' cost.

Jon Dowie, partner in the firm's technology risk practice, says: "Investment in technology will continue to rise as businesses embrace digital and other opportunities, but this needs to be matched by investments in assessing, managing and monitoring the associated risks."

He goes on to warn that all organisations are vulnerable to 'technology risk' and that no one can afford to be "complacent". In particular, KPMG predicts IT complexity will continue to be the single biggest risk to financial services firms during 2015, given the pressures they face in maintaining highly secure technology infrastructure. Security threats, such as cyber crime and unauthorised access, are rated fifth.



KPMG says many technology failures in 2014 were caused by 'avoidable' problems such as software coding errors or failed IT changes.

SolutionsPT, an industrial IT provider for plant and manufacturing environments, says organisations must continually challenge their infrastructure teams to determine if and how they could recover from an IT failure – and crucially, how long that recovery would take.

"These findings from KPMG don't come as a huge surprise," says Paul O'Connell, SolutionsPT's cyber security business champion. "An effective IT infrastructure and recovery plan are vital for businesses of every size, but the cost of IT failures is amplified in larger organisations where downtime can cost millions of pounds.

"Our own research has shown 40 per cent of businesses have lost business critical data following an IT failure and that the majority of organisations remain dissatisfied with the speed of their recovery plans."

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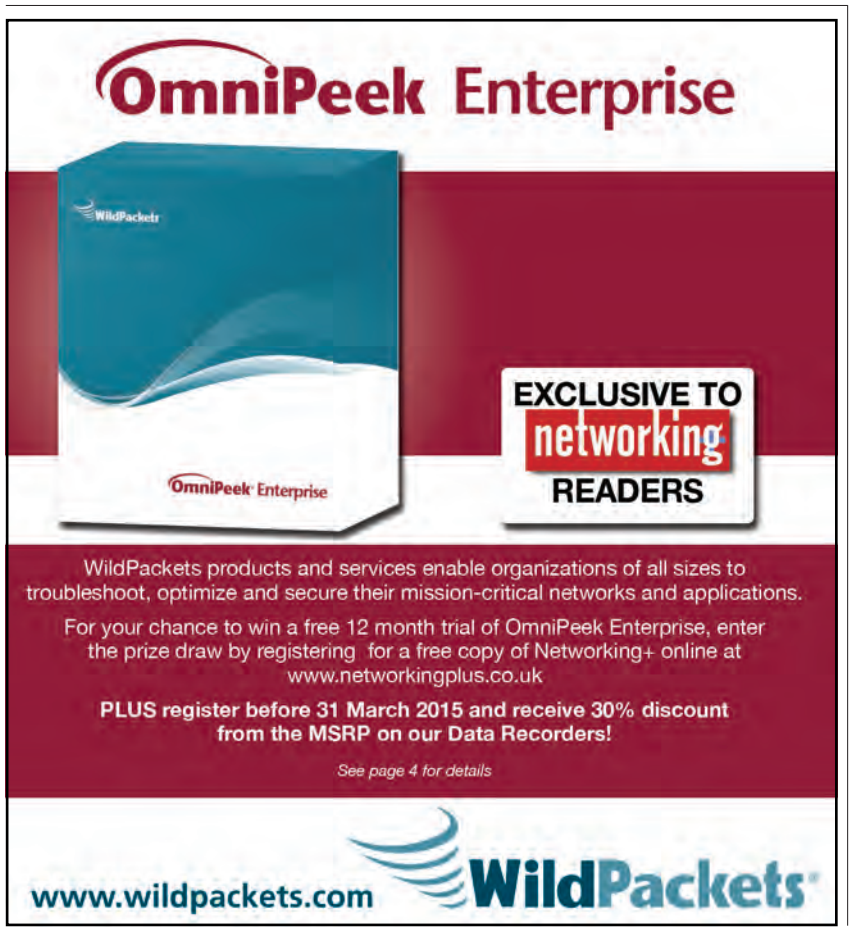


What keeps you awake at night?

Security, loss of data, and cloud security are the top things that keep digital leaders awake at night, says the BCS, The Chartered Institute for IT.

In its annual *Digital Leaders* survey, the institute aims to provide a snapshot of what senior IT professionals are looking forward to over the next 12 months. It was carried out online with a total of 346 responses received during November to December 2014.

It revealed that information security (60 per cent), cloud computing (55 per cent) and mobile computing including BYOD (53 per cent), are the top priorities for many organisations during 2015.

Ninety-two per cent of respondents said their organisation does not have enough resources to address the management issues and IT trends that their company has prioritised. More than half (53 per cent) indicated that they need enhanced IT skills among their existing workforce, while the same number said that they require additional IT staff that are suitably qualified. Only eight per cent said they had enough resources.

Looking to the next three to five years, the survey found that data security remains the biggest priority for organisations at 54 per cent. Adam Thilthorpe, the institute's director of professionalism, says: "It's clear that security, of almost every shape and size, is the main thing keeping IT professionals awake at night. This is no surprise; this is no longer an IT issue alone but the most important issue for the board."

Other longer-term priorities for IT professionals include Big Data (42 per cent) and cloud computing (40 per cent). ■

euNetworks boosts London's role as a leading technology hub

European bandwidth infrastructure provider euNetworks is helping to boost London's position as a leading technology hub with news of two new signings to its *dc connect* service.

The firm says it has recently invested £8 million in pre-deploying the high bandwidth infrastructure that supports *dc connect*, its London metro service. The company adds that it is one of the few providers in the capital that owns and operates its own fibre-based network, which means it controls service level performance and is able to offer competitive rates.

Earlier in January, euNetworks said it had deployed a critical connectivity hub at Infinity's Slough data centre, giving it access to *dc connect*. It says the service will give Infinity's customers "instant and scalable" European connectivity via pre-deployed optical equipment, enabling high-speed bandwidth connections to 250 data centres in Europe and other key sites across London and the continent. It also means that other Infinity data centre locations will be connected to euNetworks.

euNetworks says Volta's carrier-neutral, Great Sutton Street data centre provides a "strategically important" advantage.

Under a separate deal, euNetworks has selected Volta Data Centre to join *dc connect*. The company says Volta's Great Sutton Street facility is located on a "strategically important" route on the *dc connect* service, and provides an advantage for customers due to its close proximity to the City, West End, and the new media hub in Shoreditch.

"Cisco estimates that by 2017 global cloud traffic will reach 5.3 zettabytes," says Volta CEO Matthew Dent. "In this environment, the reliability and latency of the connectivity is very important. So euNetworks' decision to choose Volta to join its connectivity service further proves that we can put London businesses at the heart of the internet's most powerful services, providing access to global markets." ■

Hughes shopfloor staff have stopped calling the IT helpdesk since the new Ruckus Wi-Fi system was installed.

New Wi-Fi "virtually eliminates" support calls at electrical retailer

Hughes Electrical says it no longer receives calls from staff trying to access their in-store Wi-Fi networks to demonstrate products, thanks to the installation of a new system from Ruckus.

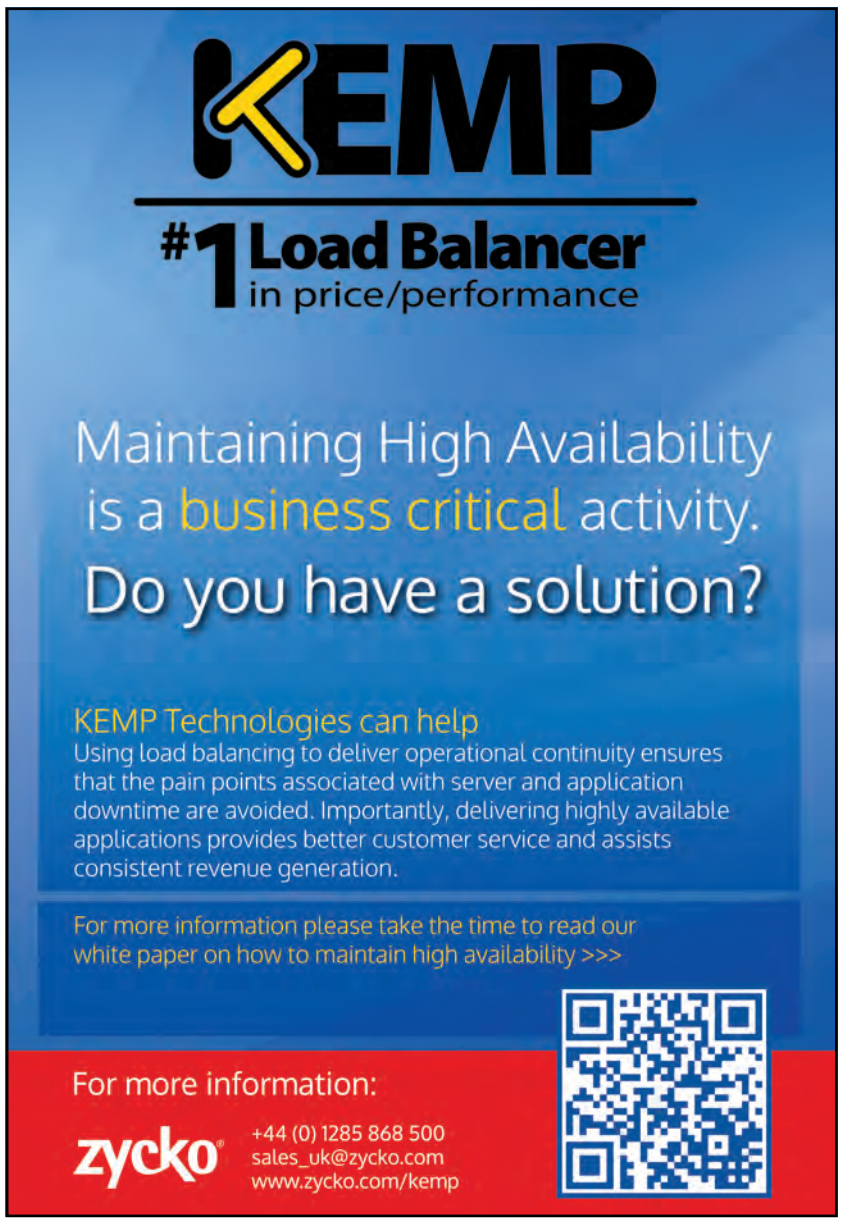
Hughes is said to be the UK's second largest independent electrical retailer and operates more than 43 shops across East Anglia and the Midlands. With almost every new consumer product featuring Wi-Fi capability, the company needed a more robust wireless network that could cope with the capacity and traffic demands essential to running its business.

Hughes had been using a conventional Wi-Fi system and found it needed to add extra access points as demands grew.

However, it found that this became counter-productive because the APs could not be managed in a unified way across all stores and operated autonomously without any coordination, causing disruptive co-channel interference.

Hughes has now deployed hundreds of dual-band Ruckus *ZoneFlex Smart Wi-Fi* indoor APs at all its locations. These are all remotely managed from a central point through redundant *ZoneDirector 3000 WLAN* controllers installed within Hughes' network operations centre.

The retailer's IT manager Tim Pearce says that where previously IT support staff were receiving three to four calls a day from frustrated employees unable to get stable Wi-Fi access, these "effectively vanished" once the new kit was installed. ■



IT downtime

(continued from from page 1)

In addition, O'Connell says it's important to remember that business continuity planning is as much about "nailing a process" as the technology itself: "Having a backup solution is not the same as having a business continuity plan. Continual assessment is vital to ensure an organisation is protected."

Enterprise Linux and mission-critical platform provider SUSE says making near-zero downtime a reality is more important now than it's ever been as IT becomes an integral aspect of all areas of business.

It recently carried out its own research into the area and found that 80 per cent of IT professionals experienced unplanned downtime, largely as a result of technology failure.

Brian Green, the company's UK and Ireland MD, believes new strategies should be implemented in order to identify the causes of downtime and defend against these threats. "While some level of downtime may be inevitable as organisations begin the process of getting unplanned downtime under control, zero downtime should still be the end goal. Reducing downtime does require new initiatives, whether this involves changing hardware infrastructure or upgrading operating system functionality.

"Companies failing to take steps now may find themselves falling behind as their competitors tackle this issue, investing in strong IT initiatives which safeguard their workloads against downtime, increase productivity and boost growth."

In its own survey which questioned 105 IT professionals, SUSE found that the most important workloads to safeguard against downtime are email, virtualisation host and web servers, followed closely by specific workloads unique to the respondents' industry or market.

With ever greater complexity in IT systems, not to mention the challenge of implementing IT transformational change, firms are running to stand still in managing their IT risks, according to KPMG's Dowie. "The cost of failure is all too clear. It is crucial for both public and private sector organisations to understand the risks associated with IT and how they can be managed, mitigated and avoided." ■

Zero downtime should be the end goal, according SUSE's UK&I MD Brian Green.

SMEs are struggling to manage multiple external suppliers

Most SMEs believe their business would perform better with fewer suppliers, according to new research from BaseKit.

In a study carried out last November, the web platform specialist surveyed 500 decision makers in businesses with 25 employees or less. It found that 51 per cent felt that their business would perform better if they didn't have to worry about multiple suppliers, with 40 per cent saying they have to manage multiple bill payments each month.

The research also revealed that more than a third of SMEs have "no idea" how many external suppliers they use. Of those that did, over 40 per cent said that they use more than three suppliers.

Almost half of the respondents said they're currently bundling their personal services, such as home phone, broadband and TV, with one supplier. According to BaseKit, this demonstrates an appetite for single sourcing that could be easily adopted to their business.

BaseKit CEO Juan Lobato says smaller firms often won't have an IT department to take care of their suppliers. He adds: "We have seen service providers beginning to accommodate SMEs via bundle packages and it is only a matter of time before businesses are able to incorporate their entire service needs under one roof – from hosting to packaged cloud services, SMEs will pick one supplier and be able to create their business from scratch." ■

Uni uses Aurora365 to manage server estate

Plymouth University will use Aurora365 to provide uptime assurance for its extensive estate of more than 750 servers and web applications. The project is said to have been a key enabler for the university to promote a 24-hour 'open for business' IT SLA to its staff and students.

Aurora365's infrastructure monitoring and management service aims to ensure enterprise-class performance operated from a UK-based and round-the-clock network operation centre team. It features web-based dashboards that allow users to monitor website load times by location, page or transaction, and receive alerts to identify the heaviest page elements or images that are not displaying as intended.

This latest contract builds on Plymouth University's previous Aurora365 deployment which provides managed service assurance for the uptime and performance of its Cisco network *(see News, Mar 2014)*.

Denis Mills, the university's operations and maintenance manager, says it is important to combine monitoring technology with an intelligent service management approach. He says this will pre-empt issues and fixes them in real-time when they do occur.

"For example, working with Aurora365 we found that our 24-hour printer service in the university library was prone to fail due to the wide range of encodings on the jobs that were thrown at it from student-owned devices. Aurora365 was able to devise an in-depth check and automated restart of failures, meaning that service continuity is no longer an issue and students are able to complete their work 24x7 to meet deadlines," says Mills.

Aurora365 enables Plymouth University to offer a 24-hour SLA for its 30,000 plus student community.

Another example was the resolution of teething issues following the launch of a new Meraki wireless service for students. During the university's busiest time of year, service performance and availability began to affect the wider Cisco estate and Aurora365 was able to pinpoint the root cause through its debugging capability. ■

THE WORLD ACCORDING TO...

Vaughn Stewart, chief evangelist, Pure Storage

Storage: it's not about the flash

I'll let you in on a secret: the hardware in most enterprise storage arrays is made from common commodity components available at the click of a mouse. Apart from the bezel and, at a stretch, the box it's bundled up in, you could build a pretty similar storage array from parts found on Amazon or Insight.

Of course, the build quality and reliability of a homebrew array will not be the same; the enclosure might not be quite as awe-inspiring, or the overall design anywhere near as elegant, reliable or effective as something the hardware engineers in our industry achieve every day. But from a functional perspective your kit would be capable of doing roughly the same job as most enterprise arrays.

The one exception is the software that runs it. Software is the force multiplier that transforms the base capabilities of the hardware. It can make the storage you use faster, more available and more affordable. It can simplify day-to-day operations, and the administrators who use and manage it are more effective.

We all know by now that SSDs are faster than hard drives – exponentially faster. The catch is harnessing that raw power and turning it into something that measurably benefits a business, rather than propping up a decaying vendor business model.

The flash storage market has taken a groundbreaking technology and made it available for broad business use. Enabling broad adoption requires more than simply assembling the hardware; far more important from the user's point of view is software that makes flash coherent, usable, manageable and more friendly to the applications they use each day to run their organisations.

Yes, flash memory is a game-changer – and it's already begun to disrupt the enterprise storage market in much the same way that Kodachrome camera film transformed the photography business or the Sony Walkman impacted the audio market.

However, the biggest change is not the technology itself but what it enables: better business decisions, more affordable data centres, and competitive advantage. Hardware or software alone doesn't cut it – but the right combination of the two is unstoppable.

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TETRA improves Tyne and Wear metro comms

Sepura's TETRA radios will be used for the new digital communication system deployed for Nexus, Newcastle-upon-Tyne's public transport organisation.

The digital solution is part of a total investment of more than £600m for the modernisation of the metro in the Tyne and Wear area. It replaces a legacy analogue system and comprises a TETRA network and radio terminals for train cabs, drivers, shunters and maintenance personnel.

According to Cambridge-based Sepura, the Tyne and Wear Metro now benefits from continuous communications across its network comprising Nexus and Network Rail tracks; the train radios can seamlessly communicate with either the Nexus or the Network Rail control rooms depending on the tracks they use at any point in time.

Sepura's SRG3900 mobile radio was a perfect fit in the train cab's limited dashboard space.

The solution itself includes Sepura's *STP9* hand-portables for the train drivers and the shunting locomotives. These radios will be used for communication between the drivers, the control room, and the depot controllers during potentially hazardous shunting operations.

Sepura's TETRA terminals are part of a technical solution designed by Schnoor Industrieelektronik, the German-based firm that won the tender to deploy Nexus' new communications system.

Ralf Oppermann, Schnoor's global sales director, says a key contributor to the overall success of the project was the dedicated cab radio retrofit solution based on the Sepura *SRG3900* mobile radio. "The new cab radios, thanks to their simple and familiar layout, perfectly fit the limited dashboard space and reduce training costs which would have been otherwise incurred to familiarise the drivers with the new system."

He adds that the decision to use Sepura for Nexus was influenced by the compact design of its mobile radios and their ability to operate at extreme temperatures. "[This enabled] us to deliver a system that meets the EN 50155 railroad standard. In addition, the Sepura *STP9* hand-portable radio was the ideal choice for shunting operations thanks to its impressive levels of ruggedness and robustness." ■

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Stoke school slims with new cabling

Abbey Hill School in Stoke-on-Trent has used Cat6 structured cabling from Draka as part of its redevelopment and extension. Specialist contractors Security Services says it opted to install Draka's UK manufactured Cat6 HD cable because of its slim profile – it's said to have a cross-sectional area that is around 25 per cent less than standard Cat6 cabling, allowing high capacity cable to be installed in minimal space. A total of 738 data points were installed in the school's new building which comprises classrooms, a range of sensory rooms and a recording studio. The deployment also included the use of Draka modules, faceplates and patch panels. ■

New Habitat for debt collection firm

Debt purchase and collection company 1st Credit relies on its ability to analyse large and complex amounts of data using its proprietary application, *CreditSolve*. So when the firm decided that its key business systems would be better housed in an environment that offers flexibility for future growth, it turned to Adapt to manage its IT requirements. Using *the Habitat*, Adapt's tiered software-defined cloud, 1st Credit is now said to have an "optimal balance of performance, flexibility and efficiency". The platform is supported by Adapt's 150 technical experts and engineers on a round-the-clock basis. ■

Borri becomes PCL

UPS specialist Borri Ltd has re-branded and is now 'Power Control Ltd'. PCL says it remains the UK partner for Italian UPS manufacturer Borri Spa, but adds that its increased independence will allow it to establish itself as a recognised trade contractor and offer a wider pool of equipment, technical services, project solutions and development tools. "Changing our name to PCL will enable us to respond to the changing market and customer demands where we will be placing greater emphasis on offering total project solutions," says sales director Mark Trolley. He adds that the business will operate as usual and remains "100 per cent committed" to Borri Spa's technologies. ■

Trimble manages Indesit fleet

Domestic appliance maker Indesit will implement Trimble's *GeoManager Fleet Management* and *Driver Safety* systems across its UK fleet of vehicles. Indesit says the technology will support its primary objectives of promoting a safe driving culture while improving fuel efficiency and overall ROI across its business.

GeoManager will provide the firm with real-time visibility into its day-to-day fleet operations, helping it to identify, manage and improve key areas such as fuel efficiency, vehicle utilisation and maintenance planning. In addition, with the availability of real-time status information, Trimble says communication with customers and drivers about service call timing can be improved.

Driver Safety has been installed to enable Indesit to review driving behaviour across its fleet. According to Trimble, improvements in driving style and speed can not only help reduce accidents and vehicle downtime, but can also lead to further reductions in fuel consumption.

Trimble says its technology will support Indesit's main aims of promoting safe driving while improving fuel efficiency.

"In an initial pilot study with Trimble, improvements in fuel efficiency were realised across the fleet with an increase in MPG of over 18 per cent," says Alistair Dobson, Indesit's service operations director. "This improvement was due to a reduction in vehicle idling and RPM, as well as an increase in more efficient driving across the fleet, indicated by improved *Driver Safety* scores."

Trimble's solutions use positioning technologies such as GPS, lasers and optics. Wireless technologies such as cellular are also deployed to deliver the solution to the user and to ensure tight integration of the field and the back office.

Indesit's vans each have a telematics black box that transmits data over a mobile network to Trimble's data centre. Trimble also implemented a customised version of its system to enable data recording.

For example, it says that because Indesit was focused on improving fuel efficiency, it set metrics to record data around MPG and to measure the effectiveness of drivers. Senior managers then receive bespoke reports which detail the trends related to fuel efficiency. ■

Hospitality group gets off the cloud with JMC IT

Salford-based JMC IT will provide its round-the-clock *SupportCare* service for business critical equipment and applications at the Northcote Leisure Group.

Implemented at the group's head office, luxury hotel and Michelin-starred restaurant in Lancashire, the project is part of Northcote's wider multi-million pound redevelopment of its hospitality services.

Under a five-year deal, JMC says its system and support will ensure business continuity and provide extra flexibility for the company's bookings and on-site customer services. The company adds that it proved its worth almost immediately during a major power cut, preventing any potential system loss or issues and allowing business to carry on as usual once power returned.

JMC MD Andrew Burgess claims that Northcote now has one of the "most comprehensive" managed service solutions on the market. "The scalable on-premise network platform that we have delivered provides Northcote with the flexibility and autonomy they were looking for to support evolving business and redevelopment needs," he says.

Furthermore, and in what is perhaps a surprise move given today's IT trends, the contract also includes a new IT platform which will see the group migrating away from a cloud system to an on-premise solution. JMC says the move provides Northcote with much-needed autonomy over its networking system. ■

Northcote Leisure Group runs a luxury hotel and Michelin-starred restaurant in Lancashire.

SSC standardises infrastructure with UC platform

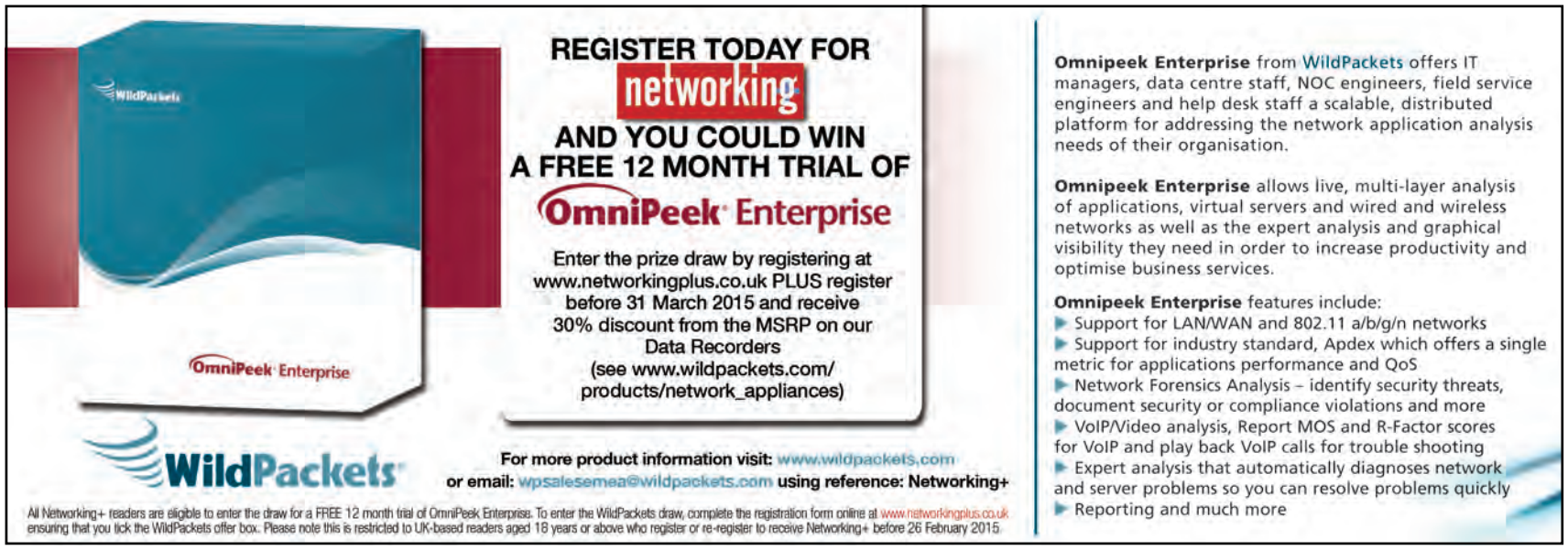
South Staffordshire College has more than 10,000 students based across its campuses in Cannock, Lichfield, Rodbaston and Tamworth.

Midland Telecom has been selected to upgrade South Staffordshire College's (SSC) entire communications infrastructure to transform the way that more than 10,000 students and 900 staff work.

SSC's campuses across the county include Tamworth, Lichfield, Cannock and Rodbaston. Midland Telecom will deliver a full unified communications suite, including web collaboration, mobile conferencing and presence technology. It will also provide ongoing support and maintenance services across the campuses.

Midland will deploy Unify's *OpenScape Business* to replace the college's existing *HiPath 3000* system. The new all-in-one platform will help SSC streamline its processes and technology. It will mean a standardised infrastructure across the campuses, enabling the college to become more agile, make efficiency savings, and increase staff and student productivity.

Following the implementation, staff will be more visible and contactable regardless of site. In addition, *OpenScape's One Number Service* is expected to increase efficiency by removing the barriers to collaboration between campuses. ■



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Cloud apps enable National Express rail customers to plan rail trips by postcode

National Express' rail franchise c2c is using cloud services and mobile technology from IBM to provide real-time travel planning and data analytics to enable better business decision-making.

c2c runs services between Fenchurch Street and Shoeburyness, serving 26 stations in East London and South Essex. Using data from the Internet of Things, IBM has integrated information from sensors (known as 'timing points') along rail tracks to pinpoint a train's location in real-time. This data has been correlated with timetable information to enable punctuality reports based on station-to-station and full journey estimates.

The solution is delivered via the *IBM Intelligent Operations Centre*, a cloud-based data management and analytics platform. IBM says using SaaS enables National Express to integrate data from multiple sources. It adds that the software can be rapidly deployed to deliver data from sensors and devices, and provide the analytics that are used by a range of new apps that have been developed using the *IBM MobileFirst Platform*.

In what's said to be a first for UK rail, National Express says the apps will enable users to easily plan their trips by postcode and track specific trains. Platform staff equipped with mobile devices will also be able to provide customers with real-time information on train schedules and status.

c2c was convinced it could gain actionable intelligence from its Big Data, according to commercial director Ruth Harrison-Wood.

IBM says by using its cloud services, c2c will be able to analyse high volumes of previously fragmented data from external and internal sources. For instance, detailed and personal punctuality reports for each passenger are just one way that will enable it to derive valuable insights and situational awareness, often in real-time.

By the end of this year, c2c also plans to offer passengers an app that will calculate delays up to the minute and automatically repay compensation owed to smartcard holders each month.

"We knew intelligence could be driven from the high volumes of operational and customer data we generate daily," says Ruth Harrison-Wood, c2c's commercial director. "IBM has helped us get a holistic view of operations that will allow us to improve customer satisfaction in multiple areas." ■

Orange helps 3M offer 'health solutions as-a-service'

3M aims to strengthen its health business in Europe by offering its solutions 'as-a-service' via the cloud. As a result, it is now using the *Flexible Computing Healthcare* cloud platform from Orange Business Service (OBS) to host both its medical applications and patient information.

The firm has recently developed the *True Definition Scanner*, an intra-oral digital camera which is said to provide highly accurate digital scans. It also handles secure data transmissions to production centres where prosthetic and orthodontic works are produced via 3D printers.

3M therefore needed a secure platform to transmit this data. But one of its main challenges was to implement a flexible infrastructure to deploy its solutions in its various European subsidiaries, while complying with local regulations. For example, the French Ministry of Health has stringent regulations that require patient data be hosted by a government approved organisation.

OBS is the B2B subsidiary of mobile operator Orange. When designing the international implementation strategy for 3M's *Flexible Computing Healthcare* platform, it worked closely with the Orange Consulting business unit, using its market research and expertise for actual country-by-country deployment.

3M has expanded its family of digital solutions and now offers its new *Unitek Treatment Management Portal* for *Incognito* which is also hosted by Orange. TMP is an online order management platform connected to the *Lingual Incognito* orthodontic production system. It handles data exchanges, visualisation of patient dental scans, malocclusion models, setup proposals, and more. ■

3M's True Definition Scanner can send dental data to production centres where orthodontic works are produced using 3D printers.

Surrey CC migrates to shared services cloud hosting platform

Surrey County Council (SCC) has migrated its existing data centre infrastructures to a new shared services cloud hosting platform.

SCC is said to be one of the largest councils in the UK, and this latest project supports its financial strategy to save at least £200m over the next five years.

The new platform will not only allow it to benefit from connectivity, cloud, virtualisation and application hosting services, but also offer these to other local government and healthcare bodies across the region.

The new IaaS platform is housed in a 170-rack data centre and will offer each of Surrey's borough and district councils a centrally-managed and serviced infra-structure and computing environment. It will enable them to move away from having to own and support their own separate dedicated infrastructures, data centres and IT estates. The ultimate aim is to consolidate and use a standardised, common platform and application set across all the councils.

SCC is using the software-driven *Virtual Computing Platform* from web-scale converged infrastructure specialist Nutanix. The vendor claims this natively converges compute and storage into a single solution to drive "unprecedented simplicity" in the data centre. "Customers can start with a few servers and scale to thousands, with predictable performance and economics," says Nutanix.

It adds that its platform can support multi-hypervisor environments and is also easy to manage and deploy – SCC's entire platform was ready for service within four months of project start, says the firm. ■

UltraLinq to bid for NHS contracts

Hitachi Data Systems (HDS) says its playing an integral role in UltraLinq Healthcare Solutions' UK infrastructure.

US-based UltraLinq provides a cloud-based medical image management solution that allows medical exams to be securely uploaded, reviewed, distributed and archived from anywhere users have an internet connection. It says this allows them to focus on improving patient care and efficiency rather than on IT.

After seeking a scalable platform to support its rapid commercial growth, UltraLinq transitioned to Hitachi's cloud services infrastructure at the end of 2013. The firm has now relocated its primary data centre from London to Redcentric's facility in Reading which has secure N3 network connectivity. This means UltraLinq can tender for NHS contracts.

HDS is supporting UltraLinq's critical business applications with the deployment of its *Unified Storage* platform and *Compute Blade* systems. These are delivered as a service to minimise initial overhead costs, and are said to have enabled UltraLinq's UK business to provide high performance and scalability. ■

Ideas at work.

The Met Office, Exeter.

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While the economy is slowly recovering from the financial downturn, government departments must still ensure that their networks provide a cost-effective service.

Blackpool hybrid network

With attractions such as the Pleasure Beach and its iconic tower, Blackpool receives around 10 million visitors each year. And while it may have the image of a 'traditional' seaside town, its council's IT network is far from conventional.

The hybrid network features a mixture of existing as well as new infrastructure, using the latest hardware and software. While that may sound simple in theory, it was difficult to achieve in practice.

In Blackpool's instance, necessity was very much the mother of innovation. While its old network was no longer adequate, ripping everything out and starting entirely anew would have been too expensive.

In 2012, while the council was consolidating its headquarters, main network hub locations and data centres, its revenues were falling, and demand for its online services, such as cloud-based education applications, were increasing. It considered the option of a traditional leased line approach, but decided against it, choosing instead to consider a solution that used a range of technologies.

The end result was an Official Journal of the European Union (OJEU) tender which was won by Lancaster-based firm The Network People (TNP).

As part the £3.2 million, five-year managed services deal, TNP has, designed and built the council's WAN. It say this will help Blackpool take advantage of a range of technologies to make significant savings over the length of the contract, and connect more than 100 schools, libraries, business incubator sites and public buildings.

The technologies TNP deployed for Blackpool include: LLU (local loop unbundling); carrier class microwave radio systems using point-to-multipoint 60GHz and 80GHz frequencies as well as licensed bands; and fibre-optic cabling.

The council owns all the infrastructure which adheres to the PSN structure, and it is providing resilient, secure connectivity to the town as well as surrounding areas.

"The tender was won as a framework for six other councils in the Lancashire area," explains TNP founder and director Chris Wade. "Subsequently, we are now installing up to 100-plus corporate sites in the Blackburn-with-Darwen Council area under a similar arrangement where the local authority is custodian of a network operated by TNP."

Wade adds that Blackpool Council has since extended its network to incorporate a data centre at its core, a new Cisco *Unified Communications Manager*, a guest and corporate Wi-Fi solution with support for BYOD, and WAN connectivity into the local NHS data centre."

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Solihull saves by improving DC power efficiency

Like all councils across the country, the Metropolitan Borough of Solihull (*pictured below*) is having to cut costs while trying to maintain its services at the level residents require and demand.

One area the council looked at to find savings was in its IT infrastructure, specifically its data centre. It began looking for a supplier and after holding talks with several companies its eventually opted for Reading-based specialist AIT.

"The AIT team really listened to our needs and then recommended a bespoke solution that fitted our exact requirements with minimum costs for the council", explains Philip Parker, infrastructure and data centre manager, Solihull Council.

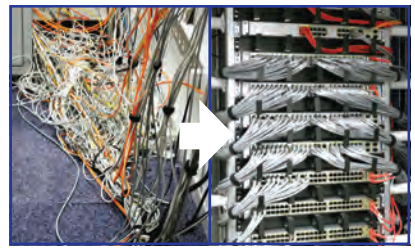
The AIT operations team looking into the council's data centre had a brief to improve efficiency and cut costs. They undertook a detailed audit of the data centre, installing a branch circuit monitoring (BCM) solution. This monitored additional air conditioning and facilities power loads, and was integrated with the council's existing rack power monitoring solution to manage and minimise running costs.

Deeper investigation revealed that the power infrastructure had been modified in an *ad-hoc* manner over time. According to AIT, it was no longer clear to the current operations team whether each rack was fed via two separate power feeds or had proper UPS backup for resilience. So the work also entailed re-running and re-labelling power feeds to cabinets to ensure server racks were fed by two independent A and B feeds, all backed-up with a UPS.

AIT also improved the data centre's environmental management by adding temperature monitoring around the AC units, which enabled better control of room temperature. In addition, air flow switches were fitted, allowing remote control and monitoring of the units.

AIT continues to provide a managed service to Solihull Council and its data centre team, providing power usage effectiveness, temperature conditions and power usage monitoring across the entire facility on a monthly basis.

"Solihull Council now boasts a highly resilient, full monitored data centre, allowing it to provide dependable services," says the company.



Department on call

In this era of massive data and large-scale hack attacks, it's understandable when a government department tries to be as discreet as possible about its IT upgrades.

The government department in this case is based somewhere in Strathclyde. It is one which handles millions of enquiries a year from all over the UK and its telephone system was straining under the weight of demand. It therefore needed to upgrade its communications infrastructure and called in Cable-Talk.

To handle the massive volume of calls and operate more efficiently, the department had earlier installed a VoIP system. However, it became obvious that its existing Category 3 cabling infrastructure could not cope with the sheer volume of data, with errors said to be occurring on a daily basis.

The department decided that it was essential to install new infrastructure and initially asked Cable-Talk to test the existing cabling within the building. It identified a high percentage of failures on the existing Category 3 system and put together a detailed quotation to install Category 6 cabling, and was duly awarded the contract.

Cable-Talk opted for a structured cabling system offered by Excel, a brand and company owned by converged IP solutions specialist Mayflex.

Cable-Talk installed 1,936 Category 6 data locations in the government building, spread over four floors. The solution was installed to run alongside the existing Category 3 network.

Excel's Category 6 U/UTP LSOH cable is said to offer optimal support for high-speed data protocols, delivering 1Gbps performance. Installed along with Category 6 patch panels, Cable-Talk says it doesn't require any special installation tools and is designed to meet or exceed the latest ISO EIA/TIA requirements.

Category 6 *6c* modules were also used to also allow for fast and easy installation with a low-profile finish.

Cable-Talk says the entire job was completed in 10 weeks during 12-hour evening shifts and at weekends. And through its status as an official Excel Cabling Partner, it can also provide the unnamed government department with a 25-year warranty on Excel products.

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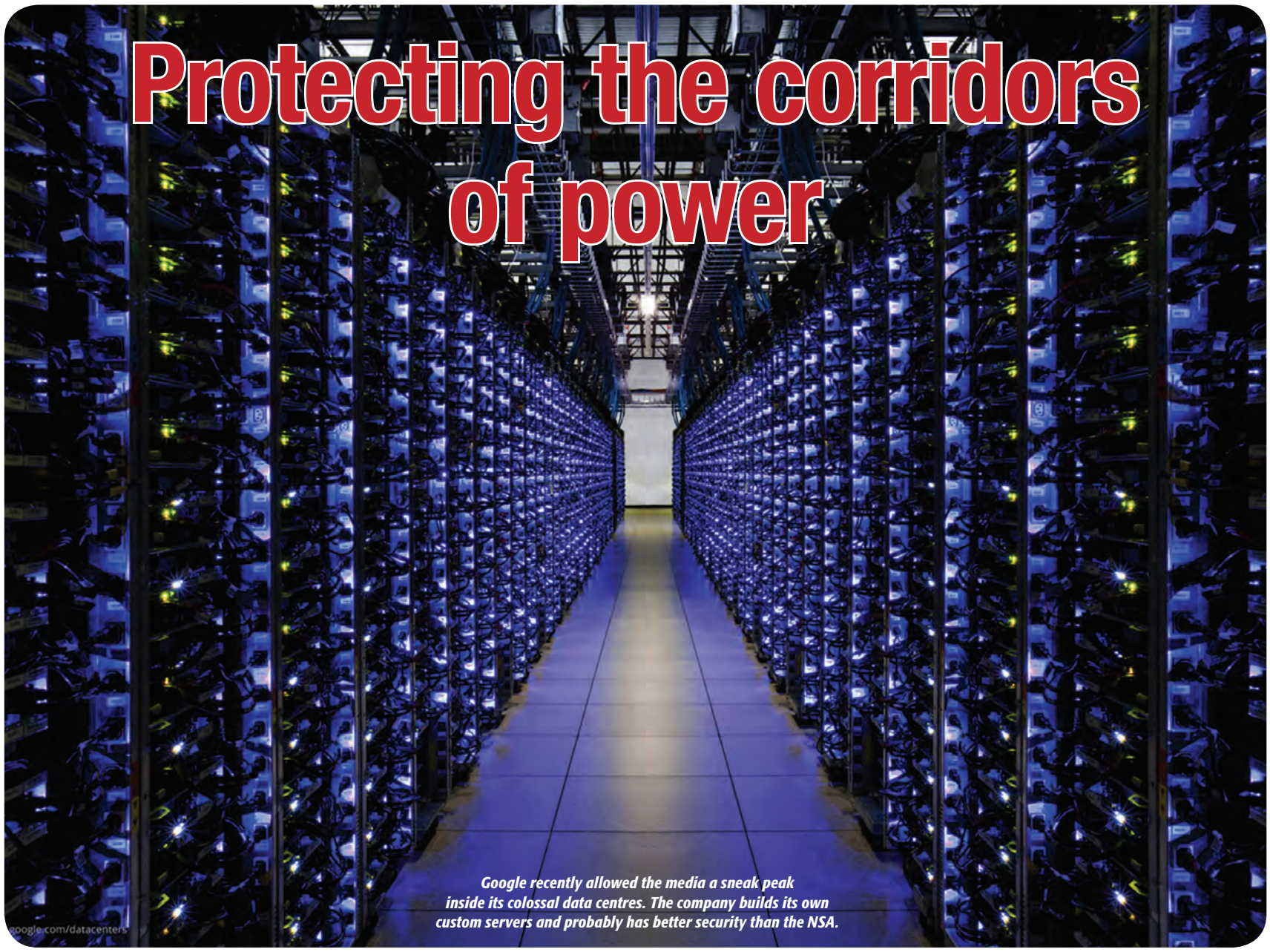


Google recently allowed the media a sneak peak inside its colossal data centres. The company builds its own custom servers and probably has better security than the NSA.

Ask most professionals about the security of data centres and most would agree that everything that can be done to protect customer data is being done. But ABDUL MONTAQIM wonders what, if anything, can be done to stop the most determined hackers.

An unprecedented wave of massive data breaches over the last few years has raised questions about the security and privacy of information held on any computer anywhere on a network, including that which is kept under lock and key at high-security data centres.

One of the most recent high-profile examples is the attack on Sony Pictures, which was hacked in the run-up to last Christmas. Sensitive corporate data, as well as yet-to-be released films, were suddenly made public. The incident led to the now infamous controversy over *The Interview*, the satirical film about a plot to assassinate North Korean leader Kim Jong-un.

The US accused North Korea of the hack. It denied the allegations and challenged President Obama to show evidence of its involvement. This was largely ignored by The White House and instead, January saw the launch of a new initiative from Obama. Among other measures, he wants Congress to pass legislation requiring firms to inform customers within 30 days if their data has been hacked.

But even with the most stringent legislation, and with the rise of cloud and increasing amounts of enterprise data being held in data centres, how safe can information be from hackers?

"Cyber criminals are bypassing traditional perimeter security, even though companies have spent billions of dollars on it," says Tim Eades, CEO of data centre security specialist vArmour. "Cloud computing and virtualisation are transforming the data centre and also creating more blind spots. You can't protect what you can't see."

Robert Renzulli, director of global security operations centres at CenturyLink, agrees: "Data centres are still evolving and attempting to keep pace with emerging threats, just as they always have. That will never change and is perpetual in the internet age, regardless of cloud computing."

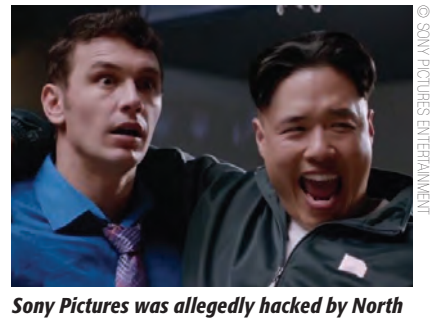
The evolving nature of the threat

With cyber criminals launching ever more sophisticated attacks, it's perhaps understandable if enterprises are more wary of trusting their information to data centres. Tony Marques, cyber security consultant at Encode Group, says it's vital that, as a starter, cloud providers demonstrate compliance to baseline best practice standards such as ISO27000 and PCI DSS.

However, even with those certifications, the need to have the data close to the end user access point often outweighs security concerns. Brian Chappell, EMEA and APAC director of technical services for security firm BeyondTrust, says: "Cyber criminals are becoming more sophisticated in many ways. But it's still concerning that the methods of initial breach still revolve around mechanisms that are largely preventable. Exploiting known vulnerabilities and phishing still represent a significant proportion of the successful attacks."

While worries about security are often blamed for holding back the cloud market, this may not necessarily be a bad thing, according to Ark Data Centres. "Customers who were always serious about security have always been concerned," says its CTO Jason Liggins. "This has hampered the take-up of public cloud offerings, but companies who were previously unaware of the threat are now driving the security marketplace and are expecting data centres to be physically secure fortresses."

But there are those who believe we may all be worrying a little bit too much. For instance, the Data Centre Alliance reckons customers are not wary about trusting data centres with their information, as executive director Simon Campbell-Whyte points out: "I would suggest it's more likely that the opposite is the case. Well-managed and secure data centres are, in the vast majority of cases, far more secure than the general office environment.



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Sony Pictures was allegedly hacked by North Korea because its supreme leader, Kim Jong-un, was depicted in The Interview (above), as an assassination victim.

"But threats can come from many sources and many layers and links in the chain. Data centres are but one link, and organisations should check with their supplier if the data centre is appropriate for the data they are putting in it."

Campbell-Whyte is more concerned about the physical security of a data centre.

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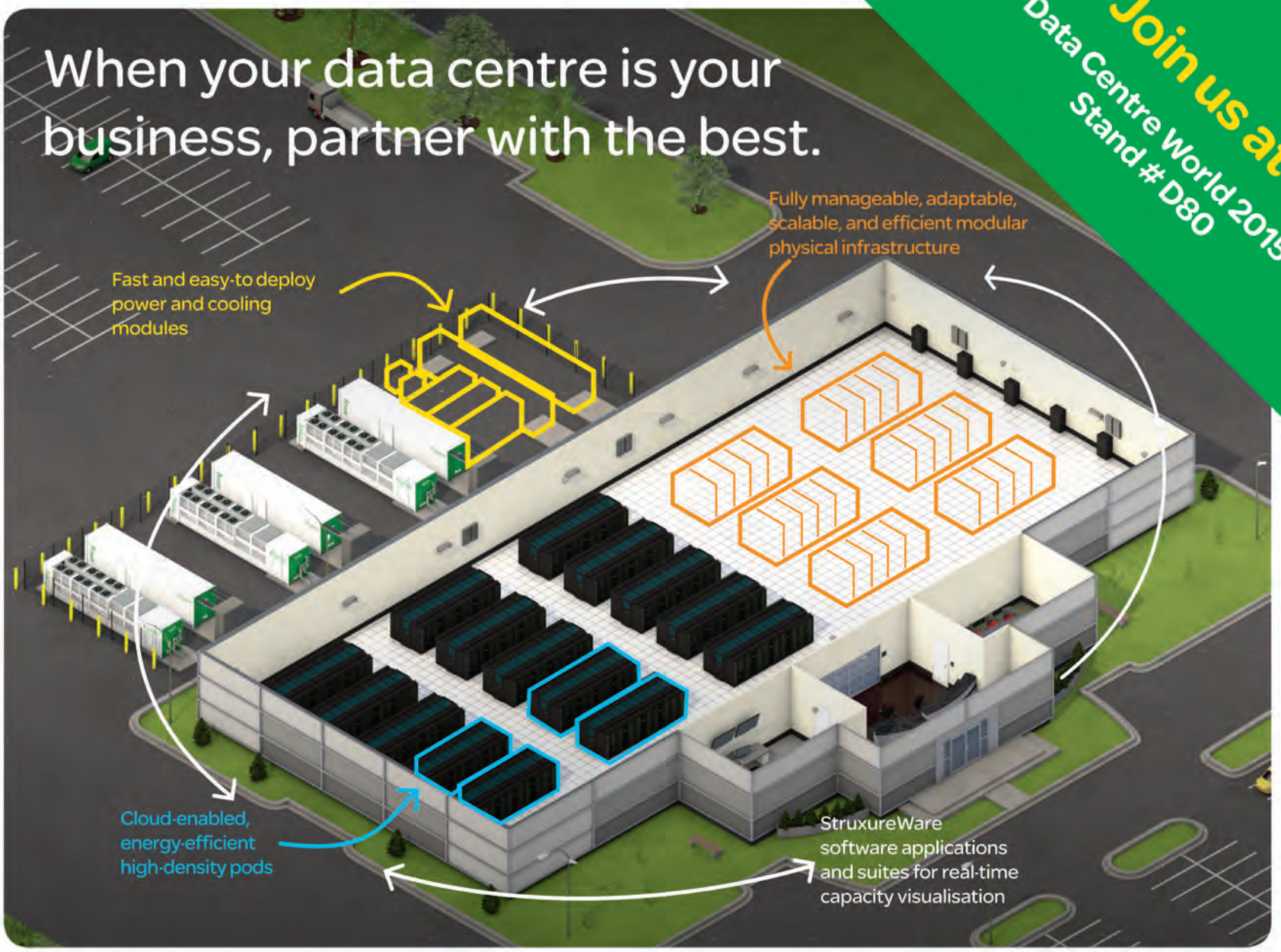
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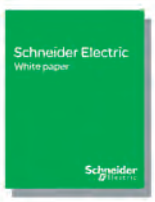

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"A data centre's primary security function is access control and physical security, making sure only authorised persons are granted access to the server equipment."

Specific attacks

A physical security breach need not be a daring, commando-style attack on a data centre. It could be a lot more mundane, as Mark Edge of SaaS provider Brainloop, explains: "Hackers and organised crime may hog the headlines when it comes to IT security, but enterprises need to make sure those headlines don't distract them from a far more common threat to data security – their employees."

Edge says staff are often the unwitting cause of a significant number of incidents. "For example, the UK government's 2014 Information Security Breaches Survey found that 58 per cent of large enterprises suffered staff-related security breaches and 31 per cent of the worst breaches during the year were caused by inadvertent human error."

CenturyLink's Renzulli agrees. He says the majority of publicised security breaches over the past couple of years mostly come down to security awareness and vigilance by the employees and professionals supporting the data centres. He adds that the natural response is to evolve and adapt to the additional threats posed by cloud computing.

When it comes to the specific types of attacks that have so far been seen, Renzulli goes on to say that they still traditionally fall into one of several categories: cyber crime that is usually for financial gain; data theft such as industrial espionage, electronic extortion, leverage, etc.; 'hacktivism'; network-based attacks to cause disruption, destruction and denial of service; and those that are opportunistic. The latter typically involves the collection of sources for building or creating botnets, spamnets, malware and toolkits that allow for access to devices and networks.

Possibly the worst kind of attack is the APT (advanced persistent threat), whereby an attacker gains access to a network and stays there undetected. "The average [APT] attacker is inside a company network for nearly eight months," says vArmour's Eades.

So the challenges faced by data centre network managers when trying to keep one step ahead of the cyber criminals are many and varied. Data and customer volumes are probably the "biggest headache" according to Steve Armstrong of IT security training organisation, the SANS Institute. "Data volume issues arise when new customers are provisioning systems and huge configuration changes – OS installs, database movement, or redeployment. Additionally, many customers move to cloud computing for the network bandwidth and therefore intend to move high volumes of data. Logging this data is a real problem."

He adds that sometimes what occurs in these types of jobs is NetFlow sampling, which can be problematic for security and incident response requirements. "Your chance of capturing a malware beacon in that is almost zero," he warns.

BeyondTrust says cloud network managers have a huge responsibility. "They are bombarded constantly with huge volumes of data around breaches which could lead them to look for the latest technical solutions that promise secure environments," says Chappell.

But he goes on to advise managers not to lose sight of the basic best practices that lay the foundation for a successful security strategy: "Good configuration management, effective vulnerability analysis and mitigation, least privilege user access policy, and comprehensive coverage for monitoring and reporting. Get the basics right, and identifying the next tool or policy requirements is a whole lot easier."

"Deter, detect, deny, delay and defend"

But, as Liggins points out, there are "many more clever criminals than there are people protecting the data". Which is why, perhaps, he likens the physical security of Ark Data Centres to a castle of old. "The walls are both high and thick, but breach them and there is another with different mechanisms of protection. Any breach of the first will be detected and responded to. And Ark data centres have many layers of physical security to deter, detect, deny, delay and defend the IT infrastructure of its customers."

While there are many solutions data centres can deploy to guard themselves against attack, most experts would agree that there is no simple answer. One thing the Encode Group recommends for cloud

"Cyber criminals are bypassing traditional perimeter security, even though companies have spent billions of dollars on it."

Tim Eades, CEO, vArmour

service providers to have is a security operation centre capability utilising security incident and event management (SIEM). This also features auditing functionality to monitor the data centre's internal and customer-facing compute and systems.

"Data centre security is woven into every aspect of data centre operations," says Marques. "Data centre managers should therefore be familiar with perimeter, and inside the perimeter, defence strategy and deployment. They should have and maintain a good general awareness of the threat landscape – especially around APTs."

Renzulli says that while solutions and technologies vary they should always allow for mechanisms that provide protection at the mobile device, web access point, application and database layers. He advises an overall "in-depth defence strategy" that comprises people, processes and technology measures that can prevent security breaches, and provide an organisation time to detect and respond to a breach or attack.

According to Renzulli, a high-level network solution to guard against threat encompasses: round the clock monitoring; notifications and alerts; incident response; mitigation and remediation; forensics; and intelligence.

Chappell's advice is to start with a comprehensive vulnerability management solution, and to eliminate as many of the well-known exploits as possible.

"Combine that with a rigorous configuration management approach so that every system is deployed in a secure state. And then monitor that configuration to ensure there's no 'drift' over time. Establish a real least-privilege approach to access for not only your own staff but those of customers as well – that will limit the opportunity for hackers with newly discovered exploits. An efficient SIEM goes without saying."

The SANS Institute offers more specific guidance. Armstrong says client isolation (through strict, well-configured virtualisation), network isolation of vLANs, and NetFlow monitoring of all physical and virtual routers should give some protection and remediation options. "Monitoring of client-to-client connections is a good way of detecting internal attacks," he adds. "However, configuring the IDs for that is exceptionally hard and a continuous project as clients arrive, leave and move."

A view to a skill

The solutions may be available but do data centre managers have the skills needed to counter the hackers? Here, the prognosis seems to be that while there are many skilled people in the industry, the threats they face are too varied and complex to be easily thwarted.

"The skills necessary to counter hackers and criminals are multi-disciplinary and specialist," says Liggins. "It is unusual to find all such expertise in one person. Network managers need to have knowledge of all the areas that a hacker may use, and employ a range of experts to implement and monitor the counter measures."

Chappell believes that most data centre managers have the skills to identify threats, and employ the tools and teams necessary to secure data centre environments – it's just a question of priority. "They may not always be given the time, funds or resources to do so, and that's an issue not only with senior management but also the data centre managers themselves. It's important that in any security project, all the stakeholders are committed to its delivery, and fully understand and agree with the need."

Armstrong echoes some of this: "Many of the larger data centres do indeed have the skills. However, they are not common and many of the smaller organisations simply don't have the time, staff or skills to match a determined attacker.

"This is often a balance of service too, as the smaller centres are more likely to give a more personal service to the small buyer. So while options and configurability are wins for the small provider, the lack of security skills is a negative feature. That said, the view of many small businesses seeking a cloud provider is that they believe [an attack] will not happen to them, and that they will 'cross that bridge when it comes'."

While its seems that data centre operators may be reasonably confident of their defensive capabilities, others have less confidence in an individual organisation to adequately protect its own information.

"Unfortunately, companies lack the skills and resources to successfully prepare for and address cyber security," says Eades. "Therefore, data centre managers should be seeking a solution that simplifies security management and provides a consistent layer of security across all of their assets.

"Security has to be less intensive to manage. Managers can't manage thousands of policy rules on each machine. It has to be automated. Security should be provisioned with and follow the workload through its lifecycle without manual intervention."

"There are many more clever criminals than there are people protecting the data."

Jason Liggins,
CTO,
Ark Data Centres

As complicated as the security situation is at the moment, Renzulli believes people will adapt to meet any challenges, just like they have always done throughout human history. But this won't happen automatically.

"Data centre managers themselves should have security and protection awareness knowledge. They should make sure that their teams supporting the data centres are consistently trained, and collaborate with the appropriate security teams for the in-depth security skill set to counter hackers." ■

off-the-shelf: power distribution units

Socket it to 'em!

With a great IT estate comes great responsibility for power. Here are some of the latest PDUs that could help ease the burden.

Emerson Network Power reckons its *MPH2* managed rack PDU offers one of the highest temperature tolerances in the industry.

According to the firm, rack PDUs are typically located in the back of the rack toward the hot aisle, exposing them to some of the harshest temperatures found in a data centre. In this location, Emerson says it is fairly common to see temperatures of 50° Celsius. It says the *MPH2* is rated to operate at up to 60° Celsius which contributes to system availability.

Furthermore, the firm claims the unit has the lowest energy consumption of all switched rack PDU designs. Based on a comparison of switched rack PDU models for a typical 100 rack data centre with a PUE of 1.9, Emerson believes the *MPH2* could deliver an annual cost savings of £64 per rack, or £6,400 for a midsize 100 rack data centre.

The *MPH2* can be installed in most racks without the need for any tools. It can also be delivered pre-installed in Emerson racks, enabling fast deployment and reserving data centre resources for other critical tasks, according to the firm.

For further savings, the company says up to four *MPH2*s can be interconnected as a rack PDU array. They support all major industry standard management, authentication and encryption protocols.

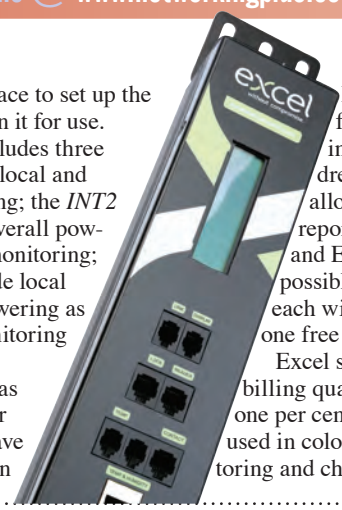
Additionally, they integrate rack level power and environmental monitoring data with higher level data centre management software. The PDU can also be used with Emerson's RPC2 communications module.

Excel has released three new units in its range of intelligent PDUs (iPDUs). Each is available in a combination of socket-type choices, including UK, Schuko, C13 and C19. They can be manufactured with up to 48 sockets and both single- and three-phase versions are available.

Each model comes with embedded HTML web pages that can be viewed as either HTTP or more secure HTTPs. These enable users to monitor and control the PDU's power usage, as well as providing the interface to set up the device and commission it for use.

The new line-up includes three versions: the *INT1* for local and remote overall powering; the *INT2* for local and remote overall powering and per socket monitoring; and the *INT3* to provide local and remote overall powering as well as per socket monitoring and switching.

Each unit can work as an individual master or run as a master and slave system. One master can have up to 31 slaves, all from one IP address, reducing the need for multiple addresses. The software supplied allows the user to monitor and report on up to 50 IP addresses, and Excel says it is theoretically possible to have up to 1,600 PDUs each with up to 48 outlets, all from one free software licence.



Excel says its iPDU range provides billing quality accuracy to better than one per cent, allowing the units to be used in colocation centres for the monitoring and charging of power used.

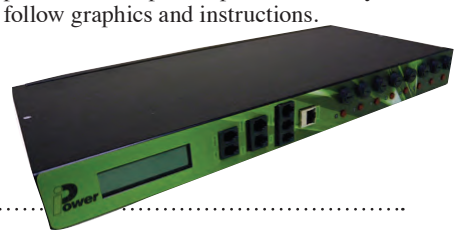
G4 has unveiled its second generation *iPower* managed PDU, offering more hardware functions and new enhanced HTML pages with easy setup procedures.

The firm says the measuring ability of its *iPower* PDUs conforms to the requirements for Class 1 fiscal quality metering and covers all parameters of the electrical supply including harmonics.

As standard, *iPower* now comes with full environmental monitoring for temperature, humidity, smoke and water, and also remote security functions for controlling rack access via a keypad or swipe cards. It is configurable for overall power monitoring, per socket monitoring, or per socket monitoring and switching.

As with all its PDUs, G4 says *iPower* will run on a single- or three-phase supply, and can be made with any mix of outlet connectors as required. It adds that a "really clever" feature is the ability to tailor the design by fitting intelligence to all or just some of the outlets. For example, a PDU can be manufactured with 24 outlets where only four are monitored or switched; the rest would just have overall monitoring. G4 says this represents "significant" cost savings.

The firm adds that while PDU management platforms are expensive from major corporate manufacturers, *iPower* comes supplied with free and licence-free software, *PDU Agent*. G4 says this runs just like any other management system, logging and storing events from up to 1,600 devices, and claims the platform is simple to operate with easy to follow graphics and instructions.



Raritan's *PX3* is billed as a next-generation rack iPDU with energy-saving features and other enhancements to help data centres measure and monitor energy, cooling and overall health.

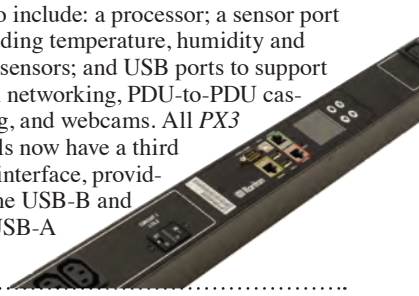
The new iPDU switched models use patent-pending latching (bistable) relays that do not require power to stay in their designated on or off states. Raritan says that by using the *PX3* a 100-cabinet data centre could save more than $6,000 (£4,000) per year in energy and cooling costs.

In the event of a power interruption, the unit can be pre-configured to have relays stay latched in their last state or go through a custom power-up sequence.

Raritan believes its iPDU makes racks smarter by providing real-time, outlet level energy monitoring, environmental monitoring with plug-and-play sensors, and other important information. Using the *PX3*'s LCD or a web browser, data centre operators can monitor energy, temperature, humidity and the status of PDUs, lines, circuit breakers and individual outlets.

Data gathered by the device – which is said to measure real-time kWh energy consumption with one per cent billing-grade accuracy – can be further analysed and monitored using Raritan's DCIM *HYPERLINK Power IQ* energy management software.

The vendor also claims its iPDU is the first to include: a processor; a sensor port for adding temperature, humidity and other sensors; and USB ports to support Wi-Fi networking, PDU-to-PDU cascading, and webcams. All *PX3* models now have a third USB interface, providing one USB-B and two USB-A ports.



Tripp Lite's *HYPERLINK* range now includes eight three-phase switched PDUs in both hardwire and plug-in options that provide up to 28.8kW capacity.

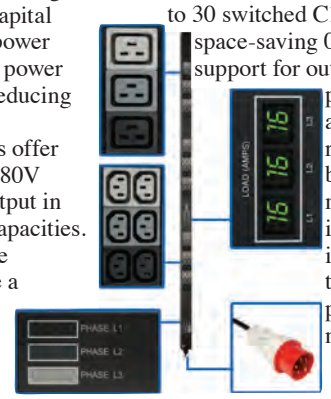
These latest PDUs support 415V three-phase input to the rack. Tripp Lite says this offers a "highly efficient" means of power distribution which yields three 240V single-phase outputs for IT loads. It adds that this 415V power design has been shown to reduce capital costs as well as inefficient power transformations, increasing power data centre efficiency and reducing operating expenses.

As well as 415V, the units offer switched three-phase 400/380V input and 240/230/220V output in 17.3kW to 28.8kW output capacities.

According to the firm, the *HYPERLINK* PDUs feature a "highly accurate" +/-1 per cent billing-grade current monitoring and recording ability for each output phase, breakered load bank and individual outlet.

PDU output current consumption can be displayed in amps locally via visual meter or remotely via web/network interface to warn of potential overloads, making these PDUs ideal for critical IT kit in densely packed rack applications.

Other features include: support for up to 30 switched C13 or C19 outlets in a space-saving 0U vertical form factor; support for outlet level power-on, power-off, load shedding and reboot sequences on real-time or programmable basis; and tool-less mounting for easy installation. Plug-lock inserts are also included to keep C14 and C20 power cords solidly connected to PDU outlets.



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EXIN and HP to develop OpenStack certification

EXIN, the global independent certification institute for ICT professionals, has signed an agreement with HP to develop a certification programme for OpenStack, the open source cloud operating system.

According to EXIN, cloud computing is leading to changes in the role and position of ICT departments and professionals. It has therefore teamed up with HP to develop new training.

Under their agreement, EXIN will develop and deliver the OpenStack software certification and associated exams, while HP will supply course materials and subject matter experts to aid in exam and course development.

In the coming weeks, EXIN and HP will start with the EXIN Foundation certificate in OpenStack software as well as the development of a roadmap, including higher level qualifications and translations into multiple languages.

EXIN accreditation for the programme will also be open to other training providers who can choose to develop their own materials or licence them from an accredited courseware provider. HP will be first to offer the opportunity to gain certification through the programme which will be based upon its established OpenStack course.

OpenStack controls large pools of network resources throughout a data centre, all managed through a dashboard that gives administrators control while empowering users to provision resources via a web interface.

Data centre skills gap 'remains critical'

The skills gap facing the data centre sector will continue to be a critical business concern in 2015, according to Zenium Technology Partners.

In an independently commissioned research report, the firm surveyed 210 senior IT professionals in the UK and Turkey across a variety of sectors and in organisations with 250 or more staff.

It found that 93 per cent were aware that a growing data centre skills gap still exists and 64 per cent said it will have a detrimental impact on their business within the next 1-2 years. But despite this awareness, only 29 per cent said they had put measures in place to deal with the issue, while six per cent believed that the skills gap was "nothing to worry about".

The report also revealed that those who are more likely to migrate to new facilities owned by their company in the next five years were most concerned about the detrimental impact of the skills gap (87 per cent), whilst those outsourcing to a third party were less troubled (65 per cent).

"The industry has been talking about the impending doom that the skills gap may inflict on the data centre sector for some time now, but not much progress seems to have been made in tackling it head on," says Zenium founder and CEO Franek Sodzawiczny. "It's good news that outsourcing always becomes a more popular business choice when belts are tightened, but if operators don't develop a long term view on how best to manage training and recruitment, they will undoubtedly suffer."

According to Gartner, the data centre industry is now annually worth around £150m. The Centre for Economics and Business Research adds that the industry will have created almost 300,000 new jobs between 2012 and 2015 in cloud computing services alone.

This latest study from Zenium follows on from its warning last year that data centre technology was not fit for the future *(see News, Nov 2014)*.

NEW COURSES

Certified Wireless Network Administrator – Lever Technology Group
Lever Technology has announced dates for its next five-day *Certified Wireless Network Administrator (CWNA)* course.

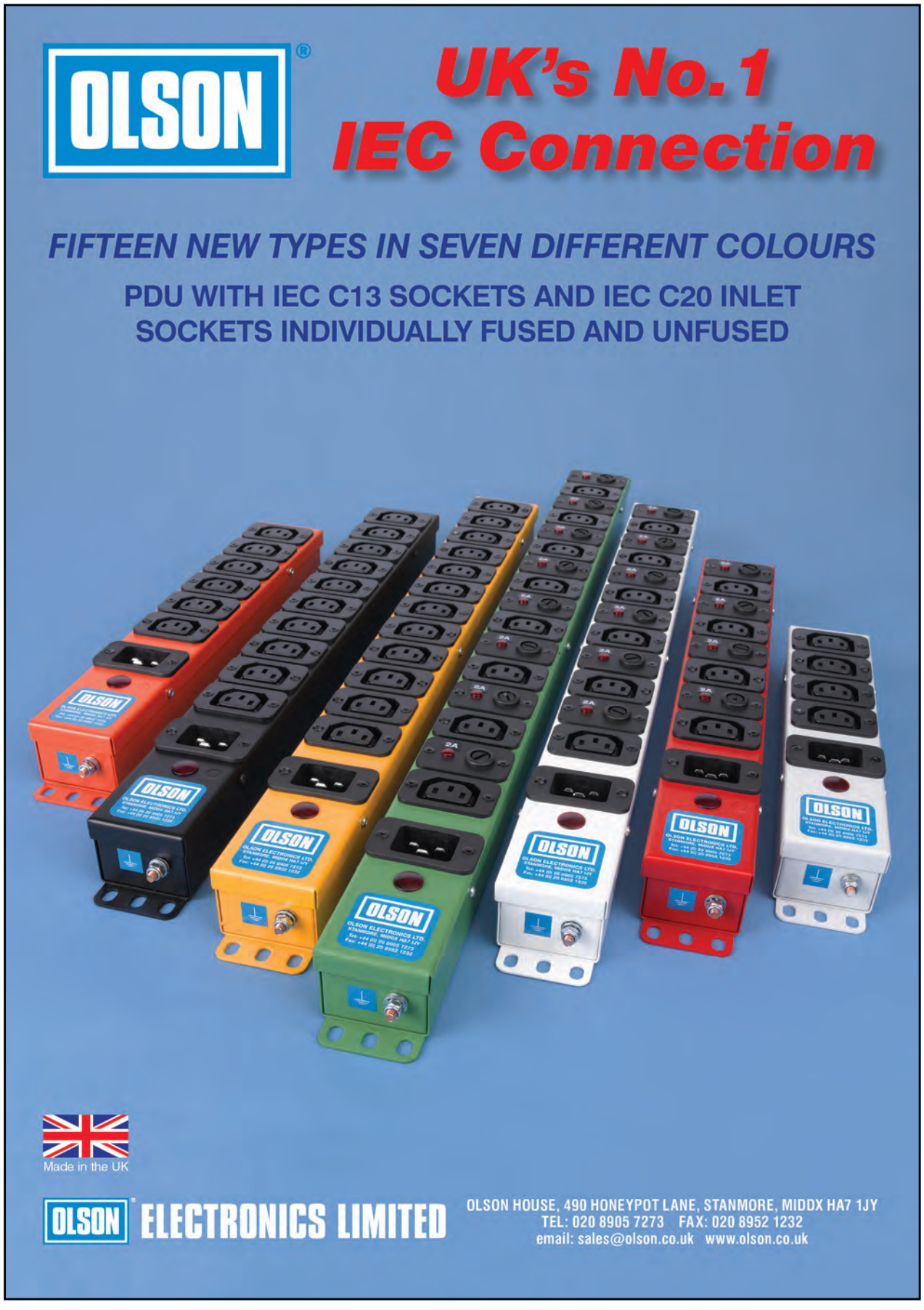
On successful completion, delegates will gain a thorough understanding of IEEE 802.11 standards; describe the rules governing WLANs to comply with local radio regulations; correctly install, configure and support wireless NICs, APs, bridges and WLAN antennas from Cisco Systems *et al*; and much more. This course also qualifies for 36 BICSI Continuing Education Credits.

The next sessions will run at Lever's Leeds technical training centre on 9-13 February and again on 18-22 May, or can be held on site. *www.lever.co.uk*

Cisco Certified Network Associate Boot Camp accelerated – QA
QA's *CCNAX v2.0* is an accelerated boot camp that condenses 10 days of content into five days. The course merges *Interconnecting Cisco Network Devices Part 1 v2.0* and *Part 2 v2.0*. It is aimed at IT professionals seeking the Cisco *CCNA Routing and Switching* certification, and is also appropriate for network engineers involved in the installation and support of enterprise branch office networks.

Delegates will learn how to: describe network fundamentals and build simple LANs; define the characteristics, functions, and components of a WAN; troubleshoot VLAN issues; explain how STP works; understand the idea behind Layer 3 redundancy; and much more.

Due to the accelerated nature of this course, QA expects delegates to already possess existing experience working with Cisco products and a familiarity with the concepts and products covered in the programme. Candidates must book the *CCNA Composite v2.0* course separately. *www.qa.com/CCNAX*



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