

# networking

FIXED & WIRELESS NETWORKS FOR ENTERPRISE USERS

## If we build it, you must pay

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# Government must help pave way for new business technologies

The top three technologies that are set to move from the fringes to the business mainstream over the next five years are artificial intelligence, blockchain and the IoT, according to the Confederation of British Industry (CBI).

In its *Disrupting the Future* report, it highlights how firms and the government must pave the way for the adoption of cutting-edge technologies in order to tackle the barriers that businesses are facing. The CBI says these include the skills shortages that 66 per cent of businesses lack when it comes to adopting AI technologies; the need for regulatory coordination of blockchain; and the security and privacy of devices deployed as part of the IoT.

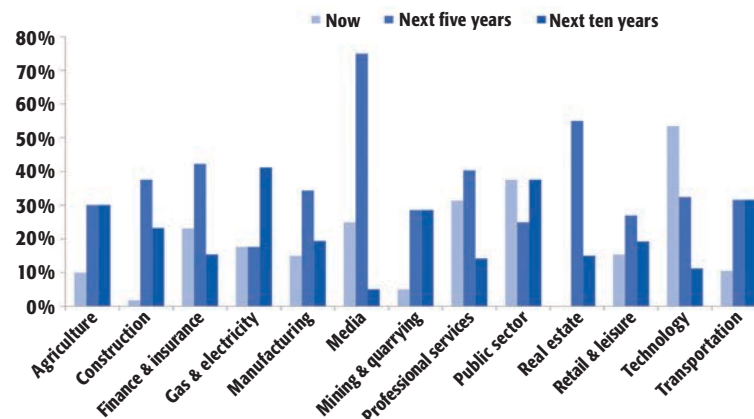
“Artificial intelligence solves problems; blockchain changes how businesses

exchange value; the Internet of Things unlocks big data,” says CBI DG Josh Hardie. “The UK must lead the way in adopting these technologies, but we must also prepare for their impacts.”

Hardie adds that these are no longer ideas on the fringes and are now “shifting rapidly” into the business mainstream.

As part of its *Innovation* survey carried out last year, the CBI found that half of business believe AI will fundamentally transform their industry/market. Twenty three per cent said it was already having an impact on their sector, while 37 per cent said it would have an impact on their sector in the next five years.

In the same survey, 11 per cent also revealed that blockchain was already having an impact on their sector, while



The graph illustrates business' perceptions on when artificial intelligence will impact their sector.

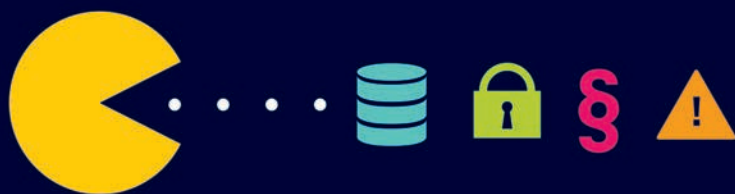
SOURCE: CBI, ADOPTING THE FUTURE SURVEY, 2017

27 per cent said it would do so in the next five years. The CBI describes blockchain as digital, encrypted exchanges that can be anything from the movement of data, goods or money. In practice, everyone in a blockchain network has access to the information about a transaction, and its

verification is achieved by relevant users in the blockchain agreeing to the exchange.

Meanwhile, 54 per cent of businesses said the IoT was already having an impact on their sector, and 30 per cent expected it to do so in the next five years.

(continued on page 2)



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## Jisc protects Janet against DDoS attacks with Arbor

Janet, the UK's national research and education network, will be protected against DDoS attacks with help of Arbor.

Originally the 'Joint Academic Network', Janet now comprises more than 5,000km of fibre and has more than 18 million users that include universities, colleges and research centres. Its backbone runs at 100Gbps with an interconnect capacity of around 40Gbps.

The network is operated by Jisc which offers its member organisations a number of security services, including the network Computer Security Incident Response Team.

The CSIRT's cyber security and networking experts work closely with Arbor on DDoS defence and incident response best practice, and with Jisc's 700+ members to help detect, report and investigate incidents that pose a data security threat.

Jisc and Arbor collaborated on all stages of the design, development and delivery of the new security capability, and with Khipu Networks as the systems integrator. Arbor says Jisc's Security Operations Centre can now leverage the global threat intelligence of its ATLAS infrastructure to stay ahead of DDoS attacks and advanced threats.

ATLAS is a collaborative project between Arbor and more than 300 of its customers who have agreed to share anonymous traffic data totalling 140Tbps which, according to the firm, is around one-third of all internet traffic.

The company adds that the ATLAS Intelligence Feed includes geolocation data and automates the identification of attacks against infrastructure and services from known botnets and malware, while ensuring that updates for new threats are automatically delivered without software upgrades. ■



# St. Andrews gets funding for data 'SafePods'



The University of St Andrews has been granted £1.5m from the Economic and Social Research Council to create and manage a new Micro Safe Settings Network (MSSN). This aims to support, strengthen and widen remote access to sensitive information held by data centres across the country.

The university says research access to sensitive data can only typically take place in tightly controlled safe settings where the privacy of the data subjects can be assured. But it points out that these

**The pods provide researchers with dedicated and secure space to remotely access project data. The units are also said to be compact enough for deployments where space is limited.**

type of research settings can be expensive to build and maintain, and so only exist in a few places across the UK.

According to St. Andrews, the establishment of the MSSN will help overcome these issues via a standardised network of micro safe settings or "SafePods". Designed and developed at the university, its claimed these provide researchers with dedicated space to remotely access project data. They are said to feature the security and safety features that exist in a traditional safe setting, and are also compact enough in size for placement into organisations where space may be at a premium.

The MSSN will work closely with the Administrative Data Research Network

to provide researchers with remote access to their data. The UK Data Service has agreed in principle that the majority of its Secure Lab data holdings will be remotely available to researchers through a SafePod. The MSSN will also engage with other key data centres and government departments across the country to offer and support remote access to their sensitive data.

MSSN director Professor Chris Dibben says: "The Micro Safe Settings Network will enable safe research from many more places across the UK. This will enable a far greater amount of public benefit research to be carried out, particularly within research institutions historically disadvantaged by being distant from national safe data settings." ■

## SSE and Thames Water: putting the pee in FTTP?

Thames Water has agreed to allow SSE Enterprise Telecoms to distribute fibre optic cables throughout its waste water network. By using Thames Water's existing infrastructure as part of an 'operating licence to deploy' agreement, SSE says it will reduce network installation costs by 60 per cent and implement connectivity services up to 10 times faster than through traditional digs.

Unlike conventional fibre deployments, where cables are laid as shallow as 12 inches under ground, Thames Water's network sits as deep as 10 metres below street level. As a result, SSE believes it will be able to establish a more physically secure system that is much less susceptible to tampering, inadvertent outages or accidental fibre breaks.

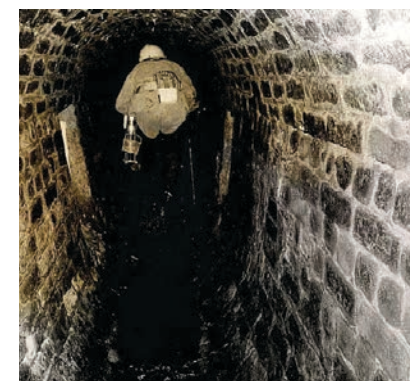
The deal also allows Thames Water to utilise its existing infrastructure without any disruption to general operations, while meeting EU and UK guidelines and helping to support the UK's digital strategy.

"Our Victorian sewers are already home to a number of pipes and cables belonging to other utility companies," says Richard Hill, head of property, Thames Water. "Reducing roadworks and traffic congestion is something hugely important to us, so it's great to help a fellow utility company do the same by allowing them to make use of our existing infrastructure."

SSE says it's been looking at new ways of providing connectivity following the recent postponement of (BT) Openreach's

Dark Fibre Access (DFA) product which was due to be launched in October. This was originally proposed by Ofcom in 2016 and would have enabled rival communications providers to pay for only the fibre element of the leased lines from BT, allowing them to attach equipment of their own choosing at either end.

BT complained and took the case to the Competition Appeal Tribunal where it was opposed by Ofcom which was supported by several major operators which included Colt, TalkTalk, Virgin Media, Vodafone, amongst others. The tribunal upheld BT's claim that the DFA would discourage service providers from investing in building their own fibre



**SSE says using Thames Water's waste network will enable it to roll out fibre networks up to 10 times faster.**

networks. The matter has now gone back to Ofcom for reconsideration. ■

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## Synopsys swallows Black Duck to push software quality testing

Synopsys, which claims to be the world's 15th largest software firm, has agreed to buy Black Duck Software in a deal valued at \$565m.

According to Synopsys, software development is undergoing "sweeping and rapid change", including the increasing use of open source software which makes up 60 per cent or more of the code in today's applications.

But it adds that while open source lowers development costs and speeds time to market, it has been accompanied by "significant" security and license-compliance challenges because most organisations lack visibility into its use.

US-based Black Duck specialises in automated solutions for securing and managing open source software. Synopsys reckons the addition of the firm's "highly respected" Software Composition Analysis solution will

enhance its efforts in the software security market by broadening its product offering and expanding its customer reach.

"Our vision is to deliver a comprehensive platform that unifies best-in-class software security and quality solutions," says Andreas Kuehlmann, SVP and GM of the Synopsys Software Integrity Group. "Development processes continue to evolve and accelerate, and the addition of Black Duck will strengthen our ability to push security and quality testing throughout the software development lifecycle, reducing risk for our customers."

Under the terms of the definitive deal, Synopsys will pay approximately \$565m or \$548m net of cash acquired. Synopsys will also assume certain unvested equity of Black Duck staff. The transaction is expected to close in December 2017. ■

## Transformational technologies

(continued from page 1)

The CBI has set out proposals on how the government can help create the right environment for growing businesses to thrive and take advantage of the opportunities afforded by new technologies. It has called on Westminster to establish a joint commission in early 2018 involving businesses, employee representatives, academics and a minister, to examine the impact of AI on people and jobs. The confederation says action plans are needed that will raise productivity, spread prosperity and open up new paths to economic growth.

In terms of blockchain, the CBI says the technology spans different sectors and will require regulatory coordination at both a domestic and international level to avoid fragmentation and encourage industry collaboration. It says regulators should work closely with the different industry consortia and the Financial Conduct Authority to share best practice and learnings.

The CBI also points out that the GDPR sets a clear framework for safeguarding the information generated by devices. It says the priority for government should be passing the UK Data Protection Bill so firms have adequate time to prepare for the new rules. ■





## THE WORLD ACCORDING TO...

Peter Coppens, VP Product, Colt

### A liquid infrastructure can do more than 'keep the lights on'

Increasingly, CIOs are looking to network infrastructure to drive digital transformation and business objectives. Enterprises are waking up to the fact that technology often underpins core business activity like international expansion, mergers, acquisitions and migrating to the cloud. These dynamic processes need network capacity to scale up and down as business activity fluctuates.

As organisations pursue growth and plug in to worldwide markets, many are using multiple data centre sites nationally and internationally. More extensive global footprints mean that network requirements for a cloud-only era go beyond a single connection to a single enterprise.

To power the digital transformation of today's global businesses, dynamic real-time ordering, provisioning and flexing of high bandwidth connectivity between sites is essential. With long lead-time, fixed bandwidth circuits and expensive long-term contracts, traditional ways of delivering services like Ethernet and Wavelength won't always cut it. When businesses are looking to scale, networks and connectivity need to do more than keep the lights on. A 'liquid infrastructure' and an intelligent virtualised network can help flex bandwidth between different sites accordingly.

Recognising this, forward-looking corporations are increasingly looking to third-party service providers offering a flexible consumption model and the combination of SDN and NFV technology, allowing for the instant provisioning of network connections between locations, and the scaling of bandwidth in real time.

This kind of functionality is no longer a 'nice to have' for organisations with goals for digital transformation. Consistently evolving real-time business requirements mean that on-demand models are essential if companies are to intelligently and efficiently meet short-term, *ad hoc* demands for high-bandwidth applications. The option of per-hour pricing plans as well as traditional fixed-term contracts also helps businesses to operate with agility.

With a liquid infrastructure, enterprises are released from the burden of provisioning connectivity themselves, and they can focus on so much more than just 'keeping the lights on'. An intelligent network can add real, quantifiable value to a business and free up teams to work towards core business objectives, all the while knowing that company connectivity is best positioned to power digital transformation initiatives that are essential to future success.

## Boundless helps connect the rural north with ultrafast broadband

Boundless Networks has used hybrid fibre-wireless solutions from Mimosa to build its ultra-fast broadband network.

With offices in Chorley and Leeds, Boundless is a wireless internet service provider (WISP) that covers remote and low-population areas in northern England. Its network spans 5,000 square miles, bringing broadband to previously unreachable customers who can typically receive 160Mbps throughput, which can be shaped down to the appropriate subscription level.

The WISP is using Mimosa Networks' point-to-multipoint *MicroPoP* and *GigaPoP*

systems. *GigaPoPs* are tower deployments using the vendor's *A5c* connectorised access points with focused antennas to cover a large geographic area. *MicroPoP* installations feature Mimosa's *A5* APs mounted on strategically-located rooftops which then connect to *C5* client devices. Each AP supports around 25 subscribers and operates using 40MHz channels and Mimosa's *Spectrum Reuse Synchronisation* technology.

Customers hosting an AP agree to provide rooftop access in exchange for discounted subscriptions, a strategy which is said to enable Boundless to scale quickly. The WISP now plans to roll out the service across northern England, including Yorkshire and Lancashire, over the next two years.

"Mimosa's ultrafast fixed 5G solutions have allowed Boundless to jump ahead of city speeds in rural locations," says MD David Burns. "Being able to deploy this ultrafast network is a huge benefit to the rural communities we serve, delivering superfast speeds directly to their homes today."



The WISP will use Mimosa's A5 access points mounted on strategically-located rooftops, as shown in this deployment in Scotland.

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# Everyone must help pay for Openreach FTTP

Openreach says it will have to pass on the costs of building a large-scale FTTP network to its wholesale customers.

Since mid-July, the company has been consulting customers such as Sky, TalkTalk, BT, Vodafone, amongst hundreds of others represented by the Federation of Communications Services. Openreach's aim was to see if there's enough demand for a large FTTP network that could deliver Gigabit speeds and more reliable broadband services for decades to come.

The consultation came to an end at the end of September and Openreach found broad support from communications providers (CPs) for it to build such a network. But the firm estimates that building FTTP connections all the way to ten million front doors would cost around £3bn to £6bn. It says that deciding how that investment can be recovered fairly through wholesale pricing will therefore be "critical" to making a commercial case work.

Openreach adds that a large-scale FTTP network is likely to benefit a broad set of customers over time, so it believes the costs should be spread fairly across a wide base. It reckons this would help to keep down any wholesale price increases required to support the investment case, whilst CPs and Openreach would benefit from savings through increased network reliability.

CPs acknowledged that charging a large premium for ultrafast services alone is unlikely to succeed, but questioned how



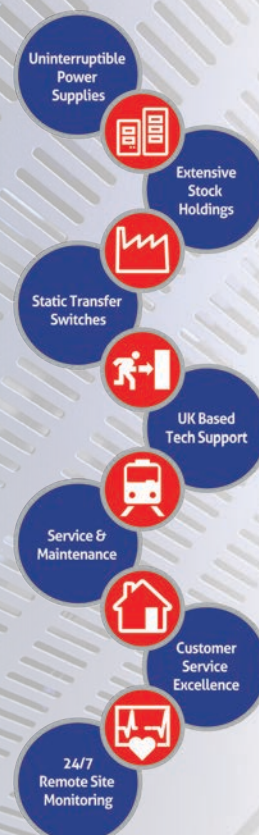
Openreach estimates that connecting ten million properties across the country with FTTP will cost up to £6bn.

much more customers will be willing to pay for the same headline speeds on a better platform. Some also expressed interest in sharing the risk of the investment but in return for preferential terms on the infrastructure that's built, with a variety of different models suggested.

There were also a range of views about how Openreach should decide on the scale, make-up and locations of the new network. Openreach says these will be considered in detail as it develops its new network strategy. By the end of 2017, it will then invite views on more specific proposals that cover pricing, footprint and a plan for automatic switchover.

"We believe that under the right conditions, we could build FTTP connections to 10 million homes and businesses by the mid-2020s," says Openreach CEO Clive Selley. "We want to do it, we think it's the right thing to do, but it's clear that we can't do it alone."

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## UK's "fastest" free Wi-Fi goes live

The City of London Corporation has now launched its free, gigabit Wi-Fi network that promises speeds ranging from 50Mbps to 180Mbps. Since the network was first announced at the start of this year (see *News*, Jan 2017 issue), more than 150 APs have been installed using street furniture throughout the Square Mile – something never before seen in London. The multi-million pound network was built within 28 weeks in partnership with Virgin Media, UK Power Networks and the City's Highways contractor, J B Riney & Co. The ad-free network will be operated by O2 and Cornerstone Technology Infrastructure as part of a 15-year contract. ■

## Rockford now part of SysGroup

Managed services and cloud hosting provider SysGroup has acquired Rockford IT for £3.9m. Established in 2001, Rockford is said to provide a "full range" of IT services to blue chip customers, SMEs, local authorities, etc., across the UK. SysGroup chief executive Chris Evans says: "Rockford's *WatchGuard Platinum Partner* status allows us to build on our existing partnerships and security accreditations." This latest deal is the group's sixth acquisition in the last three years, and will take its total number of employees to more than 100. ■

## New Technology Alliance Programme from Swyx

Swyx has set up a new Technology Alliance Programme (TAP) to support third-party hardware and software vendors in the development and marketing of complementary products for its communication solution. It says the new programme will enable partners to offer Swyx compatible solutions based on open interfaces, standards and protocols. Extensive tests are also an essential part of the TAP to ensure complete interoperability between partner and Swyx products. These can be tested in a jointly agreed test procedure either by Swyx or by the TAP partner itself. After successfully completing the tests, partner products receive certificates confirming their compatibility with Swyx. ■

# Bristol overtakes London as UK's smartest city

Bristol has overtaken London to become the country's leading smart city, according to the latest *UK Smart Cities Index*.

Now in its second year, the index is compiled by Navigant Consulting on behalf of Huawei UK. It is based on evaluations of 20 cities and their strategies, key projects and overall readiness in using digital technology to improve crucial civic services from transport infrastructure to healthcare.

The researchers say Bristol's move up the rankings is a direct result of it taking "significant strides" to extend its innovation programmes and more closely integrate these into the city's overall strategy. For instance, the *Bristol Is Open* project provides a large-scale connectivity testbed and the new City Operations Centre ensures that services are effectively

implemented. Bristol is also said to lead in data access, energy innovation and community engagement.

Meanwhile, London's smart city plans have evolved since the 2016 index to focus on data-driven policy initiatives and an "ambitious" new environmental plan, says the study. It adds that there has also been "considerable progress" in several of the capital's boroughs, notably in the *Digital Greenwich* programme. Furthermore, the appointment of a chief digital officer is expected to accelerate London's development in coming months.

While Bristol and London were named as "leaders", the researchers found that the most improved city is Manchester, which has climbed two places to third, while Cambridge has entered the top ten despite not featuring in last year's report (see table right). ■

UK SMART CITIES INDEX		
Rank	City	Category
1	Bristol	Leader
2	London	Leader
3	Manchester	Contender
4	Birmingham	Contender
5	Leeds	Contender
6	Milton Keynes	Contender
7	Glasgow	Contender
8	Nottingham	Contender
9	Peterborough	Contender
10	Cambridge	Contender
11	Oxford	Contender
12	Aberdeen	Contender
13	Edinburgh	Contender
14	Newcastle	Contender
15	Belfast	Challenger
16	Sheffield	Challenger
17	Reading	Challenger
18	Liverpool	Challenger
19	Cardiff	Follower
20	Exeter	Follower

The rankings are said to be calculated using in-depth analysis of ten criteria within the cities' strategy and execution, covering areas such as their vision, digital innovation, implementation record, environmental impact and community reach.

## Wi-Fi via light bulbs won't lead to the dark side

Transmitting digital data via LEDs at the same time as using them to generate light does not make them dimmer, change their colour, or make the bulbs more energy-hungry, according to new research.

The idea of 'Li-Fi' – using off-the-shelf LEDs for super high-speed data transmission – initially came from research carried out at Edinburgh University around five years ago.

Light spectrum is 10,000 times wider than RF spectrum, and Li-Fi operates in visible light frequencies between 400THz and 800THz. As this is at the upper end of the electromagnetic range, the technology is able to deliver higher

capacity throughput of up to 1Gbps. However concerns over Li-Fi's impact on an LED's lighting capabilities and a possible increase in power consumption have held back the technology's more widespread adoption.

But now, a University of Edinburgh team led by Dr. Wasiu Popoola, say their research findings help eliminate key hurdles to using LEDs to help satisfy the increasing global thirst for wireless communications.

Focusing on LEDs producing 'warm white' and 'cool white' light, the team looked at two different data transmission techniques: on-off keying, where the LED

works like Morse code, switching on and off extremely rapidly and imperceptibly to human eyes; and continuous signalling, where imperceptible changes in light intensity are used to achieve the same goal.

According to the researchers, neither technique was found to significantly reduce the bulbs' brightness, life expectancy, or cause any significant change in its light colour.

They say that both techniques also produced only a negligible change in the heat generated by the LEDs – a key consideration as any temperature increase would indicate the bulb using more electricity to produce light, making it less energy-efficient and less carbon-friendly. ■

## NGA to use mBond to connect underserved areas

Densely populated and underserved areas across the UK are set to benefit from high-speed and reliable broadband, thanks to Genesis Technical Systems' technology.

Nationwide carrier Next Generation Access (NGA) will use the company's *mBond* system in its existing telecoms infrastructure to provide last mile connectivity to homes and businesses.

Genesis claims its solution addresses the "inherent" issues associated with G.Bond and EFM (Ethernet in the first mile) bonding. It says *mBond* can deliver point-to-point/multipoint solutions to suburban and rural customers beyond the reach of fibre



**Genesis Technical Systems claims its technology enables service providers to deliver "life changing" broadband speeds of more than 1Gbps over extended distances.**

or where wireless solutions are unviable. The company claims its technology enables service providers to deliver "life changing" broadband speeds of more than 1Gbps over extended distances.

NGA's initial deployment is scheduled to take place in January 2018 in Guildford. The company's founder and technical director Kenny Roberts says: "After many months of technology analysis, *mBond* – in combination with our primary MSAN equipment – offered the best possible performance, cost efficiency and reliability for our customers around the country."

This latest order for *mBond* follows the technology being recently certified by BT which, according to Genesis, is widely regarded as an industry 'Gold Standard'. The firm says it is one of only nine global manufacturers to have achieved this. ■

## 8 IN 10 IT DECISION MAKERS HEADING FOR THE CLOUD



Findings of a recent survey with more than 2,000 ITDMs show the most popular cloud services used are Web hosting, blog and content management (39 percent), email (32 percent) and file sharing (32 percent). ITDMs are planning to deploy more complex business applications in 2018. The most popular include network monitoring (35 percent), backup (34 percent), sales/CRM and ticketing systems (35 percent). Download the full report to learn more about cloud readiness: [www.paessler.com/campaign/cloud-survey](http://www.paessler.com/campaign/cloud-survey)

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## VIEW FROM THE TOP

Mark Hardy, director, cloud networking, Northern Europe, Citrix

### The three network topics that should be on every CIO's agenda

We are now incredibly close to a future where everything will be connected to the cloud. This is moving beyond traditional servers and clients but now includes any kind of device, building or machinery. Always-on networking will ultimately transform all industries. With this in mind, there are three topics that every CIO should be considering:

**The network will be the future business platform:** the next five to ten years are going to see businesses transformed by digital technology. Everything is moving towards a globally connected IT infrastructure. Whatever the industry, the IT network will provide the foundation of every business. The IoT can provide data for near real-time interconnectivity.

We are already seeing this with the rise of car manufacturers who are preparing for a future where vehicles are not simply hardware designed to take us from A to B but an interconnected platform that can provide a personalised experience.

**The network is software-defined:** data paths are no longer pre-defined connections. Instead, they are made much more agile by being dynamically determined by software. Previously, branch offices used to be connected to headquarters via leased lines. Now,

modern offices communicate via multiple IP connections with a device that uses algorithms to decide which connection to use. By doing so, data paths can be diversified on technical necessities, such as balancing traffic loads, making the network more powerful and cost effective.

**Network performance does not always equal business performance:** it may seem logical to assume that the faster the network, the more efficient business processes are. However, the network is simply the vehicle to transport data between applications. For a successful digital transformation, it is vital that there is full control of how applications are delivered. Deploying an 'application delivery controller' will allow for the granular management of application behaviour and security as well as digital perimeter policy enforcement.

Data is the new currency and facilitating the unhindered flow of data is essential for the modern enterprise. Digital transformation and the IoT are rapidly progressing across all industries with network infrastructures providing the foundation of many business operations. Robust network connectivity and software-defined networking is needed to make this infrastructure agile enough for evolving business needs.

# Cost savings no longer cloud driver for Europe

Europe no longer lags behind the US when it comes to cloud computing, according to a new study that claims to be the first of its kind dedicated to the technology's transformational business impact.

*The Top 50 EMEA Cloud Climbers* report features companies from a wide range of industries, each assessed for excellence in strategic cohesion, market impact, operational performance and overall value. Firms in the retail sector secured the most top 50 slots at 12 per cent, followed by financial services with eight per cent, automotive, sport (each six per cent), and transport/logistics (four per cent).

David Linthicum, SVP of Cloud Technology Partners and a member of the judging panel for the study, says: "The [EMEA] region is no longer trailing the US but is equal to and, in some cases, accelerating the use of cloud computing. It is encouraging that EMEA businesses are now

leveraging cloud computing strategically and not just for tactical cost savings."

Some of the companies highlighted in the study include Spotify for continually evolving and optimising its music streaming service, Mercedes F1 for its cloud-powered performance analytics, and Airbus which uses cloud and machine learning to store and process several hundred terabytes of satellite imagery annually.

The report also picks out the Helix Nebula Initiative public-private cloud partnership as another notable example of the technology's immense reach and influence. Comprised of IT providers and Europe's top research centres (CERN, EMBL, ESA and PIC), the partnership's work includes helping the search for the Higgs Boson particle.

The report was compiled by HotTopics.ht and sponsored by application security and cloud specialist F5 Networks. ■

## Telco Cloud a world first for Three

Mobile operator Three UK is said to be deploying the world's first fully integrated cloud native core network with the claim that it will enable "massive scalability, elasticity and better reliability".

It's hoped that the network, which leverages NFV and SDN, will give Three UK greater agility to rapidly respond to dynamic service demands while preparing for IoT and 5G, as well as provide high-quality services for its customers.

The company's all-new Telco Cloud is based on the ETSI NFV MANO framework. It incorporates open source technologies such as Red Hat's *OpenStack* platform, and is said to span several new "state-of-the-art" data centres architected for full geo-redundant high-availability.

Three UK will use MYCOM OSI's *Experience Assurance and Analytics (EAA)* to monitor the network. EAA will assure both new virtualised and existing

physical networks, and provide closed-loop assurance-driven orchestration based on end-to-end network and service quality.

MYCOM says its products will give the operator a single, integrated assurance suite that manages end-to-end network and service quality across all hybrid, carrier, and IT network domains.

It adds that some of the key benefits for Three UK include: proactive and real-time surveillance; closed-loop assurance with policy- and analytics-driven auto-recovery and self-healing support; and a cloud-native and self-orchestrated assurance suite that is based on microservices architecture principles, containerisation, Big Data storage, elastic auto-scaling and agile DevOps deployment.

According to Three, it currently carries 36 per cent of the UK's mobile data traffic and its network covers 98 per cent of the population. ■

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## Datto launches new network platform – and gets new owner

Just days after launching its new networking products for Europe, business continuity specialist Datto has announced that it will be acquired by Vista Equity Partners. The terms of the deal have been withheld.

Vista is an investment firm focused on software, data and technology-enabled businesses. It plans to merge Datto with Autotask, one of its portfolio companies that provides IT management solutions. The firm claims the combination will create a single provider able to meet the needs of IT and managed service providers (MSPs), from operations through service delivery.

Datto founder Austin McChord will lead the combined management team and continues his role as CEO. Autotask CEO Mark Cattini will work closely with the combined team as a strategic advisor.

Datto says the proposed acquisition will not affect its recently unveiled new networking product range. Created to specifically meet



**Datto says its new networking line-up includes "powerful" Wi-Fi APs that offer rapid deployment options, auto meshing and auto-optimisation features designed to continually fine tune performance.**

the unique needs of MSPs and how they work, the company claims *Datto Networking* offers a centrally managed, multi-tenant device view through a cloud-based partner portal, consolidated and synchronised billing, and round-the-clock customer support.

The new platform includes the firm's AP42 802.11ac wave 2 AP that is fully managed in the cloud; network switches that are said to deliver "robust" Layer 2 management features and are easily configured and managed via the portal; and a combined LTE/Wi-Fi router and firewall networking appliance. ■

*Is business continuity and disaster recovery easier in the cloud? Feature pp11-13.*



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# Network in residence

**Housing associations often manage sprawling estates scattered across wide areas. Keeping customers and staff connected therefore presents some tricky challenges.**

## Security that's as safe as houses?

Radian Group provides around 21,000 affordable homes in Berkshire, Buckinghamshire, Dorset, Hampshire, Isle of Wight, Surrey, Sussex and Wiltshire. The company has an extensive WAN based on a BT IP/MPLS network and, in some places, DSL/MPLS, connecting its many different locations. It also has a services data centre and an infrastructure based on a Citrix thin client model.

Given the wide sweep of its network, 800 employees and well over 25,000 tenants, security needs are all-encompassing. These range from securely configured VPNs for third-party access to security permissions and endpoint encryption.

As a result, the company needed a partner that could provide comprehensive protection, market insight and deep

security technology expertise. When Radian was formed in 2006 following the merger of Oriel Housing Group, the Drum Housing Association and the Parkside Housing Group, it inherited a lot of suppliers and partners. One of these, MTI Technology, was an established security provider to one of the merged housing associations. Since then, MTI has gone from being one of Radian's technology suppliers to a very close partner that can be relied on for objective advice.

Just some of the MTI technologies Radian has incorporated into its security portfolio include firewall upgrades, Forcepoint for web and email filtering, and upgrades to a Trend Micro platform for endpoint protection and device encryption. This protection was then built upon to incorporate advanced endpoint security including port and app control, and encryption across the network.

"We had a mixed bag of encryption tools and wanted a more cohesive approach," says Ian Butcher, IT operations manager, Radian Group. "For instance, some IT guys at different sites would use different encryption methods. With MTI's help we introduced a more uniform approach [for] trusted encryption across the network. At the same time, we also introduced new security features

such as the ability to disable USB devices when they are inserted into ports."

Radian is now set to introduce ongoing staff education and training. This is designed to ensure that employees are familiar with new threats, such as growth in ransomware, and how to detect them. The company is also planning to introduce sandboxing so unknown programmes – whether from third parties, suppliers, users or websites – can be run without harm.



## Thin clients at tenant-led housing association

One of the UK's only tenant-led housing associations, Community Gateway Association (CGA), has upgraded its entire desktop infrastructure installing 220 multi-media-ready IGEL Universal Desktop 3 (UD3) terminals for staff at its new head office.

The desktop refresh project is part of a wider IT investment programme that has been completed to support the association's purchasing and refurbishing of a brand new headquarters – Harbour House in the Preston Docks area.

Founded in 2005, CGA is a not-for-profit housing association managing more than 6,000 properties in North West England. It took over Preston City Council's housing stock, adopting what's described as an "innovative" model of community engagement in the subsequent running of the association. This means almost half of CGA's board is made up of tenants along with council staff and independent members.

When the organisation was established in 2005, brand new PCs and laptops (i.e. 'fat clients') were originally purchased. Mark Pearson, CGA's IT systems and development specialist, says: "They were difficult to manage when you have close to 300 staff and a software update needs to be installed in various departments. In our business plan, we refresh equipment every three to five years [and have switched to] thin clients progressively since warranties have ended or machines have come to the end of their useful life."

The organisation shifted to a virtualised environment in 2009 using VMware. But when the equipment started reaching end of life, CGA found that the original supplier had gone into liquidation which meant no more firmware updates. "With the office move, it was time to review alternatives and upgrade our desktop estate," says Pearson.

IGEL says CGA selected its UD3 terminals because of their "reliability, positive customer references and management simplicity". The company includes its Universal Management Suite (UMS) for free and reckons it is easy to use compared to competitors who have "cumbersome and costly" alternatives. This was a key criteria as CGA has a small internal IT team of three to support the whole organisation.

"We wanted our desktop hardware to be agnostic irrespective of the backend server software used," says Pearson. "IGEL offers this kind of 'future proofing' which is a big positive. It means we can run either Microsoft, as we do today, or simply change to Citrix at a later stage if we so wish."

## Hastoe calls time on inefficient contact centre

Hastoe Housing owns and manages more than 7,000 homes in over 70 local authority areas. In 2011, the company – which has its head office in Surrey as well as regional offices in Dorset and Essex – completed its 200th village scheme, and it's claimed that this confirmed its position as the UK's leading specialist rural housing association.

Hastoe's customers include leaseholders, shared owners or tenants, and are spread across a wide geographical area between Cornwall and Devon in the west, and Norfolk and Lincolnshire in the east. Getting to see customers can mean a long drive for staff, so high-quality interactions via phone or email are crucial.

Head of customer services Amanda Harris says: "We offer a wide range of services to our local communities which is managed through a small contact centre of just eight advisers and a portal for online self-service. But our main interactions are by phone so it's vital to have the right system in place to ensure calls are handled effectively."

The company began looking for a solution that could handle these variations in call numbers. It also needed a system that provided clearer statistics for reporting, had a good wallboard so that everyone could assess the current situation at a glance, and a call recording system that was easy to review for quality monitoring, coaching purposes and complaint disputes.

Furthermore, Hastoe also wanted a fully future-proof system that would not only handle email, texts and social media, but could also adapt to developing any future communication channels.

Working with reseller G3 Comms, Harris and her team eventually opted for Enghouse Interactive's *Communications Centre*. It is said to relay accurate IVR messages that allow callers to know where they are in the queue, and provides the ability to limit calls in the event of surges.

Hastoe has also invested in Enghouse's *Quality Management Suite (QMS)* to replace its previous call recording and monitoring system which did not offer an easy way to access calls, replay them and assess their quality. Harris says call monitoring has now improved dramatically. She estimates that the contact centre team leaders' time is significantly reduced because of the more efficient interface, and says the team now saves around "half a day or even a day a month" thanks to the new system.





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The risks of cyberattacks, ransomware, and industrial espionage is on the rise, while at the same time EU regulations for the protection of personal data will reach a new level with GDPR (General Data Protection Regulation) entering into force as from May 2018. Organisations and companies need to have reliable and secure storage in place in order to protect their sensitive information as well as the personal data of their customers.

Many small and medium sized organisations use network attached storage (NAS) devices to store, backup and share data. Buffalo is an established leading manufacturer of NAS devices and security of its customers' data is, and has always been of the utmost priority. Buffalo NAS are secure devices in many aspects.



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# Cloud: the best way to protect your business from vapourisation?

*One of Sungard's workplace recovery centres. The firm believes that because many cloud-based recovery products still depend on physical IT, customers have only bought a "partial" BC&DR solution. It says what they lack is the people that have the range of skills needed to recover a business in line with the board's expectations.*



**Are cloud-based platforms making the process of business continuity and disaster recovery easier for enterprise organisations – or is it time for IT managers to get off their XaaS and watch out for newer risks? RAHIEL NASIR finds out.**

If there is one thing that is certain in life (apart from the fabled death and taxes) it is the fact that IT never stands still. Each year seemingly brings with it a new set of acronyms – from UC and BYOD dominating the headlines in recent times, we are now in the realms of XaaS and IoT, with AI looming large on the horizon.

So are the challenges for enterprises still the same as they have been when it comes to business continuity and disaster recovery? Or are the latest technology trends presenting fresh issues for IT teams when it comes to BC&DR? (Yes, another acronym.)

One company that is arguably well placed to answer such questions is BC&DR specialist Sungard Availability Services. It believes that the combination of legacy systems and new cloud-based models makes it difficult for businesses to recover in the event of a calamitous network event.

"Trends such as IoT and BYOD are becoming an increasing challenge for companies," says Sungard's business continuity expert Daren Howell. "The greater number of endpoints and devices expose more entry points and vulnerabilities to attack. Networks, communications and telephony have also tracked steadily upwards as a source of system failure and why customers invoke our services."

Furthermore, with the number of cyber attacks growing exponentially, Howell believes that a business' greatest competitive strength, IT, has now become its greatest weakness.

Sue Mosovich, data continuity manager with business continuity solutions provider Datto, is likely to agree here. While acknowledging that ransomware is nothing new, she says it is now the number one disaster IT managers will face, more common than accidental data loss and hardware failure.

Citing data from security firm Malware Bytes, Mosovich says about 40 per cent of enterprise organisations get hit with ransomware each year (although she reckons this figure is likely to be higher as many companies are reluctant to report such

cyber breaches). "The number of companies experiencing an attack is growing fast. Back in 2014, ransomware was a \$25m business; in 2015 it jumped to over \$100m, in 2016 it eclipsed \$1bn, and we're on the path to this being a five billion dollar industry by the end of this year."

Mosovich adds that while we constantly hear about how much of an impact ransomware has on on-premise services and servers, SaaS apps are just as vulnerable to attacks. As a result, she says the fundamentals of backup and recovery still apply.

New technologies therefore don't present new challenges for IT teams because they still need to go through the processes of identifying the systems and data that need to be backed up, and what needs to be available in the event of a disaster. Echoing Howell above, Sean McAvan, Europe MD of managed services provider Navisite, says it is the increasing number of devices that can store and process more information that makes things trickier.

"Deciding how to secure those devices, and even whether or not those devices need to be backed up, adds a layer of complication. However, the answer to the complication is also in cloud-based solutions. There are tools that will let you manage many thousands of devices. In addition, cloud-based tools and advances like micro segmentation

allow you to firewall individual assets down to a very granular level.

"So, I think that while the proliferation of new end devices does potentially paint a more complex picture, advances in cloud-based solutions mitigate some of that."

## Ditching complexity

So does greater use of cloud-based platforms actually make business continuity and disaster recovery easier for organisations?

"Potentially, yes," says McAvan. "Cloud platforms have the ability to simplify access to reasonably priced business continuity solutions. Plus, the ability to replicate to the cloud and hydrate infrastructure and apps only when disaster recovery is invoked reduces the cost. On top of that, the replication technologies are advancing all the time, so you can reduce your RPO [recovery point objective] and RTO [recovery time objective], making these kinds of solutions more viable."

The answer to the question is also a "potential yes" from Sungard. Howell believes XaaS providers are most likely to be relatively new businesses or ones with standardised contemporary IT. As such, he says it is highly probable that their systems will be based on virtual or cloud platforms and not constrained by legacy infrastructure found in more mature enterprises. "You have therefore done away with a great deal of potential recovery complexity and conflicts, and enabled the automation of recovery."

**"Ask your team members 'is BC or DR (solely) the IT department's responsibility?' If anyone answers 'yes', you have work to do."**

*Eric Jahn, VP, IT infrastructure and operations, Rocket Software*

But of course, and as Mosovich points out, while adopting XaaS-based applications enables organisations to avoid the complexity and cost of on-premise infrastructure, it doesn't mean that cloud solutions are fully protected from loss. "Cloud may be remote, but it's still comprised of physical infrastructure somewhere and, as such, can be affected by device failure, software corruption, malicious attack, and more."

Eric Jahn, VP of IT infrastructure and operations at Rocket Software, adds to this by saying that data in XaaS platforms may ("or may not") have good resiliency, business continuity and disaster recovery management. But in reality, he says the perimeter of your data centre has moved beyond the walls you control. "As a result, BC&DR has become diversified, so the likelihood of a 'complete' disaster is less likely but the impact of losing your CRM system or demo servers may have consequences at a micro level."

Druva, which lays claim to the industry's first data management-as-a-service platform, says the issue of availability becomes mitigated when you have cloud-based services. "Microsoft should be better at running email services at scale than you are, while AWS can build and implement IaaS at much lower cost than individual companies can," says Dave Packer, the company's VP of product and alliances marketing. "However, the public cloud companies often don't provide full disaster recovery within their services. That is still left up to companies themselves."

Clearly then, in-house IT teams cannot let the cloud lull them into a false sense of security or become complacent when it comes to BC&DR best practices.

"Look at the terms and conditions in your cloud apps," says Packer. "Some Office 365 products include data recovery based on versioning of files, but there's no model of backup/recovery that provides time-based restoration or *en masse* recovery within the majority of Office 365. Salesforce can get your data back after an error or a deletion





– but it will take a month for them to recover that data, alongside additional cost.

“For companies, making sure that their existing policies around data protection and management can be replicated in the cloud is more important than the ones and zeroes that make up files or data getting moved to the cloud.”

Mosovich has a similar view, adding that Google, Microsoft and Salesforce handle data responsibly for many companies and that a breach or outage at their end is “highly unlikely”. And she reckons that when it comes to user error, malicious attacks, compliance issues and user management, a cloud-to-cloud backup and recovery solution is your only hope for preventing data loss, downtime and the related financial demise that follows.

Having said that, she reiterates Packer’s point above: “Many users – and even IT professionals – assume that if data is in the cloud, it is automatically protected. But SaaS applications like *Office 365* or *G Suite* aren’t necessarily backed up by Microsoft or Google. These vendors operate under the shared responsibility model; basically, they are going to provide you [with] a secure operating environment that they’ve built to be highly available, redundant and scalable. However, they leave the protection of what is put into their cloud up to the customer. Essentially, if you put data in their cloud, it’s your problem if something goes wrong that’s not environmental.”

According to Mosovich this is where most organisations start to feel the pain of not having a backup. “Nothing is stopping users from deleting data, changing data or doing stupid things like clicking on ransomware. And Google or Microsoft has no responsibility to provide protection from these occurrences or help you with recovering.”

## If you fail to plan...

Single suppliers, such as managed services providers, often give businesses the oft-cited ‘one throat to choke’ in the event of something going wrong. But even with the advent of cloud services, in-house network managers should make sure that the throat isn’t theirs. For instance, Druva’s Packer says that while the public cloud can be better than internal IT, it’s not perfect or foolproof. “AWS saw a big outage this year due to human error during an update, for example.”

Databarracks – which claims it launched the UK’s first managed online backup service more than 10 years ago – agrees. The company has been running an annual survey of IT decision makers since 2008, and every year it says the top cause of data loss is human error. “Regardless of the new trends, that doesn’t change,” says technical operations manager Oscar Arean.

According to Databarracks, a good disaster recovery solution does more than

just protect technology – it accounts for and mitigates against the disruption to an organisation’s people, processes and assets.

Arean goes on to state that one of the biggest weaknesses when it comes to organisations arranging BC&DR plans tends not to come from the technology itself, but the process. “It’s quite common to hear a business say ‘we have a business continuity plan’, but what they actually have is an IT runbook detailing the technical steps for recovering servers. There’s been no business impact analysis, no critical service mapping from business functions to the IT assets, and if there has been testing, it has been to recover servers but not to really see if users can continue to function.”

The latter point about testing is one that unites the industry. For example, Howell says that while the IT people Sungard meets are all “highly skilled and inherently good at their jobs”, DIY disaster recovery testing is, at best, done four times a year or even just once annually. “Without practice, it’s extremely difficult to gauge how a business will react under pressure during a disaster. [Also] bear in mind that the recovery process will have changed by the time you perform the next recovery.”

Navisite’s McAvan agrees that enterprises and organisations do not commonly trial and test their BC&DR plans on a regular basis. “We often see people set up disaster recovery or business continuity arrangements and platforms which they test during the initial implementation, but then ongoing testing falls by the wayside. Replication tools working with a managed service provider can mitigate against that, so that the tools and monitoring around the platforms can tell you if replications occurred correctly.”

According to McAvan, Navisite can build disaster recovery testing into SLAs: “We will have a bi-annual disaster recovery test put into the contractual obligations. It’s worth noting that it’s also best practice to run testing after any major system changes, so if you change a system or grow it, testing the responses should be part of the change process.”

He continues by highlighting the issue of plans not being updated. For example, if a critical member of staff is named in the plan and subsequently leaves, problems may arise when it comes to implementing the procedures.

Howell agrees and says that keeping up with changes and knowing what your IT estate looks like is vital for businesses: “IT staff come and go, and unless changes and dependencies for recovery are captured, documented or automated, you have had it at time of disaster.”

Another weakness Howell identifies is ‘shadow IT’ which can creep into the estate and lead to chinks in security defences. “This means that you can’t protect and recover what you don’t know about. Doing an inventory of your estate is a laborious task that can now be



## “The public cloud companies often don’t provide full disaster recovery within their services.”

*Dave Packer,  
VP product & alliances marketing,  
Druva*

“We’re seeing physical IT DR environments that aren’t connected to the net. This allows businesses to rebuild IT knowing they can scrub it clean of malware and then connect it back up again in full confidence they won’t re-infect the [network]. This is proving to be a great way to beat ransomware attacks.”

What are the pitfalls to avoid when choosing BC&DR solutions and what should net managers look for?

McAvan says businesses should steer clear of large, fixed flexible solutions that require high capex. “Historically, disaster recovery solutions tended to be based around facilities and the storage. That is capital intensive and very inflexible.”

Because the technology landscape is changing so quickly, McAvan maintains that cloud-based platforms offer greater flexibility. But Rocket’s Eric Jahn appears to sound a more cynical note when he says: “Outsource DR vendors make a living on charging customers for the reservation, and then copious amounts more if you dare to show up and use the hotel room. The temptation is to move it outside, so you can say you are safe (but be warned that you’re the only one who will get fired if it doesn’t work).”

Nonetheless, if analysts such as Gartner are to be believed, it is estimated that 50 per cent of all company data will live outside the corporate data centre by 2020. Looking at cloud-based DR, Packer therefore says it’s important to be aware of where your data really gets created and stored over time: “Is it in cloud apps? Is it on mobile devices or laptops? Are there file servers used at remote offices? The data centre is no longer the centre of data. Yet all that data will still have to be managed and adequately protected.”

He encourages cloud customers to go back and scrutinise their SLAs: “While cloud services can provide better availability, resiliency and reduce your costs around data loss due to storage failures, it always pays to read the small print when it comes to data protection in regards to corruption, accidental deletion or malicious attacks and how you might recover.”

Jahn also recommends re-acquainting yourself with your supplier’s agreement: “If you choose to go the DR route (or are already there), go back and read every line of the contract. It’s likely [the provider is] doing very little for a lot of money. The advent of cloud storage connectors, which hybridise your data centre and keep a significant number of data backups in multiple vendors with geographic diversity, is the game changer that enables any organisation to bring their DR back in-house.”

## GDPR

For those who feel the need for yet another acronym, there is one that has been dominating the IT agenda of late: GDPR.

The EU’s General Data Protection Regulation was ratified in 2016. Businesses were then given two years to become compliant or possibly face multimillion pound fines if they fall foul of the legislation which will apply in the UK from 25 May 2018. The government has confirmed that Brexit will not affect this start date.

automated, so there are no excuses. When you know what your IT estate looks like, then you can start to paint a more accurate picture of what your recovery requirements are likely to be.”

## We’re gonna need backup

For Datto, other concerns that apply to all BC&DR policies include not having redundant copies of data, both locally as well as off site. As stated above, Mosovich says cloud data has the additional option of being replicated to a secondary cloud location, which is ideal. “Original plus two copies is standard, but original plus three is optimal,” she advises.

There are additional considerations for organisations that adopt SaaS-based applications such as email. “When users are removed from an organisation, there is risk that critical business data will be lost when that user’s account is deactivated. It’s important that organisations remove the ex-employee’s access, but not lose the data. A good cloud-to-cloud backup application can help here,” says Mosovich.

Furthermore, she is critical of small businesses that often protect data with “antiquated” file/folder backup solutions: “These do nothing to protect applications, nor can they restore full systems when they fail. Working with a system snapshot-based solution will ensure restoration of full machines yet allow for file/folder restores and application recovery.”

So who backs up the backup? While data centres may have redundant facilities to protect themselves and their clients, is all this foolproof?

Databarracks’ Arean says the key consideration for disaster recovery of either IaaS, PaaS or SaaS is in where responsibility lies between the service provider and the customer organisation. “Some cloud services include no backup or recovery options at all. In these instances, the cloud provider (usually IaaS providers) offers an SLA for uptime. But if there is downtime and data is lost, the provider accepts no responsibility at all and you may lose your data completely.

“AWS is the perfect example of this. They provide the infrastructure and it is your responsibility to both build-in your resilience and create your backups. In this case, it isn’t just the data centres that have redundant facilities, it is the platform itself.”

McAvan agrees that there has to be a clearly delineated responsibility for what is done with backup data. “For example for some of our clients, we backup the backup, either by replicating it to another data centre or by storing backup data on media which is then sent off-site to either the client or to a third party to be stored safely.”

Sungard often serves as the backup to a number of disaster recovery service providers and, according to Howell, some traditional forms of recovery are also experiencing a renaissance:

## “Cloud may be remote, but it’s still comprised of physical infrastructure somewhere and, as such, can be affected by device failure, software corruption, malicious attack, and more.”

*Sue Mosovich,  
manager, data continuity,  
Datto*





Under the regulation, businesses will need to take adequate measures to ensure the security of personal data, actively demonstrating that they comply with the GDPR and have implemented “privacy by design”. So how does all this play into BC&DR?

“GDPR is going to deliver a framework that will drive people to protect personal data,” says McAvan. “Part of that framework/guidance will be geared around ensuring that the data is securely protected and also that backups and copies are stored and available. In some ways, these changes are welcome, and I imagine that it will drive some organisations to review their current policies and current solutions.”

He adds that some elements of GDPR, such as the right to be forgotten, will potentially mean that many organisations will need to review the tools they use to backup data: “They will need to identify the records affected by those elements and be able to extract individual ones from potentially huge amounts of data media, and then be able to erase that.”

Jahn is also concerned about this: “IT organisations may get stuck with a significant challenge until application service providers build the necessary, granular data retention tooling that can easily identify PII [personally identifiable information] and act on requests such as the ‘right to be forgotten’. How do you go back and purge one user’s data from seven years of backups and replicas? In the long term, storage vendors and enterprise search capabilities need to evolve for constituents in a ‘reverse legal hold’ scenario where data may still be resident but obfuscated or blocked on access.”

Meanwhile, Packer also believes GDPR will force many companies to look at the data they create and how it is managed. With the increasing volumes and storage locations of data, he says the importance of having a single control plane for visibility and policy management increasingly becomes an imperative. “Achieving this and being able to track sensitive data across the business will be important for aligning to compliance initiatives. However, this is not just an ‘IT project’ – it goes to how your business uses customer data and how you manage their records as a resource.”



**“People set up disaster recovery or business continuity arrangements and platforms which they test during the initial implementation, but then ongoing testing falls by the wayside.”**

Sean McAvan,  
MD Europe,  
Navisite

According to Howell, there are four explicit areas to focus on in terms of the GDPR and BC&DR.

Firstly, there is what he describes as the “pseudonymisation” and encryption of personal data. This involves the processing of personal data in such a way that it can no longer be attributed to a specific subject without the use of additional information. But he adds that businesses must hold the pseudonymised data and the additional information separately to prevent possible identification, since the data only becomes identifiable when both elements are held together.

Secondly, there is data protection where the ongoing confidentiality, integrity, availability and resilience of processing systems and services has to be ensured.

Thirdly, restoration is crucial so that the data is provided in a timely manner

in the event of a physical or technical incident.

The fourth element concerns management and implementing a process for regularly testing, assessing and evaluating the effectiveness of technical and organisational measures for ensuring the security of the BC&DR policy.

## Everyone’s accountable

Rocket Software’s Jahn believes too many organisations remain confused when it comes to BC&DR. He reckons they fail to distinguish between: application/service resiliency (making something highly available as a service); disaster recovery (what you do in the event of a disaster); and business continuity (what you do in advance to plan for the disaster). “The entire business needs to

understand the difference and importance of each layer so that companies develop integrated strategies where everyone is accountable. Ask your team members ‘is BC or DR (solely) the IT department’s responsibility?’ If anyone answers ‘yes’, you have work to do.”

Perhaps that’s no bad thing given all the digital transformation that is currently under way and looks set to continue over the next few years; few would disagree that paradigm shifts and new ways of thinking are needed at every level in an enterprise.

But for now, and in the words of Mosovich, data resides on real hardware and software, no matter if it’s in your network or the cloud. She says: “It’s just as likely to be affected by all the threats we’re familiar with wherever it lives. Don’t get complacent. Get knowledgeable.” ■



# DATA WARS

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## off-the-shelf: power distribution units

# Plugfest!

Some of the latest PDUs that aim to spark your interest.

**Austin Hughes** has expanded its *InfraPower* range with the addition of new Intelligent Dual Feed PDUs.

According to the company, Dual Feed devices integrate the primary and redundant A&B power feeds within the same PDU, with the option of splitting the feeds vertically or horizontally. It says this helps save rack space by utilising one unit rather than needing two separate devices per rack. Cable routing for both primary and redundant power connection can be organised to one side of the rack.

Austin Hughes adds that its Dual Feed PDUs minimise network IP requirements

and have “advanced” features including 2.8-inch colour LCDs, ports for daisy chaining units, as well as external sensor/peripherals.

The new PDUs can be integrated with the firm’s *InfraSolution* networked smart card access control for what’s claimed to be added cabinet security, and *InfraGuard* for full cabinet environmental monitoring and management.

As with all its *InfraPower* PDUs, Austin Hughes says it offers custom configurations including multiple socket types per PDU, as well as a variety of colours that are available on short lead times.



**Enlogic** says its recently launched *EE Sensor Pod* devices allow environment monitoring and rack access management to be retrofit into a data centre location without replacing the PDU estate.

The devices can be horizontally mounted, use 1U space, and ship with mounting brackets. Some feature a C19 outlet port for power and energy metering which Enlogic claims offers “high accuracy” of +/-1 per cent.

The *EE Sensor Pod* has 24 physical ports allowing connection and monitoring

of up to 24 physical sensing devices, or monitoring of up to 32 virtual sensing points.

For instance, Enlogic says it could be used to support eight of its *EA9105* sensors. This offers three sensing points for temperature and one for humidity and therefore consumes four sensing points in total. Alternatively, the unit could accommodate 24 *EA9102* temperature sensors. Other sensors supported include ones for dry contact cables, door, smoke, spot leak, and rope leak.

The company adds that the pod can also be used to manage and monitor its HID rack access solution, offering security, logging and alerts to eight racks with locks front and rear. Sensor devices can be mixed within the installation but



Enlogic points out that they cannot exceed 32 virtual points per sensor pod.

**Geist** has launched a *Universal PDU* that complies with *Project Olympus* – Microsoft’s next-generation cloud hardware design and model for open source hardware development in collaboration with the Open Compute Project (OCP) community.

The company says its new unit features a universal input power connection that enables users to select a geographically-specific power cable (the ‘facility side cable’) versus requiring a country or geographically-specific PDU product.

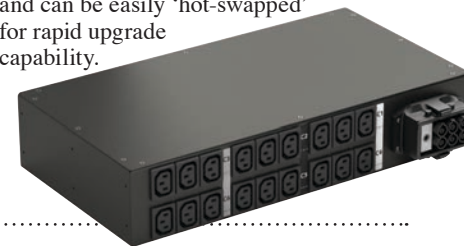
According to Geist, this universal approach – which is in contrast to traditional PDU designs with specific hardwired connectors – enables a single unit to be quickly localised by adding a cable, or pre-configured in a rack and shipped to any location regardless of voltage and amperage, thus supporting greater flexibility in the supply chain.

The *UPDU* features a 2U form factor and is said to offer low profile circuit breakers and efficient outlet density. Geist claims that the highly modular PDU, with its “wide variety” of facility side cables, embodies

the OCP ideals of flexibility allowing faster deployments, upgrades and expansions.

The company says it began collaborating with Microsoft at the concept stage to develop a design that would simultaneously simplify and accelerate PDU deployments anywhere in the world through the use of a single SKU. It says reliability, flexibility and scalability were core requirements, along with customisation capabilities that make the design continually adaptable to the changing requirements of global data centres, from hyperscale to start-ups.

Geist adds that it will continue to work with the OCP and *Project Olympus* to develop PDU designs that are interoperable within a variety of rack formats, voltages, power requirements and geographies, and can be easily ‘hot-swapped’ for rapid upgrade capability.



**Server Technology** reckons it’s come up with the smallest form factor PDUs. Developed using its *HDOT* (*High Density Outlet Technology*), the firm claims the new units “significantly” increase real estate in the back of the rack by fitting as many as 42 C13s in a 42U high network managed PDU device. According to Server Technology, that’s more than 20 per cent smaller than a comparable PDU using standard outlets.

The company says its *HDOT* design provides high native cord retention of more than 12 pounds pull strength, thereby reducing or eliminating the need for what it says are custom and “costly” ancillary locking cord devices.

It adds that outlets made using the technology feature robust high-temperature materials carrying a UL94 V-0 flame rating, making them “ideally” suited for the harshest data centre environments.

The *HDOT* range includes the new *Per Outlet Power Sensing (POPS)* device which, says Server Technology, provides +/-1 per cent billable-grade accuracy for energy consumption at each outlet

for typical data centre equipment loads. *POPS* includes current, voltage, active power, apparent power, power factor and crest factor at each outlet. Server Technology believes all this provides the “ultimate” in efficiency and capacity analysis. The new device also enables alarms and warning signals on current, power, and power factor for both low and high values.

Furthermore, to simplify load balancing and cable management, Server Technology says its alternating phase outlets distribute phases on a per receptacle basis, rather than in discrete separate banks. It says this provides tangible benefits in the form of shorter cable runs, resulting in better airflow, easier load balancing and greater efficiencies.



**Tripp Lite**’s *PDUMH15HVAT* is a 2-2.4kW single-phase PDU that is said to enable redundant power for network devices with non-redundant power supply configurations.

Designed for data centres and server rooms, it mounts in 1U of space in EIA-standard 19-inch racks and features 10 C13 outlets. There are dual 3.6m input cords with IEC-320 C14 plugs that connect to separate primary and secondary single-phase power sources in a nominal voltage range from 200-240V. There are plug lock inserts to prevent the accidental disconnection of cords.

According to Tripp Lite, the *PDUMH15HVAT* constantly evaluates the power quality of both input sources. It says dynamic solid-state (TRIAC) automatic transfer switching allows the PDU to switch to the secondary source within 2-5 milliseconds should the primary source

fail or become unstable. A built-in processor monitors both sources and prevents switching if the secondary source is unavailable or is of lower quality than the primary.

The PDU features a digital ammeter that monitors total output current used by connected equipment, while LEDs display outlet on/off status and input power status on primary and secondary inputs.

There is also a built-in slot to support Tripp Lite’s optionally available *SNMPWEBCARD* and *WEBCARDLX* modules. These turn the device into a switched PDU by allowing remote access for power monitoring, configuration, outlet control and notifications via web browser, SSH, telnet or SNMP.



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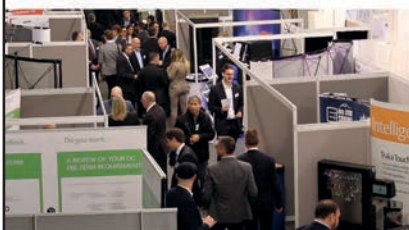
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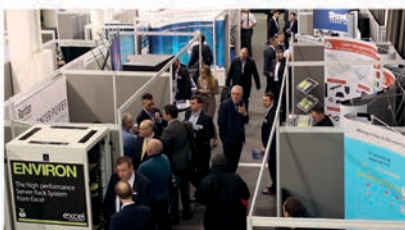
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## Best IT firms to work for in UK

Salesforce, UKFast and Foundation SP are among the best IT companies to work for in the UK, according to Great Place to Work.

While the research consultancy won't reveal how many organisations it contacted for its latest survey, it says that it polled companies across 24 industry sectors and ranked them as small, medium and large based on their staff numbers.

Great Place to Work says some 15,000 employees in the IT sector who responded reported one of the highest levels (86 per cent) of trust across industries. It says another strength of the sector is a positive perception of well-being in the workplace. Eighty-four per cent agreed that employees are encouraged to balance their work and personal lives, a figure that is 13 points higher than those organisations that did not make the list.

The research also found that 84 per cent in the ranked IT firms offer working from home/telecommuting, compared to just 22 per cent in the average organisation. It also revealed that 74 per cent of the IT companies included in the rankings showed a profit in the latest financial year, compared to 50 per cent across all sectors that didn't make the grade. Furthermore, the consultancy says employees in the largest occupational group receive 62 hours a year in formal training – the average across all UK organisations is 20.4 hours.

Great Place to Work adds that what all the successful IT firms have in common is an "engaged workforce that is motivated and committed to delivering their organisation's goals". It says these companies have strong workplace cultures where innovation and collaboration are encouraged and rewarded.

"Our research shows that IT organisations are outperforming other sectors in the levels of trust and engagement in their organisations," states the firm. "They demonstrate good practice – even centres of excellence – in managing key HR issues such as recruitment and retention, as well as addressing the specific problem of attracting more women to the sector. As a result, IT Best Workplaces are likely to be more competitive and more successful than their peers."

LARGE COMPANIES	IT RANK
Salesforce UK	1
Softcat	2
Cisco UK	3
Adobe Systems Europe	4
Rackspace	5
SAS Software	6
MEDIUM COMPANIES	IT RANK
UKFast	1
CPS	2
Intuit UK	3
DMW	4
Autodesk	5
SMALL COMPANIES	IT RANK
Foundation SP	1
World Wide Technology	2
Nintex	3
Hutch	4
Computer Task Group	5

The top 16 firms to work for in the IT sector, according to the UK's Best Workplaces ranking. Full list at [www.greatplacetowork.co.uk](http://www.greatplacetowork.co.uk)

## Government to invest millions in data innovations

The government is providing £6m over three years to the Open Data Institute (ODI) to advance knowledge and

expertise in how data can shape the next generation of services and create economic growth.

The funding, delivered through the government's Innovate UK agency, will support a number of projects chosen by the institute to progress strategically important areas. These include building data infrastructure, improving data literacy, stimulating data innovation, and progressing the ethical use of data.

In the first year of the programme, work will focus on creating economic and social benefits from data. Among some of the issues that the ODI is aiming to address is how businesses can make better decisions by capitalising on emerging trends such as AI, blockchain, and measures that provide greater control over personal data. It will also look at how data and technology innovation

communities are nationally spread, and how this affects where government should invest and where businesses should establish themselves.

The studies and tools produced through the new programme of work will become practical assets that can be used and added to by others, to explore how data can and should work in our societies and economies.

"These new projects will advance our understanding of the opportunities data can bring as well as some of the pitfalls to avoid," says ODI CEO Dr. Jeni Tennison.

### IN BRIEF...

■ CompTIA has updated its *Security+* certification exam. It says the new version places greater emphasis on a security professional's practical and hands-on

ability to both identify and address threats, attacks and vulnerabilities. While there is no prerequisite needed to take the exam, candidates should be *CompTIA Network+* certified or have equivalent experience, and a minimum of two years in IT administration with a focus on day-to-day security.

■ Excel has developed a new training course focused around the recently revised *Construction Product Regulation (CPR)*, PoE and 2.5Gb/5Gb Ethernet. The modular programme is designed to provide generic industry information as an overview as well as hone in on specific details, particularly with *CPR* updates which are topical in the cabling infrastructure industry with the *BS6701* final comments due to be released later in November.

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### Benefit longer term, by investing in testing your UPS system

by Mark Waters

It is misguided to assume that just because a UPS is running; it is fully operational, fit for purpose and legal. While a power failure may only occur for minutes, recovery can take weeks, if not months (and be expensive).

UPS testing is riddled with complexities and dangerous, but what is involved? A maintenance contract provides 24/7 emergency technical support, plus monthly, bi-annually and annual testing including:

- Preventative maintenance – test transfer switches, circuit breakers and maintenance bypasses, use thermal imaging to locate hot-spots and reveal poor connections and gauge if anything is unusual.
- Checking protection settings and calibration – proactively assess what is going on and determine if any element is at the end of their useful life.
- Functional load testing – ensures optimum operational efficiency incorporating.
- Steady-state load tests to check input/output conditions and harmonics at varying load percentages (typically 0%, 50% and 100%).
- Complete operational test including a monitored battery-rundown to verify system continuity in a failure situation and determine battery degradation.

Using a company, with significant experience in UPS maintenance, testing and monitoring, such as Critical Power is paramount. Having the ability to claim for component failure under warranty or maintenance contracts means the manufacturer faces the cost rather than the user. So, granted UPS testing is costly and time-consuming, but the costs associated with an unanticipated loss of business will, without doubt, outweigh those incurred from testing.

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SW160010-R	Dynamode 16 Port 10/100 Switch N-Way Rackmount	£20.15
SW240010-RV	Dynamode 24 Port 10/100 Switch N-Way Rackmount	£23.00
Product Code	GIGA Switches	Price
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SWG80010-D	8 Port Gigabit Un-Managed N-Way Switch Desktop	£14.50
SWG240010-R	24 Port Gigabit Un-Managed N-Way Switch Rackmount	£64.00

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