

networking

FIXED & WIRELESS NETWORKS FOR ENTERPRISE USERS

The reality behind VR

Virtual reality at the Rio Olympics – raising the bar for data centres?

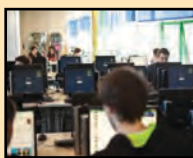
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Two thirds of IT and telecoms firms “unprepared” for EU exit

by James Hayes

Only one third of IT and telco businesses across the UK, France and Germany have a clear plan for dealing with the impact of the UK voting to leave the European Union in June, according to a new survey.

The poll of senior decision makers from more than 150 businesses – conducted by YouGov on behalf of law firm Pinsent Masons – found that 57 per cent admitted that there had been no discussion at board level about the potential impacts of a British exit from the EU.

“If the UK vote is in favour of leaving the EU, there will be profound implications for all businesses, irrespective of whether they operate or trade in – or with – the UK,” said Guy Lougher, partner and head of the Brexit Advisory Team at Pinsent Masons.

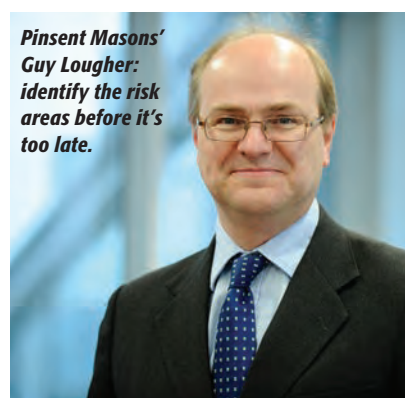


He said the figures reflect the fact that, while many larger firms have begun contingency planning for exit, a significant proportion have not yet contemplated the

impact a vote to leave might have. “My advice to businesses is to start taking steps now. Identify the risk areas and think about how these could be mitigated.”

Lougher said foremost among those should be identifying any business-critical contracts, and considering if they are future-proof. “Any agreements which specifically reference the EU as the territory governed by the contract may lack clarity. It is likely to be easier to agree amendments to those agreements now –

**Pinsent Masons’
Guy Lougher:**
*identify the risk
areas before it’s
too late.*



especially where contracts have not yet been signed – rather than after a vote when the people on the other side of the table will know that the clock is ticking.”

He added: “It’s also surprising, given the potential for economic disruption, how few businesses have entered into discussions with investors and funders as to their attitudes to risk in the aftermath of a ‘leave’ vote. It would seem prudent to have those conversations now amid relatively benign conditions.”

What would ‘Brexit’ mean for the UK mobile sector?

In the mass market, which accounts for the bulk of telecom operators’ revenues, the impact of Britain leaving the EU is unlikely to be substantial, according to analysts at IDC who say:

- Telecom services are mostly intranational markets already: i.e. people buy telecoms services from operators in the country where they live. In the absence of very much importing or exporting of telecoms services, the consequences of ‘Brexit’ on the UK’s international trading agreements and regulations would not affect the bulk of operators’ business.

- The main exception is a multinational company that frequently sources mobile services from an operator outside its base country. In practice though, Brexit is unlikely to have much of an impact in this case either. Multinationals are served by multinational

operators and/or groups of operators that have commercial agreements with each other (e.g., Freemove). Brexit need have no significant effect on these arrangements.

- On the operational level, an exit could cause some short-term headaches for Vodafone, a UK company with operators in several EU countries.

- It could have a similar (though lesser) impact on Telefónica, the Spanish company which owns O2 in the UK. Some adjustments in accounting rules and procedures, for example, are likely to be required.

- However, both Vodafone and Telefónica already have substantial operations inside as well as outside the EU, so they’re already accustomed to the operational requirements that entails.

Business continuity, disaster recovery and the latest EU data laws – feature pp10-13

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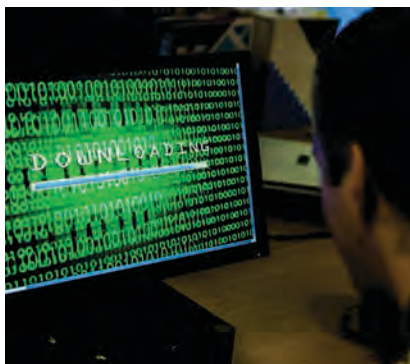
Small companies “overwhelmed and confused” by cyber security advice

While Scotland's small businesses are aware of the increasing threat of cyber crime, they are still failing to act on the threat effectively, according to research carried out by University of Glasgow.

Commissioned by the Scottish Government and the Scottish Business Resilience Centre (SBRC), the university claims its study was the “most detailed” cyber security survey of small businesses in the past year. It contacted 600 businesses, conducted 36 face-to-face interviews and reviewed 74 surveys.

It revealed how companies are being “overwhelmed and confused” by the amount of advice around cyber crime. As a consequence, respondents said that they are choosing to take only the most minor “common knowledge” preventative measures, such as using anti-virus software and firewalls, which leaves them unwittingly vulnerable.

More than 50 per cent said they searched Google for cyber advice with less than seven per cent consulting government websites. SBRC director Mandy Haeburn-Little said: “The fact that there is so much advice online – and also significant levels of conflicting advice – is leaving



More than 50 per cent of small firms in Scotland are said to be using the internet to find out about cyber security rather than consulting official government websites.

[businesses] confused, bewildered and overwhelmed.”

Haeburn-Little believes all this points to the need to establish clarity over recommended actions and a single source for advice and contact. She says the study results provide crucial guidance on how small businesses, government and other agencies all need to change their thinking to counter the threat of cyber crime.

The SBRC is currently scoping out the concept of a cyber hub for Scotland. Haeburn-Little says this would act as a single, trusted source of advice and cyber security services at affordable cost.

The centre is also proposing to highlight the survey recommendations in its ongoing discussions with the regional government and police as part of the Scotland's developing cyber strategy.

The recent Cyber Breaches Security Survey, carried out by Ipsos Mori for the UK Government, found two-thirds of large businesses have experienced a cyber attack or breach in the last 12 months – one in four of which were attacked at least once a month. Fifty three per cent of small businesses in Scotland think it is unlikely or very unlikely they would be a target for an attack, and only 23 per cent feel completely prepared for one, with 19 per cent saying they have not taken any steps to protect their data.

In its survey, the SBRC found that ninety-five per cent of businesses carried out security activities that showed they did care about security, but only fifteen per cent thought they were at significant risk of being the target of an attack. ■



BT's Larry Stone said the ICT agenda should move forward.

ICT can cut CO2 emissions, claims BT report

ICT-enabled solutions could reduce EU carbon emissions by over 1.5 Gt CO₂e in 2030 – a saving equivalent to almost 19 times the size of the expected footprint of the EU's ICT sector in 2030, or 37 per cent of the EU's total emissions in 2012.

According to a BT report, *The role of ICT in reducing carbon emissions in the EU*, smart manufacturing, smart buildings, and smart energy are potentially the most promising ICT-enabled carbon reduction solutions, accounting for almost 74 per cent of potential carbon savings analysed. The majority of gains (53 per cent) that can be driven by ICT are in improving energy efficiency, says the study.

The report also estimates that the EU ICT sector could generate new revenue in the region of €678bn and cost savings of €643bn.

BT says European countries are at different stages of readiness to instigate ICT-driven carbon reduction solutions, with the UK and Germany among the larger countries in a leading position to implement such measures. It further indicates that France could reap economic benefit from ICT equivalent to over €191bn, and Italy and Spain could generate €117bn and €113bn respectively in sustainable economic growth through ICT-enabled carbon reductions.

BT president of government and public affairs Larry Stone has called upon policy makers to “seize the moment and to move the ICT agenda forward”.

The role of ICT in reducing carbon emissions in the EU can be downloaded at www.bt.com/purposefulbusiness. ■

IT and telecoms firms plan for growth despite economic bumps

Despite a slowing world economy and renewed uncertainty about the future of the UK demand-side markets, SMEs in the IT and telecoms sector still plan to invest for future growth.

According to research from lending and savings bank Aldermore, 50 per cent of businesses surveyed in the sector also intend to increase their employee headcount over the next five years to foster growth, while 47 per cent plan to invest in new technology to increase productivity.

Furthermore, 20 per cent of SMEs in the IT and telecoms industry indicate that they intend to expand by joining forces

with another business, either through a merger or acquisition. Only eight per cent of those questioned said that they will not be taking positive action in order to grow their business.

With 92 per cent of respondents, the vast majority of SMEs in the retail sector see themselves as being in a ‘growth business’, and are making firm plans to achieve expansion.

“SMEs in the IT and telecoms sector are clearly being proactive, and have strong plans in place to grow their business into the 2020s,” said Aldermore's commercial director/specialist finance Andrew Dixon.

Andrew Dixon, commercial director of specialist finance at Aldermore, believes telecoms sector SMEs are gearing up for growth.



“They intend to promote their business through increased marketing activity, and they are taking steps to launch new products and hire new staff.”

Dixon added: “Whether this is despite of, or in reaction to, uncertainty brought on by the EU referendum is difficult to gauge. However, these steps will serve to increase the ability of SMEs in IT and telecoms to continue driving economic growth.” ■



Chop and change: the Tower of London is one of five palaces that will see the implementation of a DMR system.

State-of-the-art upgrades for palace comms networks

Five of the UK's most famous and historic palaces – the Tower of London, Kensington Palace, Hampton Court Palace, Banqueting House, and Hillsborough Castle – have received state-of-the-art communications network upgrades.

Cambridge-based Sepura supplied DMR Tier II communication systems, comprising 500 radios and eight repeaters, to replace the incumbent legacy analogue systems used by Historic Royal Palaces (HRP), the charitable body which manages the palaces. In a deployment that was carried out over 15 months, Kensington Palace was the first location to be equipped, with Hillsborough Castle the last network to go live.

The installations utilise the full range of functionality available on Sepura's radio systems, including GPS connectivity, along with personal security

applications such as Man-Down and Lone Worker. HMP's move to DMR took advantage of Sepura's analogue to digital migration procedure, and the system is designed to be able to grow and adapt as the organisation's communications requirements develop. It is anticipated that additional radios will be supplied on a hire basis for the palaces' seasonal events.

“We anticipate that this deployment will help to increase efficiency and enhance the customer experience for visitors to [the five palaces],” said security and facilities manager, Steve Sullivan.

“We have already noticed that audio quality was immediately much improved. Voice signals are stronger, and digital noise cancelling means that background noise on transmission is noticeably reduced.” ■

Digital bill overlooks short-term solutions

Most attention given to the government's Digital Economy Bill outlined in the Queen's Speech on 18 May focused on its commitment to introduce a new universal service obligation which would give everyone the 'legal right' to have a 10+Mbps broadband connection installed at their premises.

Although this will be good news for businesses based in areas not well served by higher-speed broadband access networks, the bill also scoped other business-related initiatives that form part of the government's vision of the UK as a 'world leader in digital provision'.

These include new powers for Ofcom to order communications providers to release data (such as customer complaints and broadband speed data) in the interests of the consumer and competition. Misleading or incorrect access speeds have been a bugbear of all consumers, and unreliable service provision hampers performance of companies where the ability to 'digitally deliver' is seen as mission critical.

The bill also promises measures to make 'switching providers easier' by allowing Ofcom to require service providers to coordinate switches on behalf of customers. Consumers would have to deal only with the new provider in order to switch. This may prove beneficial to firms who want to maintain more than one broadband service contract – one for line-of-business requirements, and another for back end or support applications, which are less critical, and can be switched without disruption risk.

Support for digital industries by addressing

The bill's benefits will take time but fixes are needed now, according to Boosty's Paul Evans.



difference in online/offline copyright laws is also one of the bill's ambitions.

However, even if the government's plans are pushed through, it could still take up to five or six years to roll out superfast fibre broadband in accordance with its mandates, according to Paul Evans, CEO at Boosty: "By then the broadband infrastructure may not be sufficient enough to support a new generation of digital services. Consumers and service providers need a quick fix while government and Ofcom decide how to enforce its legislation."

The answer is "staring government, regulators and industry bodies in the face", Evans argues. "By combining fixed line and mobile networks to plug coverage gaps, operators can improve broadband speeds and reliability. This hybrid access model, which is already being adopted by consumers, is a cost-effective and more realistic solution to the empty promises from government of 'better broadband.'"

Boosty specialises in routers that combine with smartphones to accelerate home broadband speeds. ■



THE WORLD ACCORDING TO...

Sean Weir, business development director, smart and M2M, Arqiva

How the IoT can turn healthcare from reactive to proactive

For all the talk of smart homes and cities, it's the healthcare industry that has most reason to be excited about the IoT revolution. With connected 'things' continuously communicating, the provision of medical care could change beyond recognition. Perhaps the most significant shift will be a switch from a reactive approach to a proactive one.

Healthcare in the UK today is largely reactive – the vast majority of medical provision comes after something has happened or a condition has been identified. However, with the IoT all this could change. Whilst the technologies being developed may not be capable of foreseeing illness in a telepathic way, they could give us a clearer indication of problems to come than anything currently available.

For example, take fitness wearables (such as *FitBit*). These devices track everything from the number of daily steps the wearer takes to their sleep patterns at night, calories burned, and heart rate.

If these devices were to take the next logical step and log this information with a person's GP, any potential conditions could be identified much earlier – even before they become a real problem.

To manage the large amount of new information this process would produce, IoT systems can be created to automatically monitor their output for an individual user and understand where it falls within a suitable range. Any results that sit outside the 'safe zone' would trigger an alarm, thus showing that something is awry. In short, GPs would manage by exception, being alerted to noteworthy events as and when they first arise, rather than having to wade through a tumult of data.

Such a use case represents just the tip of the iceberg in terms of the benefits the IoT could bring to our healthcare system. The figures it could save the NHS are staggering, but more than this, it could help millions of people around the country live happier and healthier lives.

EDITORIAL:

Editorial director: Rahiel Nasir
rahieln@kadiumpublishing.com

Designer: Alan McClenaghan
alanm@kadiumpublishing.com

Contributors: James Hayes;
Phil Bindley; Sean Weir

ADVERTISING & PRODUCTION:

Sales executive: Andy London
andrewl@kadiumpublishing.com

Production: Suzanne Thomas
suzannet@kadiumpublishing.com

Publishing director:
Kathy Moynihan
kathym@kadiumpublishing.com

networking is published monthly by:
Kadium Limited, Brassey House,
New Zealand Avenue,
Walton-on-Thames, Surrey,
KT12 1QD, United Kingdom.
Tel: +44 (0) 1932 886 537
Fax: +44 (0) 1932 886 539
www.networkingplus.co.uk

Annual subscription: £80 (UK); £95 (Europe), £100 (USA and the RoW) airmail. Cost per single copy is £8.25.

Printed in England by
The Magazine Printing Company
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Quortus selected in joint Lime, Ubuntu wireless network project



Quortus CEO Andy Odgers says the partners will be able to tap into the 'power of the crowd'.

Quortus' *EdgeCentrix (ECX)* technology has been selected as part of a fully programmable mobile network capability launched in April by Lime Micro.

Quortus ECX Core is a fully-featured virtualised core for cellular networks. It supports 4G LTE, 3G and GSM radio networks with VoLTE/SIP voice, packet data and SMS, either in a standalone deployment or with operator interconnect.

The new network capability, itself a collaboration between Lime and Canonical, will 'change the way mobile

networks are built in the future', the companies claim.

EE will use technology developed using this platform to provide 4G coverage to a remote community in the Scottish Highlands and Islands.

The new platform includes Quortus' software-based implementation of a complete mobile core network as part of Lime's 'network in a box' solution. Developers can configure the network platform via software available through the Snappy Ubuntu Core stores, allowing the creation of new mobile network applications and services.

Quortus CEO Andy Odgers describes the move as a "radical new development in mobile networking." He believes the new approach to mobile network innovation will allow operators to foster developers that can tailor network services to their needs – and those of their customers.

"EE, Lime Micro and Ubuntu have combined to produce a product that really will enable mobile operators to tap into 'the power of the crowd', and will allow application developers to drive value and innovation into the mobile networks of the future," said Odgers. ■

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NGD increases capacity at Cardiff

Next Generation Data (NGD) has upgraded network capacity at its tier three carrier-neutral data centre in the Cardiff Capital Region. NGD says it will leverage global telecommunications provider Level 3 Communications' enhanced network services to enable customers to connect to leading cloud platforms and achieve greater efficiencies. The new connection will provide diverse routing services, including an initial six dedicated 10Gbps links from NGD's mega-data facility to the Telehouse exchange hub in London Docklands, to which many of NGD's customers require connectivity. ■

Volta expands to meet increased demand

Volta Data Centres has announced the opening of the third floor of its central London facility. Gratte Brothers Limited have been appointed to deliver the 1.5MW IT load and approximately 400 racks. The new floor is scheduled to be available from September 2016. "The fitting-out of the third floor is a significant step in the evolution of Volta, and testament to the popularity of the central London location," said Volta CEO Matthew Dent. "We have several interested parties, including existing customers who are set to expand." According to Volta, central London is proving to be a hotspot for organisations looking to co-locate. Over the past 12 months the company says it has seen increased interest from businesses in the media, finance, cloud and managed service sectors, many of which have enquired about space on the new floor. ■

It's fast up north

Leeds and Bradford have become CityFibre's latest Gigabit Cities. Working with its launch partners Exa Networks and Diva Telecom, CityFibre's infrastructure is facilitating the rollouts of ultra-fast internet services to businesses and public sector in both cities. With nearly 200km of all-fibre optic infrastructure available to users, Leeds and Bradford are now among the best digitally-connected cities in the world, the company reckons. CityFibre adds that its network will help support the drive for a 'Northern Powerhouse' by providing the infrastructure to enable digitally-based businesses. ■

Alder Hey to use 'cognitive' data to improve patient experience

Alder Hey Children's NHS Foundation Trust has entered into a collaboration with the Science and Technology Facilities Council's Hartree Centre to create what it is claiming to be the UK's first 'cognitive' hospital.

The programme will use IBM's Watson platform to analyse feedback provided by patients in an effort to improve their experience in three areas. These include: the identification of anxieties and provision of information and reassurance on-demand; the informing of young patients and their parents about appointments and after-care; and the delivery of insights to clinicians based on the tone and sentiment of these interactions.

An initial version of the programme platform is scheduled to be ready for on-site testing in Q4/2016. Over the next few months,



Alder Hey hospital will use IBM Watson to crunch data for cognitive analytics.

hundreds of Alder Hey patients and their parents are being asked a range of questions

on subjects such as parking, preferred meal options, favourite games and films, and what they want hospital bedrooms to look like. They will also be asked what questions they have about clinical procedures, general anaesthetics, and surgery.

Using these data, Watson will then provide cognitive analytics that deliver insights enabling the hospital to better understand what is happening within it. Patients and their families will eventually be able to access information based on the analyses via a tablet PC or smartphone.

"Helping our patients and their families prepare properly for coming into hospital will really reduce their anxiety, and could mean we can get them better and home faster," said paediatric surgeon and director of innovation at Alder Hey, Iain Hennessey. ■

Rio heralds new era of ultra-heavy workloads for DCs

Expectations of spectators watching the Rio Olympic and Paralympic Games in 360° virtual reality (VR) will place critical duress on data centres involved in relaying the events to the worldwide audiences, an industry expert has warned.

Using a compatible headset, viewers will be 'virtually transported' into the Olympic action with VR coverage including the opening and closing ceremonies, and one key event per day, promises Olympic Broadcasting Services.

According to Aegis Data CEO Greg McCulloch, use of VR during this year's Olympics could set precedents for the way sport and other entertainment will be consumed in the future: "With global

sporting events on the horizon, such as the FIFA 2018 World Cup in Russia, we can expect to see the availability of VR opening up a whole new economic and technological proposition for sports teams and the public – and organisations will inevitably seek to make the most of that."

While the opportunities that VR represent are immense, in order for it to realise its potential McCulloch says "assistance from data centres will be just as crucial."

He adds that in order to support the growing VR market, data centres will have to raise their games. "As the technology continues to mature, the data centre community should be using this time to upscale their technology capabilities to



Are data centres ready to handle virtual reality at sporting events such as the Olympics?

handle increased demands. This should include analysing consumption patterns across different industries, to detect fluctuations as well as connectivity or security issues, which may arise. The games will provide invaluable data around this." ■

Brunel expands global 13,000 user UC network

Recruitment consultancy Brunel International is continuing to extend company-wide collaboration with global network services and unified communications from Orange Business Services (OBS).

Brunel International is an international service provider specialising in the flexible deployment of knowledge and capacity in the engineering, oil and gas, aerospace, automotive, ICT, finance, legal, and insurance, and banking fields. OBS has deployed a global WAN for the company

based on its *Business VPN* that connects 109 branch offices in 24 countries. Support and management is delivered by local specialists, and supported by a global team.

The five-year contract with OBS includes *Business Together as a Service*, a cloud-based unified communications and collaboration (UCC) solution. This enables Brunel's 13,000 employees to access unified messaging from the Orange cloud. It allows them to access collaboration tools

and work effectively with their colleagues and partners wherever they are, using their computer, tablet, smartphone or PDAs.

"Facilitating an effective, flexible, and secure environment for Brunel employees worldwide means not taking any unnecessary risks with our connectivity," said Stefan de Boer, manager global IT at Brunel. "Brunel chose Orange Business Services to help it standardise its business processes and to provide continuity and manageability of its infrastructure." ■

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Bandwidth boosts needed for cloud

Despite increasing adoption of cloud-based services, enterprises around the world are still having to beef-up their network infrastructures to meet escalating demands on bandwidth. More than half of respondents to a global survey of IT directors, CIOs and network engineers expect bandwidth requirements to grow by 50 per cent in 2016, and almost half of them expect capacity needs to double by the end of 2017.

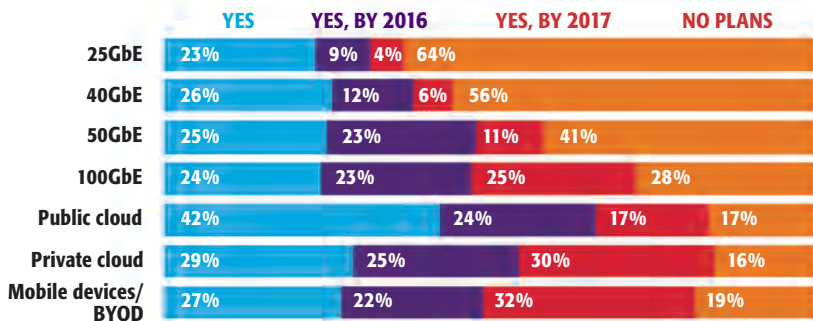
Around 90 per cent of respondents to Viavi's ninth *State of the Network* study have at least one application in the cloud, and 28 per cent have the majority of their applications based there. More than 80 per cent say that they will be using public or private cloud by 2017, and more than 50 per cent will have 'the majority' of their applications cloud-based by next year.

The study also found that more than 56 per cent are using two or more public cloud vendors, with 43 per cent using two, and 13 per cent using three or more.

Viavi's research revealed that loss of visibility and control, tracking end user experience, and SLA enforcement, were cited as the top three challenges in moving to the cloud. Almost nine in 10 respondents described each of these issues as being 'very challenging' or 'somewhat challenging'.

In addition, this year's study found that two out of three respondents have already deployed 'some facet' of software-defined networking. That's compared to the 2015 survey when Viavi predicted SDN adoption to be 51 per cent by the end of 2016, with slightly less than half of respondents saying they had 'no plans at all'.

EMERGING TECHNOLOGY DEPLOYMENTS



The results of Viavi's 'State of the Network' survey show that emerging network technologies have gained greater adoption over the past year.



VIEW FROM THE TOP

Phil Bindley, CTO, The Bunker

Alignment of business and technology is vital for cloud success

While it's important to recognise that not all good strategies succeed, the odds are stacked against you when business and IT strategies are not properly aligned, planned and executed.

Indeed, the results of 'bad' strategy are clear to see: migrations that are never fully or successfully executed; failure to meet compliance and security requirements; that are inadvertently invalidated; or a sudden realisation that the services you thought you were getting are not actually what's being delivered (despite what the supplier had promised).

We need to join up our creative thought processes and apply our knowledge of our business in order to formulate a strategy for business and IT. And nowhere more so than in cloud deployments.

Here, a bad strategy may look something like this: 'We are going to take all of our business into the cloud'. It's easy to imagine and create that vision, but where is the application of knowledge and experience? Where's the systematic science of studying

the IT world in taking this approach? How can a business actually achieve this and why would it want to do it? What are the benefits and risks? Without asking and answering such questions, we cannot simply make a statement and expect a successful outcome.

Strategy needs to come from the bottom up and not the top down. To gain the insight and to fully understand all of the benefits and all of the risks, one must simply ask for help – engage others, internally and externally, but also take responsibility for having a strategy and the planning and execution of it. In fact, it's essential to direct and empower others to deliver. But don't just come up with an idea and tell everyone else to go do it.

Ultimately, cloud strategy means understanding all of the possible outcomes, the risks, the benefits, the opportunity cost and the impact to others and how they feel. A good strategy is one that everyone understands – not only what it is, but also the why, how and when.

Citrix and Microsoft work closer for greater product integration

In an expansion of their existing strategic partnership, Citrix has selected *Microsoft Azure* as its preferred and strategic cloud for its future roadmap.

The two companies are working together on new integrations between Citrix's *XenMobile*, *NetScaler* and Microsoft's *Enterprise Mobility Suite (EMS)*.

Citrix president and CEO Kirill Tatarinov said: "Our customers are asking Citrix and Microsoft to work more closely together to help them leverage innovations like *Windows 10*, *Office 365* and *Azure* more fully. Companies of all sizes across all industries now have an opportunity to embrace digital transformation."

As part of the expanded partnership, Microsoft and Citrix will offer customers flexible options to deploy *Windows 10 Enterprise* within their organisations.

Citrix CEO Kirill Tatarinov reckons companies of all sizes now have an opportunity to embrace digital transformation.



Later in 2016, Citrix will offer customers who have licensed *Windows 10 Enterprise (Current Branch for Business)* on a per-user basis the option to manage their *Windows 10* images on *Azure* through the *XenDesktop VDI* solution.

"This will help customers deploy virtual apps or desktops and accelerate *Windows 10* adoption for those customers who are using Microsoft cloud solutions," added Tatarinov.

Rampant shadow IT usage is 'undermining' enterprise security

IT leaders have admitted that use of unauthorised cloud services by employees is now rife in many enterprises, and business leaders have no idea of how and how much sensitive data is being trafficked to unapproved external entities.

In a study by Cloudstanding, 350 IT practitioners report they believe as many as 70 per cent of employees are using cloud technologies that are not managed or supervised by their company.

The media industry is said to be the worst-offending vertical sector, with the survey's figures suggesting that 83 per cent of its employees use unauthorised services. That's compared to the manufacturing sector which is at the bottom of the list – 49 per cent of its workforces were found to be using uncontrolled cloud technology.

Cloudstanding's Maarten ten Broeke says there's no need for employees to resort to the shadows.



"Cloud services can be integrated within companies securely and with oversight of the IT department, without forcing employees to resort to using these services in the shadows," said Cloudstanding co-founder Maarten ten Broeke. "Unless [they are] properly managed and secured, there will always be the risk of data leaks, and of security threats entering the company from external sources."

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Critical Steps in Edge Computing

THE SHARPEST EDGE

Edge computing isn't just a buzzCONCEPT. During 2016 it has the potential to impact business in numerous pragmatic and immediate ways. In fact many organisations are already deploying edge strategies to deliver competitive advantage – whether through accelerated data analytics or more responsive customer service.

Technology innovations are becoming the primary driver of business innovation - so IT leaders need to show they're adding value as the steward of these developments. Businesses must keep pace with customer demand or die out. And this is where edge computing can deliver. Edge will help redefine how a business can develop its services, deliver them to its customers and then efficiently manage its own operations. Change is coming.

UNDERSTANDING EDGE

Edge computing is the process of moving computing power away from the core of the data centre to the edges of the network, closer to where customers are based and digital interactions are taking place. This approach offers several key benefits:

- **Speed of delivery:** Edge computing reduces the need to transport information to a core data centre, which can lead to delays in data being received and processed
- **Availability:** By enabling computing resources at the edge, it is possible to keep these remote sites functioning irrespective of failings at the core
- **Storage:** Edge can allow critical data to be stored closer

to the point of consumption, making more relevant data constantly available

- **Data analytics:** By placing analytics at the edge businesses can derive actionable insight faster, helping them to stay ahead of competitors and customer expectations

GETTING STARTED WITH EDGE

Edge computing brings with it both opportunity and challenge. IT leaders must act as a consultant to the business, managing the diverse expectations of the lines of business. It will be critical to understand the types of data and transactions that need to be accounted for, and the practicality, cost and commercial value of each deployment node.

If IT leaders are to truly own the edge computing strategy, they will have to address a number of complexities which sit both inside and beyond their traditional remit:

- **Data centre nodes:** Each edge node will require

performance IT and networking equipment. This will vastly multiply the number of sites with enterprise-grade rack enclosures - each containing precision cooling, uninterruptible power, rack PDUs, and wiring management

- **Standardisation:** The massive increase in sites and devices will accentuate the pressure on IT teams. Standardisation - from the equipment procured to the processes followed, will help reduce this complexity
- **Security:** Getting your edge strategy right will involve robust, multi-layered security. IT teams not only need to detect security threats, they must also have the capability to seal off and protect the wider system, likely involving advance endpoint solutions
- **Corporate culture:** As with any major technology implementation, the technology itself is not the only factor that needs careful management. Organisations pursuing an edge strategy cannot forget the cultural

changes that will be required to deploy it effectively

The delivery of an effective edge computing strategy isn't going to happen overnight. It will challenge IT professionals on many fronts, but with this risk comes an enormous reward as IT performs an increasingly pivotal role within the business.

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Learning curve

With more networked products and services being used in education, IT managers often have to deal with a unique set of challenges. Here's how some of them can be overcome.

Cat 6 and fibre create future proof network

Due to a complete refurbishment in 2014, Park Community School in Havant needed to replace its existing infrastructure which consisted of Cat 5 and Cat 5e with OM1 fibre. Portsmouth-based Easy Networks advised the school to upgrade to OM4 to improve the fibre backbone performance, and recommended Excel as the solution provider.

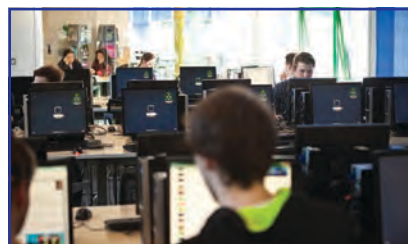
Excel Cat 6 UTP cable was chosen to provide optimal support for the network's high-speed data protocols, delivering 1Gbps performance to the workstation. Excel says its Cat 6 panels have been designed to meet or exceed the latest ISO and TIA requirements for compliance, and also come with rear management as standard. The company adds that this small but important feature offers great benefits to the overall

quality of a network installation – the unit allows for the cables to have a uniform and smooth bend radius, aiding the system to give the best-possible performance.

Excel's Cat 6 cabling also enables the end user to utilise PoE whilst still delivering GbE. The company reckons this makes the network "perfect" for taking on IoT deployments, where it can be used for wireless APs, IP access control, alarms and IP CCTV, helping the school to become more of an intelligent building.

Excel CR Racks were chosen to house all the equipment. These allowed for cable entry in the roof and base, and accommodated a load of up to 600kg. Two Excel PDUs were also installed within the racks, with up to 12 sockets per unit giving service for all required switch and server equipment.

Excel 12 core OM4 loose tube optical fibre cable, panels, patch leads and connectors were installed to provide the fibre optic backbone of the network. The installation took place over several floors, and buildings. These were linked together by 12 Core OM4 Tight Buffered fibre optic cables, and deliver up to a Gigabit of Ethernet up to 1,100 metres. The system offers future proofing as the cables are capable of delivering 10G over 500 metres and even 100G up to 150 metres.



Helping academy trust deliver BYOD benefits

St. Wilfrid's Catholic High School and Sixth Form College in Featherstone is the largest site within the Bishop Konstant Catholic Academy Trust. It had a wireless system in place which was expected to last for at least five years, but it soon began to struggle as IT manager Chris Slater explains: "With the increase in 'bring your own device' from students and staff, there was an instant demand for a wireless network that could manage and facilitate more devices without slowing the system down. Unfortunately, our network just couldn't cope with the demand."

The wireless system started experiencing issues such as a full classroom of student with laptops that could take up to 40 minutes to log into the overloaded network, as well as complaints from users that they couldn't connect to the internet.

The IT team turned to ANSecurity for help to implement a Ruckus Wireless solution. The project initially focused on the 1,800 pupils and staff at St. Wilfrid's participating in a trial to test and become familiar with the vendor's products before investing in the upgrade.

Slater says that since the installation of the new network there have been no issues. He adds: "[This] is great as there are nine other smaller primary schools whose IT systems we manage, so it helps reduce the support workload. We're now looking towards using Ruckus Unleashed which is a cost-effective way of deploying Ruckus to smaller sites."

Ruckus Unleashed has been designed to enable small and medium organisations to deploy and configure Wi-Fi in minutes. Slater says the system will save the schools a "considerable" amount of money as it doesn't require a controller. Instead, a nominated AP acts as the controller which reduces cost of ownership and is compatible with all future Ruckus architectures. To improve coverage, the AP uses the vendor's BeamFlex+ technology and also includes a range of guest access services.

Slater says the network is now not only easier to manage, but processes that were once very time-consuming and troublesome have become straightforward and simple. More importantly, he says teachers no longer have to waste valuable lesson time waiting for students' devices to access the network – the classroom full of laptops that used to take up to 40 minutes to log into the wireless network now takes just four minutes.

Furthermore, with the last site upgraded in 2015, the IT department has dramatically reduced the level of user complaints and streamlined many of the time consuming administrative tasks associated with the Wi-Fi networks.

Busy Bees reduces 35 servers to just six

Busy Bees is the UK's largest childcare nursery provider and runs more than 200 childcare nurseries around the country. It has grown rapidly through a series of acquisitions and wanted to update its information systems to provide a scalable, familiar and flexible solution for its workforce.

IT manager Paul Creaser says the company had outgrown its existing IT infrastructure and had more than 35 physical servers. Not only was the server room full, air conditioning and other related costs were also extremely high. At the same time, Creaser and his team of six staff were supporting 1,000 PCs at 226 locations around the country.

Working with Busy Bees' IT partner Total Computers, the team defined a new system that combined server virtualisation with a virtual desktop for users. They experimented with various solutions but found that most of them were not only expensive but also included features that were not needed.

Citrix's XenServer was considered to be more cost effective. It enabled Busy Bees to cut the number of physical servers required to just six, with a consequent saving on space and running costs. The company deployed Citrix's NetScaler as a remote access gateway to provide employees seamless, secure access to the system from anywhere.

"Users prefer a familiar desktop," says Creaser. "Using XenApp to deliver Windows apps and desktops as a secure mobile service has been greatly advantageous for us. Everyday tasks like searching for a document become much easier, especially for occasional users like many of the nursery staff."

As a result, the IT team handles far fewer support issues. Creaser says supporting a single, virtual desktop is simpler than managing many individual machines. He adds that the company now has 14 times as many PCs but manages them with just three times the staff.

Server management is also simpler, and Creaser says the reduced number of six servers provide a more resilient service: "We can lose one of almost anything and have no noticeable impact on users. System stability and ease of management have been the key things for me."

The team are now working with Total Computers to make greater use of the functionality provided by NetScaler for security, load balancing and disaster recovery. They are also evaluating the benefits of extending flexible working to include a BYOD scheme, and are considering the use of thin client hardware as a potential replacement for the PC estate.



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Most organisations think of business downtime as a result of a natural disaster or calamitous event such as a fire, but this actually only accounts for five per cent of data loss.

New EU data laws could prove to be a headache for all organisations. RAHIEL NASIR looks at what the GDPR could mean for business continuity and disaster recovery, and whether a 'Brexit' offers a way out of complying with the legislation.

On 25 May 2016, the EU's General Data Protection Regulation (GDPR) came into force. Ratified earlier this year, the legislation changes the way in which organisations collect, use, transfer and store personal data of millions of EU customers (*see News, Jan 2016*). That includes any EU-based provider that holds data as part of offering a business continuity (BC) service.

According to the Henley Business School at the University of Reading, the GDPR represents a "huge threat" to BC for the IT sector in the UK. Companies now have just two years to comply with the new ruling or risk fines of up to four per cent of global turnover or €20m (around £153m), whichever is higher.

Henley points out that one of the key changes brought about by the legislation is the way in which consent for processing personal and special data – such as financial information of EU citizens or those within the union – can be done lawfully.

"Firms will now face a raft of guidance from the ICO that will be in alignment with these new data protection principles," warns Ardi Kolah, co-programme director at Henley. "This will effectively introduce the GDPR 'through the back door' well before the deadline of the two-year transition has expired." He adds that organisations will now need a new generation of data protection officers (DPOs) to ensure GDPR compliance. Citing research from

specialist recruitment agency GO DPO, Kolah says that in the financial services sector alone, around 33,000 companies will require a DPO as part of a raft of new obligations that make the GDPR a "game changer" in how organisations can continue to do business within the EU.

That's only the tip of the iceberg. In research published earlier this year, YouGov and cloud access security broker Netskope found that almost 80 per cent of IT professionals in medium and large organisations are not confident of ensuring GDPR compliance in time for the May 2018 deadline (*see News, Feb 2016*). It advises both cloud-consuming organisations and cloud vendors to take active measures now.

Dave Allen, SVP and general counsel at cloud-based internet performance management company Dyn, sounds further alarm bells: "While some internet companies have begun to address new challenges at the fixed locations where data is stored, this alone will not necessarily be enough to ensure compliance.

"Those companies focusing solely on data residency may well fall victim to a false sense of confidence that sufficient steps have been taken to address these myriad regulations outlined in the GDPR. As the GDPR will hold businesses accountable for their data practices, businesses must recognise that the actual paths data travels are also a key factor to consider. In many ways, the constraints

which come with the cross-border routing of data across several sovereign states mean these paths pose a more complex problem to solve."

Allen says companies that rely on the global internet to serve their customers should be "seriously considering" visibility into routing paths along both the open internet and private networks. He believes that as we enter an era of emerging geographic restrictions, firms with access to traffic patterns in real time, in addition to geo-location information, will find themselves in a much stronger position to tackle the challenges posed by the GDPR.

According to Jon Geater, CTO, Thales e-Security, the new rules also highlight another factor that everybody should already know: you can outsource your risk, but you can't outsource your responsibility.

"If organisations use a third-party provider to store and manage data – such as a cloud provider, for example – they are still responsible for its protection and must demonstrate exactly how the data is protected in the remote system. Therefore, formal privacy-by-design techniques need to make their way down the supply chain if companies are to avoid penalties or nightmarish discovery and analysis tasks."

Geater uses the term "privacy-by-design" as this is an integral part of the GDPR. Businesses now have an obligation to factor in data privacy from the very first stages of a project as well as throughout the life of the relevant data processing.

While the issues of data protection and privacy should be at the top of the agenda for all concerned (and that includes GCHQ and the NSA, although we don't have space to talk about PRISM here), the GDPR looks set to be a big headache for most organisations and enterprises. Is there a solution? Well, we could all vote to leave the EU on 23 June. So what would a so-called 'Brexit' mean for the providers of business continuity and disaster recovery (DR) services in the UK?

The long arm of the law

Disaster recovery software specialist Zerto says ensuring uninterrupted operations is always a high priority for companies but if Britain exited the EU the need for flexible BC & DR would be even more important in achieving that objective.

"Companies should be carefully assessing their IT infrastructure to validate that their systems are ready for any disruption, including those caused by the changing political landscape," warns EMEA VP Peter Godden. "If Brexit comes to fruition, companies may find themselves needing to move their data into or out of Britain to align with new compliance regulations, which will truly shine a light on the importance of BC/DR software as many will struggle to manage mission critical data across disparate systems without experiencing downtime."

But that could be easier said than done.

Intralinks, which provides a cloud-based content collaboration network, believes that if we were to leave the EU, it would be some time before UK and firms based elsewhere outside the country would know what to do around the issue of data transfer. Deema Freij, the company's global privacy officer, says: "Any practical guidance would be unlikely to arrive immediately. During that time, many companies could be unknowingly operating against the law, leaving them with a number of critical legal issues and increasing the risk of data breaches."

At the end of the day however, the UK leaving the EU does not necessarily mean a split with the union's regulations. Technology and digital media law firm Kemp Little notes that businesses offering goods or services to EU residents or monitoring their behaviour will need to comply with the GDPR regardless of whether they are based in the EU.

"In the event of a vote for the UK to leave the EU, the impact of the GDPR may be reduced, although many UK firms are likely to be caught by the extra-territoriality requirement, and will therefore need to comply with the GDPR regardless of the outcome of the referendum," says Nicola Fulford, Kemp Little's head of data protection and privacy.

US-based Quorum has offices around the world and believes it's important that organisations keep data stored in the country it originated from. It says this filters right down through every part of the business, from offsite storage through to backup and replications residing in an offsite data centre.

Gabriel Gambill, Quorum's senior director of product and technical operations, says: "UK organisations are

RANK	DATE	DISASTER	CAUSE	CONSEQUENCES
1	9 Apr 15	Holborn fire	Underground electrical fault	Burned for three days; 5,000 evacuees; 3,000 properties lost power.
2	29 Jun 15	Kennington floods	Burst water main	Road under half a metre of water; 15 properties affected; 72 fire-fighters needed.
3	31 Jul 15	Royal Berks. Hospital power cut & flood	Burst underground pipe	A&E closed to all but critical patients; second small fire in coronary care unit; medical staff worked through the night with backup generators; fire crews pumped water for more than three hours.
4	4 Aug 15	Heathrow Airport power cut	Issue with power supplier	Power out for three hours; 50 BA flights left behind cases & equipment; 3000-4,000 people without bags.
5	26 Sep 15	Hampton-in-Arden fire	Accidental fire	Factory supplies 25% of UK's toffee apples. On-site gas cylinders & oil drums posed threat to neighbours; five fire crews & around 25 firefighters took two hours to battle the blaze.
6	12 Nov 15	Storm Abigail	Extratropical cyclone	84mph gusts; 20,000 properties affected; ferry services cancelled & schools shut.
7	4 Dec 15	Forth Road Bridge closure	Crack in truss under carriageway	80,000 vehicles diverted daily for 19 days. ScotRail added 6,500 train seats, 33 buses & 11,000 seats on key commuter services. £1.4bn for replacement bridge.
8	5 Dec 15	Storm Desmond	Extratropical cyclone	Wind speeds up to 81mph plus severe rain; more than 60,000 homes without power; over 1,000 evacuees
9	28 Mar 16	Storm Katie	Extratropical cyclone	Wind speeds up to 106mph; more than 20,000 homes without power & 130 flights diverted.
10	29 Mar 16	Saltley recycling site fire	Accidental fire	800 tonnes of metal & plastic ablaze; power supplies to 4,000 homes cut off; over 100 firefighters in attendance.

Biggest threats to business continuity in the UK: in April 2015, an electrical fault under the streets of Holborn led to a fire that burned for 36 hours, resulting in the evacuation of 5,000 people and leaving 3,000 properties without electricity. According to managed service provider IT Specialists (ITS), the blaze was the UK's biggest business continuity disaster over the last 12 months. As part of Business Continuity Awareness Week 2016 held in April, the company compiled a top 10 list of disasters, highlighting some of the biggest threats to continuity since March 2015. ITS says it carried out the research to help enterprises understand the types of incidents that could affect them.

now fearful of what might happen to their data stored abroad. But whatever the outcome will be in June, businesses need to use this opportunity to opt for solutions that store data within the country it resides in."

Challenges beyond the EU

Gambill says that while most organisations think of downtime as a result of a natural disaster, this actually only equates for five per cent of data loss. But he adds that whether it's the result of a natural disaster, hardware failure, human error or malicious attack, data loss and downtime remain a huge threat which businesses can ill afford.

"Businesses need to be prepared for human error and hardware failures which are inevitable. Staff members simply clicking on the wrong button can cause disastrous consequences, and businesses need to have a DR and BC plan in place to make recovery as quick and simple as possible. The reality is that data loss can come from a wide variety of sources and it is therefore a huge threat to businesses, but it can be countered by a simple disaster recovery and business continuity platform."

But Daren Howell, senior manager of solutions marketing at Sungard AS, believes simple solutions are not enough as today's enterprise IT environments are now far more complicated.

"Several years ago it would have been acceptable for a business to simply have a robust BC & DR plan in place with the aim of getting the business back up and running as soon as possible. BC/DR is no longer about recovery but availability."

"The daunting challenge of delivering all time availability is also compounded by an increasingly complex IT landscape; meaning this quest for availability sometimes takes a back seat when brought to the attention of the wider business."

To put this into context, he says recent research by the Ponemon Institute found that the cost of just a single minute's downtime for general businesses could reach more than £5,700 – and that's



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not even taking reputation damage into consideration.

Howell agrees that traditional forms of disruption such as power outages and hardware failures still plague businesses, but says several threats have also emerged that were hardly on the radar a few years ago. "Notably, we are seeing more issues arising from communications-related failures. This suggests that while technology resilience has been prioritised, enterprises may be neglecting other important factors in maintaining availability, namely, people and processes."

In April, Macrium Software published the findings of its research that asked reseller partners for their views on the backup industry, challenges and changes (*The Good, The Bad and The Ugly – the Backup Space from a Reseller*

Perspective). It revealed that hardware failure and human error are the biggest threats to corporate data.

"This indicates that businesses need to make sure that backup is an integral part of their data security strategies," says the company's sales director Stephen Macpherson. "They need to ensure they are investing time and effort in appropriate trustworthy technologies and regularly testing their current backup solution for recoverability."

All about the cloud?

Macrium's study also found a trend towards Backup-as-a-Service (BaaS) with almost 75 per cent of its resellers now offering this. "It appears that many of their clients want backup and recovery taken off their hands and handled by the

professionals, either on premise, in the cloud, or a hybrid solution," states the research report.

It therefore comes as no surprise that when it comes to new products for BC & DR, there seem to have been far more new cloud-based solutions launched as opposed to physical appliances.

For example in May, data protection specialist Druva claimed to have launched the industry's first public cloud platform to converge backup, archival and DR.

The US-based company describes *Phoenix* as a "secure and elastic cloud solution that stores data indefinitely with limitless snapshots and flexible retention policies using patented, client-based global deduplication". At the same time, the platform is said to provide for continuous backup of physical and virtual servers, including the ability

to automatically failover and spin up VMs in the AWS public cloud, ensuring always-on business continuity.

Druva says *Phoenix* is built upon a unique, scalable, cloud-first architecture that offers "unprecedented" cost savings for enterprises. The firm reckons these are achieved by minimising the backup and archival storage footprint while eliminating the need for expensive hardware and data centre facilities. Druva adds that it has adopted true consumption-based licensing so organisations only pay for what they use.

Asigra is hoping more managed services providers (MSPs) in the UK will use its cloud-based backup and recovery software following a recent partnership deal signed with Azlan, the value added enterprise distribution arm of Tech Data.

According to Asigra, its enterprise-class, multi-tenant and agentless *Cloud Backup* software reduces recovery time objectives and eliminates silos of data backups. The firm says it does this by providing a single consolidated repository with dynamic autonomic healing along with recovery assurance and low total cost of ownership.

All backups are encrypted before transmission to a cloud vault and remain encrypted while they are stored. Asigra says the only one that has access to the decryption key is the customer.

Meanwhile in March, Zerto announced that it had solved the "most frequent" data centre IT request with the general availability of its *Virtual Replication v4.5* software.

The latest version includes the new *Journal File Level Recovery* feature. Zerto says this enables the restoration of any file from a point in time just seconds before a deletion, virus or data corruption occurred. As a result, the firm reckons its software significantly reduces the impact of data loss on common daily requests for data restoration.

Utilising compressed journalling of the changed blocks from the protected VMs, Zerto adds that *Virtual Replication* maintains a granularity of the data in increments of seconds up to the past two weeks. This is said to enable point in time recovery with the ability to rewind data back to recover from corruptions, deletions or even system-wide data disruptions due to ransomware or system upgrade errors.

"The ability to help IT and business leaders confidently recover and restore within minutes any aspect of their IT infrastructure up to the last seconds



"Business continuity/ disaster recovery is no longer about recovery but availability."

Daren Howell,
Senior manager of solutions marketing,
Sungard Availability Services

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of an outage is one that truly gives our customers a competitive advantage,” says Zerto CTO and co-founder Oded Kedem. “For highly regulated industries such as healthcare and financial services, this level of business continuity and disaster recovery granularity helps them easily exceed compliance requirements, while providing better customer experiences.”

Quorum has unveiled its first software-only solution for DR in the shape of the *onQ vApp* virtual appliance. Gambill says: “*onQ* delivers high availability and robust disaster recovery, and with a software-only solution we are able to work closely with our customers and partners to provide a solution which can quickly and seamlessly integrate into their current environments.”

Utilising Quorum’s DRaaS platform, the virtual appliance has been developed to deliver instant unified protection for both physical and virtual VMware environments, allowing businesses to maintain continuity. The company says it can be immediately leveraged to work on existing infrastructure, enabling businesses to re-purpose old servers and storage as DR equipment.

Quorum adds that the *onQ* platform was originally developed for US navy warships to ensure that on-board computers never ‘go down’ during combat. It says the “highly robust” technology is designed for businesses to rapidly recover their most critical applications and data in the cloud after any storage, systems or site failure.

Fog ahead

Cloud services and solutions are certainly instrumental as organisations continue to adopt a more flexible approach to work with remote employees, mobility, geographically distributed teams, etc. So is the future of BC & DR all in the cloud?

Despite the increasing digitalisation of businesses and the trend towards virtualised and cloud offerings, Sungard AS says traditional third-party workplace recovery centres are still an important part of many businesses’ DR strategy. Howell believes that with business availability needing to embrace people as well as processes and technology as part of the overall resilience and recovery mix, this stands to reason. “In addition, the increase in business rental prices, decrease in viable space and the rising complexity of today’s businesses means that expertise in delivering an all-encompassing approach to workforce, as well as IT, availability is needed. This means that shared, dedicated and remote solutions all come into play as part of keeping office-based and mobile workers productive and available when disruption occurs.”

Sungard AS has recently developed Recovery as a Service (RaaS) to help harmonise what it says is both the ‘run’ and ‘recovery’ aspects of any organisation from the perspective of their people and systems availability. Howell says RaaS covers primary production environments and traditional DR infrastructure.

“While there are many ‘point’ solutions on the market today we believe ours is the only one in which a provider takes responsibility for recovering not only a customer’s IT systems but its business – people, processes and technology – backing this commitment with RTO-based SLAs and reducing restore times by up to 70 per cent.”

The respondents in Macrium’s study mentioned above also had positive and negative comments about using cloud-based services for BC & DR. On the plus side,

resellers said that as cloud usage goes up, the costs per GB are going down. Cloud platforms can also be used alongside a local copy for increased protection.

But on the downside, as well as the predictable issues of security and trust, respondents said customers didn’t understand the limitations of using cloud-based services and wrongly believed the technology was infallible.

Other negative points expressed by Macrium’s resellers included comments that the cloud is not a solution for disaster recovery as it takes too long to download a backup; concerns about cloud backup solutions which don’t work well with image backup/restoration (“too time consuming due to internet bandwidth limitations”); and customers not wanting to be part of the trend as “cloud equals a loss of control”.

“Whatever the outcome will be in June, businesses need to use this opportunity to opt for solutions that store data within the country it resides in.”

*Gabriel Gambill,
Senior director of product and technical operations,
Quorum*

The latter could prove key here: on the one hand we have the cloud industry telling us that ‘XaaS’ solutions for disaster recovery, backup, etc., are the way to go. And on the other hand, new



legislation demands that organisations get a tighter grip on their data. The future for data in the context of BC & DR looks murky if not cloudy. ■

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Data centres

From flash to solid state, enterprises are now spoilt for choice when it comes to storage solutions.

Avere Systems has added the *FXT 5200 Edge* filer to its range of enterprise storage platforms for the hybrid cloud. It says the new, entry-level solution cost-effectively delivers the same software functionality support as its existing *5000* series product line but is aimed at customers running lower performance workloads.

With the *FXT Series*, Avere says enterprises can integrate the public cloud, private object storage solutions, and existing NAS systems into a single, easy-to-manage infrastructure. The firm claims it has developed the only technology that scales performance and capacity at the edge of the network and hides latency to remote NAS or object-based storage, creating a seamless experience.

The new *5200* is a 1U rack-mount model that creates a cloud storage gateway, providing scale-out NAS functionality in

front of object storage and allowing users to access data using standard protocols including NFS and SMB.

It includes 7.2TB SAS HDD per node, delivering 50 per cent more capacity than the existing *3200* model, occupying half the space at only one rack unit per node.

Avere reckons the *5200* makes it possible for more businesses to make the move to the cloud with ease. The device is also said to enable improved remote office collaboration by offering WAN caching to create centralised data access to users in satellite offices.



DataDirect Networks (DDN) claims to have introduced the industry's fastest and most flexible scale-out NAS.

Part of the company's *GRIDScaler* range, the new *GS14K* is available as an all flash array or hybrid storage platform. DDN says it uses the latest data storage technological innovations – such as the fastest SSDs, interconnects and embedded PCI-e low latency fabric – to deliver “breakthrough” performance and capacity.

The *GS14K* features open source software integration and delivers what's said to be the reliability, performance and ease of support of an enterprise-grade NAS with seamless integration to OpenStack and Hadoop environments.



DDN says the device decouples performance and capacity for complete cost control, better support and lower TCO through its ability to scale up or out. The firm adds that the NAS ingests data at scale, reliably, with room to grow data inputs to the workflow.

The *GS14K* is also designed to eliminate data centre sprawl with what's claimed to be the industry's highest capacity per rack. By consolidating multiple data types for ease of access, DDN says the NAS does away with storage and data silos while reducing management cost, complexity and data risk.

With support for traditional NAS protocols plus high-performance NAS Client and optional Burst Buffer, the *GS14K* makes large data sets simultaneously available to multiple systems and users.

According to **IBM**, sub-second response times are critical when data is retrieved from the cloud. It has therefore launched new all-flash array products with a minimum latency of what's claimed to be 250 microseconds.

The *FlashSystem A9000* and *A9000R* use IBM's *MicroLatency* technology which is designed to transfer data within the flash array via hardware instead of the added layer of software.

Both incorporate data reduction features, including pattern removal, deduplication and real-time compression, as well as highly parallel architecture and IBM's *FlashCore* technology to deliver consistent low latency performance.

The *A9000* comes fully configured which is said to help drive down the cost of implementing an all-flash environment. It is available with effective capacities of 60TB, 150TB and 300TB. It has three-way active grid controllers, each containing two *Intel Xeon E5 v3* 8-core 2.4GHz processors, 192GB DDR4 memory, and

redundant battery backup and power supply units. The *A9000* is available with effective capacities of 60TB, 150TB and 300TB.

With its grid architecture, the *A9000R* aims to deliver scalable storage up to the petabyte range for cloud service providers. It has up to 12 active grid controllers each containing the same Intel processors and power supply units as the *A9000*, as well as 384GB DDR4 memory.

IBM says each platform has built-in features designed to solve cloud requirements such as QoS to prevent the impact ‘noisy neighbour’ problems have on application performance, secure multi-tenancy and thresholding.



LaCie has enhanced its *5big Thunderbolt 2* professional five-disk storage solution. Capacity has been increased 33 per cent thanks to the use of 8TB enterprise class hard disks from Seagate. It's claimed this makes *Thunderbolt 2* the “most compact” 40TB storage device on the market.

Designed to operate 24x7 (compared to 8x5 operations for traditional hard drives), LaCie says the new drives can support 8,760 hours of operation per year for demanding workloads. They feature a 256MB cache, 7200RPM, as well as rack environment optimisation.

Using *Thunderbolt 2* technology, the company says *5big* delivers sustained speeds of up to 1050MBps which is enough bandwidth to edit several video streams in native 4K resolution. The *5big* has two *Thunderbolt 2* ports for daisy chaining up to six *Thunderbolt* devices via the single, supplied cable.

A range of RAID modes are offered allowing users to tailor the device to their needs. LaCie says RAID modes 5 and 6 provide



“complete data protection” against disk failure, and hot-swappable disks mean zero data loss or downtime.

Another notable feature is said to be a cooling system that ensures long-term reliability by preventing overheating. The system consists of three key components: heat-dissipating aluminium casing that acts as armour to protect internal components; jumbo heat exhausts; and an “ultra-quiet” cooling fan.

Vipul's latest scale-out storage platform includes nine new *VMstore T5000* all flash models.

Built on a VM-aware storage (VAS) foundation, the platform features a federated node design that treats multiple *VMstores* (either all-flash or hybrid) as a pool of storage. Tintri says this “greatly” simplifies management, planning and resource allocation.

The system is designed to scale to more than one million VMs. It's claimed the separation of control and data flows ensures low latency and scalability to a very large number of storage nodes.

All the new models are based on software intelligence that aims to deliver consistent performance for virtualised and cloud applications. According to Tintri, this works across any standard high-

performance Ethernet network, eliminating the need for proprietary interconnects.

The latest models in the *T5000* line-up have been enhanced with new capacity options ranging from 17TB to 308TB. The company reckons its systems leverage the latest in 3D NAND technology and high-density drives to offer organisations both higher capacity and lower cost per GB.

Combined with VAS VM-level capabilities and *VM Scale-out* software, Tintri adds that customers can scale with complete flexibility, growing from one *T5040* all flash system to 32 fully populated *T5080s*.

The software also provides predictive analytics to optimise operations and costs, enables the retention of policy settings and stats when a VM is moved, supports all major hypervisors, and more.



The *HK4* from **Toshiba Electronics Europe (TEE)** is a new series of enterprise 6.0Gbps SATA solid state drives designed for read-intensive and value-endurance workloads. It is the company's first SSD for enterprise and data centre applications to embed 15nm MLC NAND flash memory, and is said to offer low latency tuned for high QoS.

The read-intensive *HK4R* series combines capacities up to 1.92TB with low operating power. TEE says the drives are suitable for enterprise applications such as web servers, files servers, media streaming, video-on-demand, search engines and warm data storage.

According to the company, each disk offers an endurance level of three DWPD (drive write per day) and a capacity of up to 1600GB. (TEE points out that one full DWPD means the drive can be written and re-written to full capacity once a day every day for five years, the stated product warranty period. Actual results may vary due to system configuration, usage and other factors).

The *HK4* is also equipped with Toshiba's *Quadruple Swing-By Code* technology. According to the company, this is a “highly

efficient” error correction code that helps protect customer data from corruption caused by NAND flash memory media wear. TEE says this improves reliability and extends the life of its SSDs.

The *HK4* also represents another first for Toshiba as it is the firm's first SATA SSD with optional Trusted Computing Group (TCG) enterprise encryption support.



IT teams “not fit for purpose”

IT leaders believe more than a quarter of their existing teams need replacing to drive digital transformation and boost productivity, according to research by Experis.

The IT resourcing specialist surveyed 1,000 IT workers and 200 senior IT managers to explore whether the make-up of today's IT department is creating the right environment for businesses to thrive and transform. It revealed that IT leaders think their departments are four years behind their most innovative competitors.

According to the study, more than half of the organisations surveyed want their teams to deliver more cloud services and mobile apps, and turn data into actionable insight. However, 67 per cent of IT leaders said their teams currently lack the balance of expertise required to provide these services. They also believe they could increase overall productivity by 31 per cent if their team had the right mix of IT skills, knowledge and experience.

However, IT workers hit back with claims that their potential isn't being realised. Seventy one per cent feel that their skills and knowledge are not being fully utilised by their organisations because of a lack of investment (46 per cent) and up-to-date training (34 per cent). In addition, just over a third of IT workers said day-to-day problem solving is prioritised over innovation projects.

Experis reckons its study shows a disconnect emerging between IT leaders and IT workers, adding that the findings are a wake-up call for UK businesses.

“Organisations must review and restructure their IT teams to enable innovation,” says Experis Europe MD Geoff Smith. “This starts with greater investment in the right training that is tailored to employees and business requirements, while creating a culture that supports personal development.”

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Cyber security training is not just about IT

The Open University (OU) has warned businesses that they need to understand the importance of building cyber security skills as well as IT infrastructures.

Citing a report prepared by the Centre for Economics and Business Research for Veracode last year, the OU said UK firms increased their annual IT spending as a result of cyber crime by almost £16bn. But it added that simply increasing spending on IT infrastructure is not a sustainable way to boost defences and protect against a breach.

The OU said new government research shows nearly two-thirds of large UK businesses have suffered a cyber attack, yet only 17 per cent of have trained staff in this area over the past year.

The university said enterprises must invest in knowledge, ensuring that all employees are aware of best practice in cyber security, and that IT practitioners have the most up-to-date skills to maintain defences.

Steve Hill, the OU's director of external engagement, said businesses need to

understand that investing in IT infrastructure and retraining staff go hand-in-hand. He added: “It is important to recognise that a firm's cyber security measures cannot simply rely on the expertise of a skilled IT team. Knowledge about best practice must be widespread across an organisation.”

Since it began in 1969, the OU is now said to be the UK's largest academic institution. According to Hill, the university's *Introduction to Cyber Security* course was the first of its kind anywhere in the world to gain government support, indicating that the UK is starting to acknowledge the importance of making such skills widely available.

NEW COURSES

IT4IT certification – Open Group

Vendor-neutral IT consortium the Open Group has launched its IT4IT certification

programme for all IT professionals who demonstrate knowledge and understanding of the *IT4IT Reference Architecture*, v2.0 standard. This comprises a reference architecture and a value chain-based operating model for managing the business of IT.

The first level of certification being launched, *IT4IT Foundation*, provides validation that the candidate has gained knowledge of the terminology, structure, basic concepts, and understands the core principles of the reference architecture. It can be achieved by passing the *IT4IT* part one examination, following a course of self-study or attendance at an accredited training course.

The launch of the certification programme comes after the release of the *IT4IT Management Guide* earlier this year, which is available to buy through the Open Group website and Van Haren Publishing. www.opengroup.org

Advanced Linux System Administration & Networking – Linux Foundation

This new course (*LFS211*) comes bundled with the *Linux Foundation Certified Engineer (LFCE)* exam, and provides the knowledge and skills necessary to pass the test and succeed as a senior Linux system administrator.

Students will have access to 40-50 hours of coursework, and more than 50 hours practical experience in labs that translates to real-world situations.

The Linux Foundation says sysadmins who pass its *Certified SysAdmin* exam have a wider range and greater depth of skill than Linux Foundation Certified Engineers. It says LFCE certified staff are responsible for the design and implementation of system architecture and serve as subject matter experts and mentors for the next generation of sysadmin professionals. <http://training.linuxfoundation.org>



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