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JULY/AUGUST 2019

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# Goonhilly Earth Station opens new data centre to back AI hub

Cornish satellite communications innovator and space gateway Goonhilly Earth Station has opened a new green data centre designed to become a high-performance computing hub for artificial intelligence (AI) and machine learning (ML).

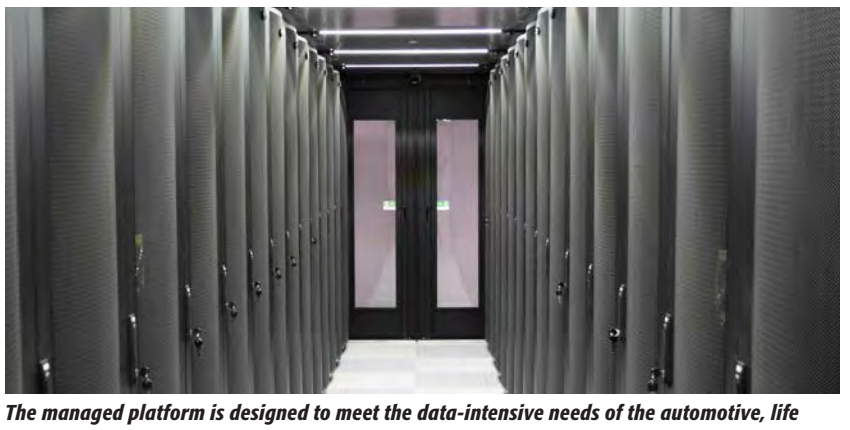
Its managed platform is designed to meet the data-intensive needs of the automotive, life sciences and space/aerospace marketplaces. Goonhilly, located on the Lizard Peninsula is also one of the first organisations in the UK to deploy a liquid immersion cooling system from Barcelona-based Submer Technologies.

"The biggest data centre challenges are energy consumption, carbon footprint, compute density, and space costs," Diarmuid Daltún, chief commercial officer of Submer Technologies told *Networking+*. "Submer's advanced immersion cooling systems address all four using a dielectric fluid that has 1000-times the cooling capacity of air – delivering higher performance in less space at less than half the power consumption of a traditional, air-cooled data centre. It's the perfect complement to Goonhilly's green-energy platform."

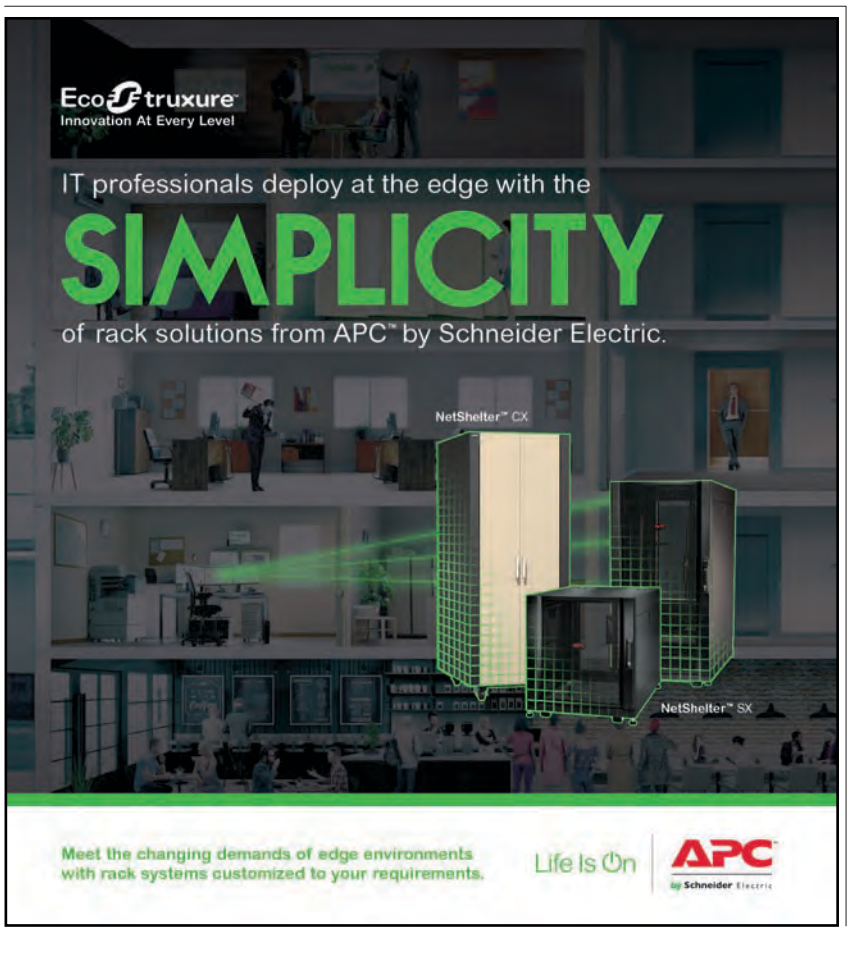
Goonhilly's raft of solar panels can also support the data centre's full power requirements of 500KW and local wind power will be added in the near future. Its goal is to create a UK hub for AI and ML services that allows academia and enterprise to collaborate and share ideas.

Chris Roberts, head of data centre and cloud at Goonhilly Earth Station told Networking+ that the new commercial data centre is linked to the largest international fibre connections and its major satellite receiving station. "We also have a solar array sufficient to power the entire facility on site, with more renewable capacity in the works," he added. "Our customers can drive innovation in AI, machine learning, and research while remaining completely carbon neutral – boosting their green-energy credentials at the same time."

*continued on page 2*



***The managed platform is designed to meet the data-intensive needs of the automotive, life sciences and space/aerospace marketplaces*** PHOTO: ©GES LTD




# NHS cyber security needs 'urgent' investment – report

The National Health Service is in need of "urgent" investment into cyber security, with protective measures built into new technologies from the start.

That is according to Imperial College London researchers who said the NHS was still vulnerable to cyber-threats such as WannaCry and – as a result – needed to take "urgent steps" to improve security.

The global WannaCry ransomware attack in May 2017 caused major disruptions to operations at around 34 NHS trusts, preventing staff from accessing patient data and carrying out critical services.

Furthermore, it is estimated to have cost the NHS around £92m in total and in response the Department of Health and Social Care, said it would spend £150m over the next three years to improve security.

The recently announced NHSX unit, which is overseeing digital transformation, is also tasked with clarifying security operations.

However, researchers from Imperial College London's Institute of Global Health Innovation said in a white paper that while these measures were important, they did not go far enough. Furthermore, it found the NHS' out-dated computer systems, a continued lack of investment and a deficit of skills and awareness in cyber-security left it exposed.

They said more investment was needed and recommended key measures including employing cyber security professionals in IT teams, building "fire-breaks" into systems to allow for the isolation of certain segments of the structure in the event of an attack or virus infection and instituting clear communications systems so that staff know where to get help and advice on cyber security.

"For the safety of patients, it is critical to ensure that the data, devices and systems that uphold our NHS and therefore our nation's health are secure," said professor the Lord Ara Darzi, co-director of the IGHI and lead author of the study. "This report highlights weaknesses that compromise patient safety and the integrity of health systems, so we are calling for greater investment in research to learn how we can better mitigate against the looming threats of cyber-attacks." ■

# Goonhilly's AI support project

*Continued from page 1*

Goonhilly has also extended its AI capabilities by signing up to the NVIDIA Inception programme for businesses that are transforming industries through advancements in AI and data sciences. Goonhilly will use the NVIDIA DGX-1, the world's first supercomputer purpose-built for enterprise AI and deep learning.

The tier 3/4 data centre sits at the junction of global subsea cables, satellite feeds and fibre, customers can analyse data at the edge. This eliminates the cost of a leased line to send huge data volumes back to London, or even farther afield, for processing.

Existing satellite customers are also expected to use the data centre. Previously, the data transmitted was solely small packets of communications signals, but today's satellites are used for applications including 8K real-time imaging, which use petabytes of data. By analysing the data at the edge, a much smaller packet can then be cost-effectively distributed.

One of the first data centre customers is Milton Keynes based cloud-based analytics service providers Zizo, which has chosen to host its big data analytics as a service at Goonhilly.

"When looking at data centres to host our cloud-based service, only Goonhilly could address our critical issues such as availability, resilience and affordability but also offer the value-add of green energy and immersive cooling," said Zizo's chairman Peter Ruffley. "Customers are increasingly asking questions about the carbon footprint of compute power, which makes Goonhilly a great choice." ■

# US business buys into UK data centre arena via HPF Group

US firm HDR has expanded its data centre building engineering services by acquiring London-headquartered Hurley Palmer Flatt Group (HPF Group)

HPF Group provides mechanical, electrical and plumbing services, civil and structural engineering and commissioning management. It has a particular focus on "smart" buildings, energy and sustainable "green" building design and mission critical facilities and data centres, including digital management for buildings.

The company has more than 500 active clients, many of which are Fortune 500 firms in the technology and financial sectors. It has over 500 staff spread across 10 offices. "This acquisition brings together HDR's global practice with HPF Group's strategic locations in EMEA and the Asia-Pacific region," said HDR.

Going forward, the UK firm will operate as HDR | Hurley Palmer Flatt Group.

"HPF brings strong client relationships and specialised skill sets to HDR that, when combined with our capabilities, offer tremendous possibilities," said HDR chairman and chief executive officer (CEO) Eric Keen. By combining our teams of professionals we will develop a stronger building engineering practice globally."

HFP Group chairman and CEPO Paul Flatt, who will join HDR as managing director, described the acquisition as "the perfect strategic fit" for his company. "The desire to have a meaningful impact on the organisation and to achieve strategic growth moving forward makes HDR the ideal partner," he added.

The value of the acquisition remains undisclosed. HDR employs 10,000 employees across 200 locations worldwide. ■

***HPF Group employs more than 500 members of staff spread across 10 offices worldwide, including their central London HQ (pictured)***

# Next-gen tech integrator targets enterprises with new managed Silver Peak SD-WAN Services

Teneo, the specialist integrator of next-generation technology, has launched a dedicated co-managed and managed service offerings to support Silver Peak Unity EdgeConnect SD-WAN edge platform deployments.

The new services extend Teneo's well-established consulting, professional services, and 'as a service' offerings for SD-WAN.

Teneo's co-managed service supports enterprises that want to retain ownership of key infrastructure assets for their Silver Peak SD-WAN deployments. Furthermore, its managed service offering supports companies that require less management control or want to avoid making additional networking team hires.

"Thanks to our co-managed and managed services offerings, users of the Silver Peak Unity EdgeConnect SD-WAN edge platform can put certain 24x7 monitoring and management responsibilities in the hands of experts at Teneo," Nigel Townsend, vice president of services at Teneo told *Networking+*. "As UK organisations use and add to different WANs as they grow, from MPLS and broadband to 4G and public Wi-Fi, many face challenges such as poor branch application performance, connectivity issues and rising network maintenance costs. SD-WAN products use existing network investments and cloud applications to improve local application performance visibility and make local branches more agile."

The new SD-WAN service models assist enterprises in planning or managing EdgeConnect SD-WAN edge platform deployments to mitigate risk and successfully deliver agility benefits such as adaptive internet breakout, QoS over bonded links, router replacement and unified WAN optimisation. ■

***Silver Peak's EdgeConnect device was the first SD-WAN to include WAN optimisation as a built-in feature***

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KADIUM

# Lloyds hires cyber security specialist

Cyber security specialist Callsign has partnered with Lloyds Banking Group to provide digital identification and authentication solutions for its customers.

This latest partnership will see the bank rolling out Callsign's platform across its core brands. The utilisation of the platform not only supports Lloyds' ongoing commitment to protecting against fraud but also provides a "seamless" customer experience.

Callsign's technology works by using multiple real-time data points to help ensure someone really is who they say they are, combining multi-factor authentication and transaction approvals.

"We have already built a brilliant foundation with Lloyds Banking Group and I am thrilled at the prospect of continuing our working relationship," said Zia Hayat, chief executive officer and founder of London-based Callsign. "Our solution will enable the bank to go even further in maintaining a premium customer experience when it comes to identification, traditionally a challenging thing to achieve."

Hayat is a former Lloyds' employee who also designed encrypted information technology for BAE Systems. ■

# BA planes grounded by major IT issue

British Airways (BA) was forced to cancel 91 flights on 7th August while another 300 were delayed following a major IT glitch.

At least 81 flights were cancelled at Heathrow Airport and 10 grounded at Gatwick. Some flights were more than five hours behind schedule.

The airline said it reverted to back-up and manual systems for check-in at airports. It also said that the issue was not a global outage, but a problem with two separate systems - one which deals with online check in, the other that deals with flight departures. However, the problems did not affect every airport.

Irate passengers took to social media and told broadcasters about their frustrations.

BA apologised for the disruption and said customers on short-haul services from Heathrow, Gatwick and London City could re-book another day. However, a surge of people trying to do so also jammed the online booking system.

BA confirmed it had experienced a "systems issue" that was affecting check-in and flight departures with Heathrow, Gatwick and London City affected.

"We are working as quickly as possible to resolve a systems issue which has resulted in some short-haul cancellations and delays from London airports," a BA spokesman said. "A number of flights continue to operate but we are advising customers to check ba.com for the latest flight information before coming to the airport.

BA has in the past suffered severe computer system failures that have left passengers stranded around the world. In 2017 during the May bank holiday weekend, 75,000 passengers were stuck at Heathrow and Gatwick. ■

# Crossword Cybersecurity secures Rizikon deal with local councils

Crossword Cybersecurity said three local UK councils will use its Rizikon Assurance product to secure their compliance with the General Data Protection Regulation (GDPR).

Stevenage Borough Council, Peterborough City Council and East Hertfordshire District Council will use the solution to improve the process and accuracy of securing third party assurance.

This will support the councils' compliance with GDPR and allow for managing on-going assurance checks when necessary. The trio will also be able to identify GDPR risk exposure across its portfolio of suppliers, so that remedial action can be taken to improve the protection of citizen data.

GDPR makes many requirements of organisations, including taking adequate steps to ensure data is both encrypted and anonymised, so that in the event of a breach, the data cannot be exploited. Infringements under GDPR can lead to fines of €20m or 4% of annual global turnover for an organisation.

"The role of every public service organisation is to serve its citizens, often holding personal information about them on many sensitive topics such as health, benefits and education," said Jake Holloway, director at Crossword Cybersecurity. "With that comes the responsibility of ensuring that information is protected, especially when it needs to be shared with partner organisations. "Rizikon Assurance will help any organisation dramatically improve the speed and reliability of its third-party assurance processes."

He added that this would cover areas such as GDPR, health & safety, the Modern Slavery Act "and any other requirements that they may have". ■

# Government to launch phase two of cyber security survey

The UK government has commissioned a second survey to find out how companies spanning different sectors tackle employing and training cyber security professionals.

Market research company Ipsos Mori is charged with carrying out the surveys as part of the government's National Cyber Security Strategy 2016 to 2021, in which it will focus on enterprises, public sector organisations and charities.

The second survey, which will run from August – October 2019, will highlight all the key issues organisations face in finding the cyber security skills they need and will be used to inform government policy.

Published in December last year, the first survey estimated that 710,000 UK companies faced a basic technical cyber security skills gap, while 407,000 were confronted with a high-level technical cyber security skills gap.

The survey also found that organisations outside London had suffered the most – and that overall, incident response was an area that many organisations either underestimated or did not consider to be important. Furthermore, around 47% of organisations that took part in the research said they were not confident in dealing with a cyber security breach or attack.

Elsewhere, the most notable skills gaps were in fields such as forensic analysis, penetration testing, security architecture, using threat intelligence, carrying out a cyber risk assessment, preparing cyber security training and developing cyber security policies.

The second survey will require the participation of senior representatives from businesses, public sector organisations and charities selected at random from public databases. ■

*The first survey, carried out by, Ipsos Mori estimated that 710,000 UK companies faced a basic technical cyber security skills gap*

# 'UK organisations believe they cannot stop cyber attacks' - report

More than 40% of UK organisations have claimed that cyber-attackers can infiltrate their networks at every attempt, new research from CyberArk has revealed.

A survey of 1,000 global organisations for the CyberArk Global Advanced Threat Landscape Report 2019 found that while UK enterprises viewed privileged access security as a core component of an effective cybersecurity programme, understanding had not yet translated to action.

It found that just 45% of respondents had a privileged access security strategy in place for protecting business critical applications and cloud infrastructure respectively, while even fewer had a strategy for DevOps (28%) or IoT (20%).

In addition, a mere 17% of respondents understood that privileged accounts, credentials and secrets exist in containers.

UK firms ranked hackers (74%), organised crime (57%), hacktivists (46%) and privileged insiders (42%) among the greatest threats to critical assets.

"These findings are sober reading for businesses and cybersecurity practitioners. Despite the vast sums being spent on cybersecurity, it's clear that businesses have very little confidence in their ability to defend themselves from cyber-attacks,

*A survey of 1,000 global organisations found that while UK enterprises viewed privileged access security as a core component of an effective cybersecurity programme, understanding had not yet translated to action*

protect their most critical assets, or their value creation activities," said Rich Turner, senior vice president EMEA at CyberArk. "UK businesses need to be on the front foot with security, know what is most valuable to them, how it may be attacked and how to protect it while ensuring their cyber-strategy supports collaboration and innovation."

Turner added that proactive cybersecurity strategies must be implemented wherever critical data and assets live, specifically to manage and secure the privileged credentials that are fundamental to their operation. "This is the most valuable step security teams can take to support wider business initiatives in today's digital economy," he said. ■

# Cloud not as good as claimed, say UK enterprises

The benefits of the cloud are still not living up to the hype, according to a survey of UK businesses by a London research house.

Less than half (44%) of UK enterprises surveyed said the flexibility of the cloud has matched their expectations, followed by improved security (43%) and efficiencies (31%), Research Without Barriers found.

Meanwhile, a mere 19% of businesses said cloud mobility is delivering on expectations, while an additional 19% said the cloud has given them a greater user experience. An alarmingly-low 13% also said it supports business innovation.

"The cloud is fast becoming the preferred choice for positive digital disruption, but it seems it's not giving businesses what they want on a number of levels," said Jon Wrennall, chief technology officer at digital software and services provider Advanced, which commissioned the research. "This is a concern simply because the cloud can – and should – deliver these benefits and more."

Advanced ordered the study as part of its 2019 Digital Business Report, which surveyed more than 500 senior decision makers spanning small, medium and large businesses throughout the UK.

"It begs the questions: are organisations being distracted by hyped-up cloud tools over prioritising software that is relevant to their own unique needs? And are they not being given the right third-party support to realise the cloud's value?" Wrennall added. "The right strategy and guidance will help organisations get the maximum benefits from the cloud as well as dictate what business functions they should migrate to the cloud because, in certain cases, some functions are actually best kept on-premise."

Large businesses said they were also utilising a range of tools to improve efficiencies spanning CRM and ERP.

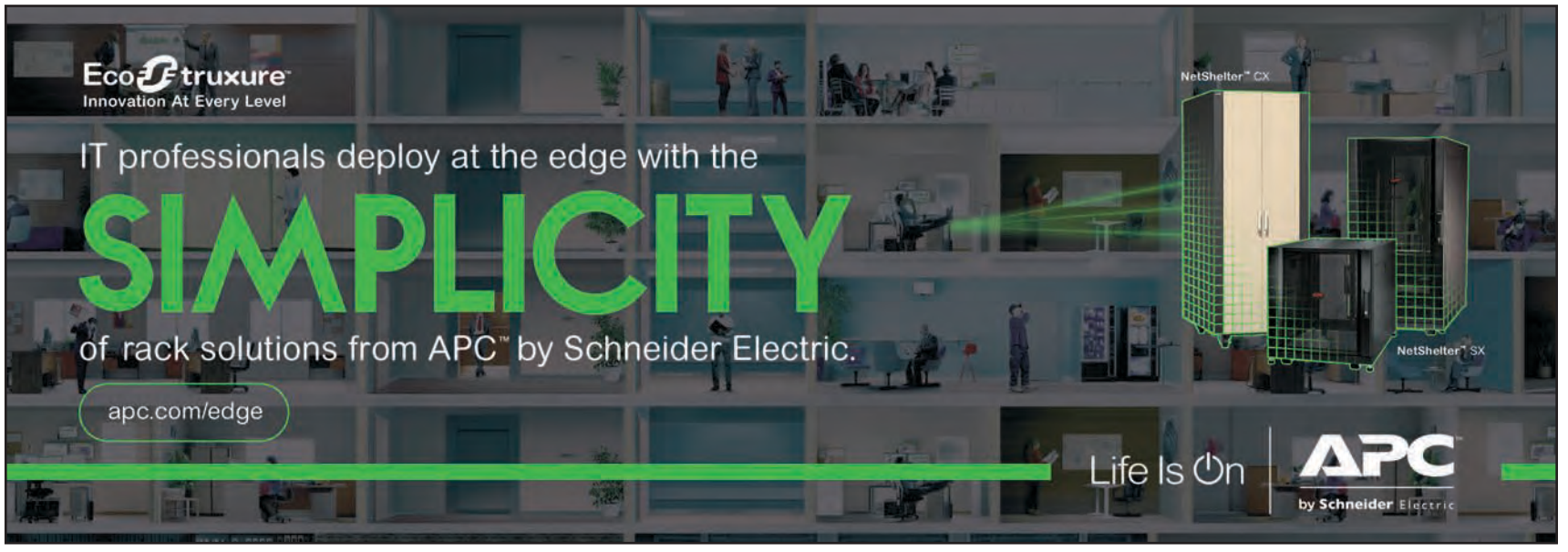
Some 63% said their organisation should be using multiple software solutions to run operations and not a single, unified platform. The firms cited the unique requirements of different departments (63%), increased flexibility this offers (53%) and the lower risk of failure (38%).

Elsewhere, 47% of smaller businesses said various department needs can be met by a single solution.

However, Wrennell added that multiple software solutions – whether cloud-based or on-premise – must be integrated to "truly improve business performance and productivity".

Survey respondents agree with the sentiment, too, with 70% reporting that a lack of integration between business software is holding them back from achieving successful digital transformation.

In addition, the survey found that just 50% of respondents believe the cloud should be "inherent in all business software their organisation uses". This comes at a time when cloud spending is said to be on the rise. ■



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# For cooling, 'just add wasser'

A data centre cooling system that swaps expensive, environment-damaging refrigerants in favour of tap water is now available in the UK, courtesy of Blackpool-based Green Thermal Energy.

Instead of fluorinated gases like R-134a – which have a high global warming potential (GWP) and are being phased out in the EU – the eChiller circulates water in a closed-loop system driven by a compressor. Developed, manufactured and distributed by Efficient Energy GmbH, based in Feldkirchen, near Munich, the company has claimed it does the job as well as traditional refrigeration agents.

The eChiller was previously only available in the DACH area, which includes Germany, Austria, and Switzerland. However, earlier this year it started to make its way toward other territories and now it's available in the UK.

Following eight years of development, the eChiller received its public debut at the Chillventa exhibition in 2014. Currently there are close to 100 units operating in mainland Europe and the eChiller is being readily accepted by the market.

"This was one of the main reasons why we believe that the eChiller is now more than ready to be introduced into the UK market," Garry Broadbent, director of Green Thermal Energy told *Networking+*. "We understand that the UK market requires reliable and proven systems and the eChillers credentials certainly validate this."

Available in one and two-stage versions with two refrigeration capacities, it can be used for outdoor installation when being integrated in a unit. The eChiller is already used in cascade applications and for the production of cold air in AHUs.

Broadbent added that the chiller can provide 15C outlet temperatures even when operating in ambient temperatures of 40C. It has been claimed that the hybrid mechanical plus indirect free cooling system delivers extremely high levels of operational efficiency with a SEER of 11 (seasonal energy efficiency ratio).

"Targeted towards higher flow temperature cooling applications, the eChiller can be considered for many uses from IT/data centres though to process/production/space cooling, and basically any 15C+ chilled water system design," said Broadbent. "This means that it is ideally suited to data centre, MER and IT applications where lower operating temperatures are no longer necessary."

Efficient Energy's international expansion comes at a time when European manufacturers are phasing out dangerous refrigerants, in line with the requirements of the EU Regulation No 517/2014 (better-known as the F-Gas Regulation).

New rules came into force in January 2015, designed to limit the production and stockpiling of hydrofluorocarbons (HFCs) - something that resulted in refrigerant shortages and pushed cooling specialists to look for alternatives.

However, with the UK expected to leave the EU as soon as October 31st, the offending gases might not stay away for too long. ■

# Google and Microsoft back new initiative

The UK government has launched a new initiative to improve the cyber security of future technology products, with the backing of big names Google and Microsoft.

Business secretary Greg Clark said the scheme would help the UK become a world leader in tackling cyber threats and ensure the country remains one of the safest places in the world in which to conduct business.

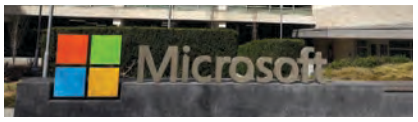
Around £70m public funding will be ringfenced for the project, along with an additional £117m of private investment to ensure new technology is secure by design.

This will range from new and secure hardware prototypes that can cope with cyber-attacks to software that is better protected from new vulnerabilities appearing online.

Clark said nearly all UK organisations are now reliant on digital services as the UK shifts to become a data-driven economy, while consumers use such services for everything from online shopping to booking doctor's appointments.

"The threat of cyber-attacks is ever-present, with more than 30 per cent of businesses having experienced a cyber-security breach or attack in the last 12 months," he said. "We will ensure that the UK is well placed to capitalise on our status as one of the world leaders in cyber security by 'designing in' innovative measures into our technology that protect us from cyber threats."

Details on the upcoming rounds of funding for this Digital Security by Design challenge – likely to bring together academics, research institutions, start-ups, SMEs and large businesses – will be announced later this year. ■




# Scottish government launches £30m cloud services

A new Scottish government framework for cloud services is now live, with 14 suppliers able to bid for contracts worth an estimated £30m.

The multi-supplier agreement, open to over 300 public and third sector organisations in Scotland, replaces the old hosting services framework, which expired in May this year.

Of the 14 providers that have secured a spot on the two-year Cloud Services Framework, 50% are SMEs, the majority host their data within Scotland and operate data centres with a power usage effectiveness (PUE) rating of below 1.6, the government said.

The 'in-scope' services are public cloud (including access to hyper-scale public cloud), private cloud, co-location, hybrid cloud, community cloud and cloud transition services.

Scottish colocation and cloud solutions company Brightsolid will offer enterprise, private, public and hybrid cloud solutions and associated services, "working collaboratively with organisations to meet their IT needs".

"We are pleased to offer our continued support to the Scottish Government following three years of successfully working with Scottish public sector organisations under the hosting services framework," said the company's chief executive officer, Elaine Maddison. "The strong portfolio of cloud services we offer customers provides them with future-proof infrastructures to support digital transformation whilst considering the long-term financial implications – a testament to the feedback we have since received."

Fellow Scottish business DataVita, the data centre and multi-cloud services provider, was also included on the two-year framework, which can extend to four years. The company will offer public sector organisations – including local authorities, education providers, the NHS and emergency services, and the third sector – access to a range of cloud services delivered via its purpose-built, Uptime Institute Tier III certified data centre, which is powered by 100% green energy.

"Given the sensitive nature of some of the data held in the public sector, as well as the regulatory requirements around its control, we have decided to introduce a dedicated data hall, which will allow public sector organisations to benefit from a number of unique, advanced controls," said Danny Quinn, managing director of DataVita. "We hope this will support secure and seamless collaboration between departments, while achieving maximum efficiencies for our customers."

Farnborough-based cloud specialist UKCloud will also be on the framework, which supports and enables a number of digital initiatives, such as Scotland's Digital Strategy– Realising Scotland's full potential in a digital world and Data Hosting and Data Centre Strategy for the Scottish Public Sector.

Other suppliers include critical production and recovery services specialist SunGard AS, digital transformation specialist Storm ID and computing consultancy Proact IT UK. ■

# West Sussex and Surrey Fire and Rescue move on to Infographics' FireWatch Cloud

Software solutions provider Infographics has secured joint collaboration between West Sussex and Surrey Fire and Rescue as part of a move to a fully managed Cloud delivery and maintenance model, with FireWatch on the Microsoft Azure platform.

The new FireWatch Cloud solution will provide flexible and remote access to the FireWatch fire service management system, including full management and upgrades.

It will also deliver a live integration with Surrey and West Sussex Fire and Rescue's Capita Vision mobilisation solution and control platform.

"The opportunity to work in collaboration with Infographics and Surrey Fire and Rescue Service will transform the way we mobilise our assets to emergency incidents and provide improved support to our teams across our service," said Jon Lacey, acting deputy chief fire officer West Sussex Fire & Rescue Service. "Working in collaboration enables us to become more effective and efficient as a service and provides exciting future opportunities to develop our service together."

The FireWatch Cloud solution will provide a range of benefits to both Fire and Rescue Services, including a connected application for real-time integrated HR, payments, training and development, fleet and availability, as well as employee self-service from a single platform. Other key benefits include vehicle-level availability status based on resource needs and priority – calculated to-the-minute, graphical county-wide Availability Map status and change notifications of the same data, mobile-optimised client, with booking on/off duty facility and real-time status views and SMS-based workflows and booking on/off duty processes with crewing exception notifications for managers.

Alongside their migration to the FireWatch Cloud, both West Sussex and Surrey Fire and Rescue will move to a joint control operation. Infographics will implement the standard FireWatch and Capita Vision mobilisation interface as part of this project.

The first phase will extend their connected 'complete picture' of operations provided by FireWatch to the Mob system, by pushing out live resource, skills and asset data as changes occur.

Phase two will see Infographics existing extended Mob interface option deliver the bi-directional interface, with FireWatch processing live incident data from Capita Vision in addition to providing a "closed loop'. This will also enable further streamlining of processes around time and attendance and pay and maintenance of competency – with event-related processes initiated automatically in the FireWatch system.

Russell Wood, commercial manager at Infographics, said similar deals will hopefully be announced in the coming months. ■

# VIEW FROM THE TOP...

**Why UC is an essential part of the digital toolkit for network managers,** *by Christophe Reyes, UCaaS managing director at Arkadin*

Workplace culture continues to evolve as technology continues to establish itself within modern enterprises; revolutionising both processes and company-wide values. If we compare today's workplace with that from just a decade ago, we would have two very different images.

Gone are the days of bulky computers and outdated telephone systems. Instead, modern companies are utilising slim-line laptops or tablets and cloud technologies to communicate and collaborate. Even the more traditional data centres have undergone drastic changes in recent years with modern, cloud-based data centres being the gateway to digital transformation.

The world of data centres has seen a number of revolutions in previous years, but none has had a greater impact than the evolution of cloud technology. Not only are more organisations adopting more cloud data centres in a bid to move towards greater virtualisation, but the technology is also changing the way that those within the sector work.

Yet, this is only the beginning of the network of the future as 92% of business IT leaders now deem digital workspaces as either critical or important for the future success of their organisations. In addition, CDW released its 'The Modern IT Infrastructure Report' to gain a better understanding of what is shaping the landscape and determined that whilst senior IT leaders are under pressure to reduce infrastructure costs, they also want enhanced data security in addition to increased productivity and greater business agility. Inevitably, the toolkit needed to meet the demands for smarter communication and enhanced connectivity has become increasingly more sophisticated as a result.

## Collaboration remains a challenge for the network

The IT industry has seen an influx of transformations and with this comes a new set of challenges when it comes to network management. As networks continue to grow and new technologies are introduced, they become even more complex; leading to IT workers struggling to keep up with these changes.

Tech firm, NetBrain Technologies, previously released a report that asked over 200 network engineers, architects and IT managers to define the challenges facing today's network teams. Amongst its findings, it found that many organisations rely on 'tribal knowledge' to manage networks; whereby expertise is restricted to one or a handful of members of a team. As well, an additional 45% of network engineers said a lack of effective collaboration was a major challenge when tasks required multiple engineers or teams to be involved.

## Better communications leading to enhanced workspaces?

Nowadays, running a network is no longer just about delivering a product or service. Instead, there is an increased emphasis on efficiency and agility. Essentially, this is leading more organisations to adopt tools that enable them to respond faster and collaborate more effectively no matter their locations.

Modern IT departments rely on constant communication and the need to remain connected. Whether this be communication with customers, employees or line managers, the workspace of the future means that all staff need to be armed with an array of tools that can allow rapid communications across multiple devices and channels.

Moving beyond simple communication, people now also work more collaboratively than ever. With more IT leaders recognising the need for greater productivity and agility across their workforces, they need to equip teams with the tools to accommodate this and usher in the workspace of the future. These smarter ways of working enable employees to utilise a full network of solutions in order to be more productive and offer enhanced flexibility with how they approach their work and communicate with colleagues and customers.

Previously, teams would rely on a handful of communication tools that would allow them to host conference calls and video chats. However, the development of cloud technology and faster internet speeds has meant that organisations are able to create one frictionless communication network.

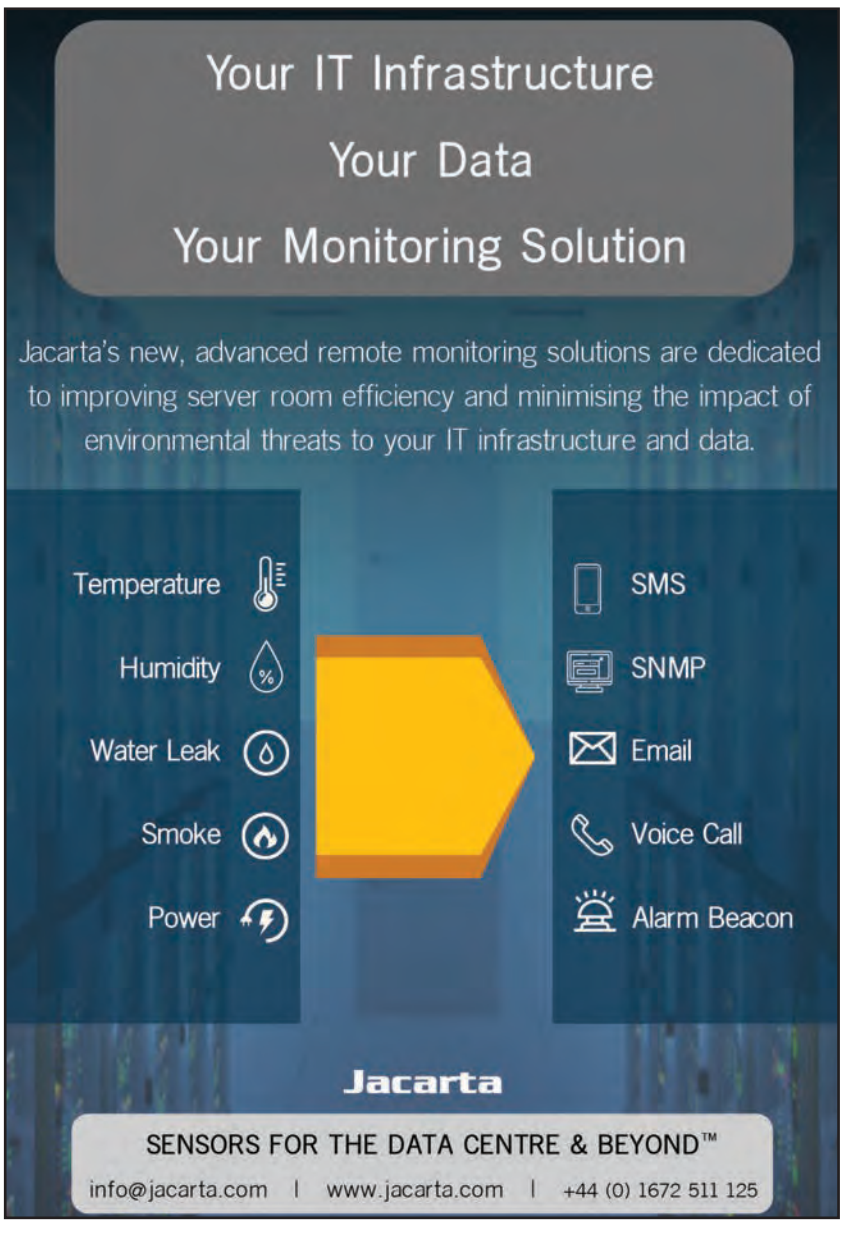
Effective digital communication channels which enable productive working are now a fundamental asset for almost every business and we've seen an uptake in cloud-based Unified Communication (UC) systems by companies in efforts to achieve this. Through the use of UC technologies, organisations can encourage smarter communications which in turn will enable network managers and engineers to work more collaboratively, resulting in greater agility and productivity.

## An evolving landscape needs an evolving toolkit

As networks continue to become more complex, the tools used to manage them will inevitably change and develop over time. However, as the landscape itself diversifies, there is no one size fits all solution when it comes to equipping staff with the tools needed to navigate the digital workspace.

Transforming your communications strategy to enable smarter workspaces can be both complex and time-consuming. Yet, as these technologies continue to evolve, they become more intuitive to a company's specific needs and therefore an essential part of the digital toolkit that can enable companies to welcome in the new era of business.

Data centres are constantly evolving and with this fresh challenges are presented with network managers still finding their feet when it comes to effective collaboration and communication across multiple teams. However, through advancing technology the industry will continue to have access to a wider range of new solutions aimed at empowering teams to adopt newer practices and drive agile and collaborative working practices.



# ON THE NETWORK...

**Reimagining the network: delivering on the end-user digital experience expectation,** *by Subbu Iyer, CMO at Riverbed Technology*

In the digital age, end-user experience is everything. Technology has created a new breed of business that can challenge established brands at lightning pace, and if you aren't able to offer a premium digital experience — someone else will. Contrary to popular belief, the key to achieving this isn't front-end investments.

It's a natural compulsion for growing organisations to look towards the "next big thing" in technology, rather than investing in their existing IT estate. As a result, areas such as cloud computing and mobile have enjoyed a spike in innovation over the past 20 years. However, most organisations need a more agile network to support digital growth.

Software-driven models are dramatically transforming the way a modern network is managed. Legacy networking infrastructure is often device-centric and brittle, and therefore incapable of supporting a business transformation that unlocks a premium user experience. These rigid and archaic frameworks are now being replaced by modern, agile equivalents — that are easy to monitor and deploy, revolutionising the jobs of IT teams worldwide. In fact, IDC has characterised the emergence of software-defined wide area networking (SD-WAN) technology as "one of the fastest industry transformations" in years.

By reimagining the network, businesses will be able to create things that weren't possible before. Only when this happens can we unlock new opportunities for digital disruption.

## New levels of agility

For CIO's, the deployment of high-investment, next-generation software can be challenging. With reputation, money and business continuity on the line, they need every assurance the technology will be delivered in a timely manner and meet their KPIs. This is where investing in the network pays dividends.

Take Indonesian social insurance company's, Jasa Raharja, recent deployment as an example. They manage a highly dispersed network of hundreds of branch offices, and nearly 1,300 Department of Motor Vehicles locations, across the archipelagic country. Many of these sites are in remote, underserved areas. When Jasa Raharja embarked on a major digital initiative to improve their user experience with its services and facilitate online e-payments, the organisation found it required a more flexible business model and greater agility to manage change at scale. Ultimately, they couldn't achieve this with their existing legacy infrastructure.

Enter: SD-WAN. Jasa Raharja is using SD-WAN technology to make the most of its existing IT resources, as well as centralising and simplifying the management of the network. This also reduced costs by moving more traffic from MPLS to the Internet. The technology has provided them with the business agility needed to introduce new digital services in cooperation with other state-owned offices. Today, they can deploy new apps and services to users with a few simple clicks, monitor the network and manage policy from a single pane of glass.

## Digital experiences deliver a more competetive edge

As companies grow at unprecedented rates, they often find themselves outgrowing their current infrastructure. Moreover, these organisations often have limited IT teams that are more focussed on day-to-day activities than inspiring digital change.

This was the case for Attune Hearing, Australia's largest independent audiology service provider. The company manages a network of 44 clinics, with an IT staff team of three people. In the face of increased competition – several large retailers have entered the market – the audiology industry is undergoing a major disruption.

Attune Hearing rose to the challenge with new, dynamic digital experiences for its customers and staff, but it quickly outgrew the capacity of its legacy networks. Bringing new services, apps and sites online required a significant amount of time, travel and cost, and getting a single service online could take up to four months.

To combat this, Attune Hearing used a combination of SD-WAN, visibility and application acceleration technologies to drastically simplify their network. The team can now make application policy changes centrally and simply, enabling increased agility in the face of constantly shifting business and consumer needs. The visibility they have into app performance has been revolutionary for their IT team. They're able to understand performance, diagnose and resolve issues and improve service levels for their staff and customers, all from their head office in Brisbane. This new level of business agility, combined with the ability to do more with less, has enabled Attune Hearing to provide a superior digital experience increasing their competitiveness.

## Next-generation technologies create new opportunities

Innovations in software-defined networking have unlocked new possibilities for businesses across multiple sectors and geographies. Leading a digital transformation process with flashy front-end applications can only get businesses so far. Time and again organisations are finding that without sufficient investment in their network they're wasting time and money. These examples are just the tip of the iceberg when it comes to how next-generation networking is transforming digital experience. Most companies are just beginning to rethink what's possible for their businesses. We can't wait to explore what's coming next as they unlock advances in end-user experience.

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# CLOUD-BASED NETWORKING GIVES COMPANIES AN EDGE

*The business opportunities for retail, restaurant, and healthcare chains have created new demands at the network edge, now best served by SD-WAN combined with cloud-based security services.*

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As business leaders increasingly recognize the value of digital transformation, they've made remarkable changes to their organizations—primarily at the headquarters level. However, highly distributed enterprises still face unique challenges as they attempt to roll out IT strategies to support large numbers of historically underserved remote sites.

These challenges impact virtually every industry—from global fuel retail brands to specialty retail chains, restaurants, grocery stores, and hospitals with localized health clinics. While sophisticated technology at the corporate level is managed by highly experienced IT professionals, remote sites with little to no IT staff are often left to cope with a patchwork of single-point applications and security devices.

### Redefining SD-WAN for the Network Edge

Most SD-WAN (software-defined wide area network) solutions today are designed for large- to medium-size "carpeted" branch offices with local IT staff. Although Gartner estimates that, by 2021, more than 65% of enterprises will choose SD-WAN for their WAN edge infrastructure refreshes, these SD-WAN solutions don't necessarily address the needs of highly distributed enterprises.

These enterprises require a different approach to securely deploy the growing number of applications, back-office systems, and IoT devices at remote locations (which can range from dozens to tens of thousands of sites). These diverse types of deployments might include a national retailer that wants to adopt SD-WAN to improve visibility, security, and compliance across its entire network of corporate and franchise stores. Another use case might include "click-and-collect" kiosk-style lockers that support multiple brands located at "store-in-store" sites.

***"Cybera's approach to SD-WAN deepens the revenue potential we offer retailers and accelerates the deployment time for our cloud-enabled retail ecosystem."***

– Gary O'Connor, CTO, Doddle

Fortunately, many organizations are using Cybera to increase the pace of innovation at the WAN edge. "New applications, services, and IoT offerings create competitive differentiation," says Andrew Lev, CEO of Cybera. "Our secure, cloud-based SD-WAN edge platform enables our customers to reduce costs, increase security, and quickly deploy new applications and services."

The company's deep experience in SD-WAN technology helps it deliver transformative solutions tailored for the network edge. "We're an extension of our customers," adds Lev. "That's so important at the edge—you have to be both the eyes and ears on a 24/7 basis."

**To learn more, visit cybera.com.**

# Crowd surfing

## Sports teams undergo network upgrades to enhance experience

### A winning solution

The Crescent Motorcycle Company has 65 years' experience of supplying motorcycles, parts and accessories, as well as racing competitively for more than 25 years in BSB, WSBK, MotoGP, Enduro and MotoX and most recently as the Pata Yamaha Official WorldSBK Team.

In an industry where a split second can be the difference between being victorious and not placing at all, the company knew it needed access to fast and reliable internet access to support its vital race operations. What's more, Crescent Racing's Pata Yamaha Official WorldSBK Team was in serious need of a connectivity solution that could be utilised no matter where in the world the team was located.

However, each venue is very different to the next and with no way of implementing a permanent connection, Crescent turned to its tried and trusted technology partner GCI to offer a solution that could be utilised no matter where in the world the team was located.

GCI provided one of its rapid network deployment kits; a fully-managed internet and MPLS WAN service that offers enterprise-grade connectivity on a global scale.

Portable and supplied fully configured, the solution works by bonding 4G bandwidth from multiple carriers using global roaming SIMs, fixed-line connections or even a combination of both, creating a single virtual IP connection. The bonded connection maximises throughput to reach speeds of up to 300Mbps. As well as providing internet access for the Pit Crew, the device is also used in the team's hospitality area - which hosts sponsors and special guests – ensuring that all attendees can connect and have an enhanced experience without the team having to worry about how to enable guest Wi-Fi.

GCI's rapid network deployment solution can be up and running in under 10 minutes. Additionally, if the team reached a venue where it was assumed that the connectivity would be strong but transpired that it wasn't sufficient, GCI could despatch the device to reach the team within 24 hours anywhere within Great Britain. The solution is also managed and maintained by GCI meaning that the kit is regularly serviced to make sure that the team can continue to receive the same fast and robust connectivity time after time.

"This solution was exactly what we needed," says Paul Denning, team principal at Crescent Racing, Pata Yamaha Official WorldSBK Team. " We already use Microsoft Skype for Business from GCI to allow our team to keep in touch when they are on the move or at one of the tracks, and reliable, fast internet access is therefore vital for us. However, there can be issues trying to connect at a venue where there are potentially hundreds of other devices – both from the teams and spectators – trying to utilise the same internet connection, and so being able to take this kit from place to place is hugely beneficial. It's easy to use and fully maintained by GCI so we don't have to worry about our connectivity – we can be sure that it's taken care of."

Today Crescent has an easy-to-use solution that offers enterprise-grade connectivity, no matter where in the world the team is racing or testing. Rapid network deployment overcomes the potential issue of mobile devices having intermittent or no network coverage by using multiple SIMs from different carriers, allowing the trackside and office teams to always keep in touch with each other. Crescent also utilises its fast internet access to update its social media channels for fans across the globe, enabling them to get minute-by-minute updates.

### Audere est Facere

Even the most ardent Arsenal fan would begrudgingly admit that the new 62,062 capacity Tottenham Hotspur Stadium is a fine specimen. Still, the Lilywhites needed an IT infrastructure befitting of that status, so in came Real Wireless to make it happen.

The stadium design included provision for all wireless technologies (including 5G when it arrives) as well as PMR for support services, TETRA for emergency services and Wi-Fi – technically architected, supplied and deployed by the club's official enterprise networking partner, Hewlett Packard Enterprise (HPE). It also needed support for satellite.

Mobile services to the bowl are provided by antenna located in discreet positions within the roof structure. Similarly, the stadium hosts a range of non-sporting events where pitch coverage is required.

A high data rate service is available for the bowl, concourse, podiums, media areas, hospitality areas, conferencing suites and offices, as well as key operational areas such as event control. The basement and parking areas as well stairwells and rooms are covered by medium and low data rate services, respectively.

The system comprises a hybrid active/passive distributed antenna system (DAS), joint operator specifications (JOTS)-compliant 2G, 3G and 4G, allowing connections for all mobile network operators and MIMO on frequencies 800/1800/2100/2600MHz.

There are 164 internal antennas including 48 pitch and bowl stadium antennas, six macro antenna locations providing external coverage and 19 low level external antennas providing podium coverage. The list goes on: over 45,000m coaxial cable, over 25,000m of individual fibres, 2348 passive components, nine master unit racks (POI), 172 Low power remote radio units, 18 High power remote radio units (macro) and a dedicated equipment room, 100 sqm, with 80 operator racks and nine POI racks.

Industry engagement was critical, including the need to encourage all UK operators to participate. Nevertheless, the complexity of the design and build of the mobile system in a stadium under construction required the services of a neutral host, so in came Shared Access. The firm had to design and build the system, creating a platform conducive to all mobile operators deploying their current technologies.

"Our brief was to design and build the system to enable mobile voice and data capabilities across the new stadium and, as a neutral host company, to carry out the detailed design and system integration," says Chris Jackman, CEO at Shared Access.

Today, the infrastructure is an operational asset that allows the club to optimise its business operation.

"We were delighted to be asked to apply our skills as the world's leading independent wireless advisory firm to making this ground-breaking new system a reality," adds Mark Keenan, CEO at Real Wireless.

While Spurs continues to under achieve on the pitch, its new stadium is leagues ahead of the rest.

### Bristol stadium gets much needed Wi-Fi boost

The home of Bristol City FC and Bristol Rugby Club, Ashton Gate Stadium is the paragon of successful inter-sport ground-sharing.

So, it was decided that every person who enjoys the game, whether they be in the stadium itself, restaurant, bar, or concourse, should have access to unlimited and free Wi-Fi, enhancing the match day experience.

Ashton Gate Stadium worked with a group of partners led by Bristol's own Zeetta Networks courtesy of a UK Government grant via Innovate UK. Zeetta's consortium includes Ruckus Wireless for Wi-Fi equipment, provided and installed by another local company, IP-Performance.

"We like to offer Ashton Gate as a live test lab for new technology and after £45 million in investment and three years of hard work, this is an impressive venue with lots of technology under the hood," says Paul Lipscombe, head of technology at Ashton Gate Stadium.

He said that during the project, technology that has been delivered includes 250 digital signage screens and an IPTV system, LED perimeter boards, the UK's largest indoor video wall in a bar, access control turnstiles, 4k touchscreens in the changing rooms and one large external screen. The network now boasts 2,500 data ports.

"On a match day we have anywhere up to 20 vendors we work with and being a premium hospitality experience we have three hours to get it right," Lipscombe added. "We need to be able to fix any technological issues as soon as possible. We are very fortunate to be based in Bristol and be close to companies like Zeetta Networks."

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# Preparing for a disaster

## Should businesses leave disaster recovery and business continuity to their IT departments, or is it better to bring in a specialist? ROBERT SHEPHERD investigates

In case you were overseas or just hadn't seen the news, a failure across large sections of National Grid's network blacked out large swathes of the country in early August. Winds of 60mph left businesses, homes and train lines with no power. Can you imagine the impact if it was a serious natural disaster?

A timely reminder then that it doesn't matter what line of business you work in or where it is based, if disaster strikes and you lose valuable data as a result of lack of preparedness, the chances are you'll be in serious trouble.

Granted, some sectors face harsher consequences than others should data escape or be completely erased from existence, but no business with any designs on success and longevity – no matter how large or small – can risk losing the very thing that keeps it going

Of course, most enterprises don't need to be told the obvious or even be patronised, but one thing they do need to know is whether they should take care of data recovery themselves or farming it out to a specialist. In other words, we're talking about data recovery as a service (DRaaS).

**"Fundamentally, it means shrinking business resources are focused exclusively on ongoing and core operations rather than using previous in-house bandwidth for the worst-case scenario."**

*Sascha Giese, head geek, SolarWinds*

It will come as no surprise that there are a number of specialists out there whose job, quite understandably, is to extol the virtues of outsourcing. That said, does that mean enterprises generally lack the requisite nous to get themselves up and running again should the worse happen, or is it just scare tactics?

"If disaster recovery is driven and pushed by the IT department, organisations can fall into the common mistake of assuming they're 'good to go' when disaster hits," says Sascha Giese, head geek at IT monitoring and management company SolarWinds. "While IT departments can certainly handle the technical side of things, ensuring services are up and running if production goes down, they're not necessarily the key stakeholder in ensuring business processes and services can also be maintained. These business processes and activities can really be summed up in one key term that goes hand-in-hand with disaster recovery: business continuity."

So, is outsourcing really a good idea and – if so – why?

In Giese's opinion, the primary benefit of outsourcing a DRaaS solution, particularly one that's hybrid-cloud-based, is that companies needn't build their own infrastructure to support the disaster recovery process.

"Instead, they can rely on a remote cloud infrastructure that may include multiple sites of its own," he adds. "Fundamentally, it means shrinking business resources are focused exclusively on ongoing and core operations rather than using previous in-house bandwidth for the worst-case scenario—which can happen but is the exception rather than the rule. By handling DRaaS in-house, an organisation must have the time and capital to invest in and maintain its own DR environment. That's why outsourcing DRaaS can be especially useful for small- and medium-sized businesses without the necessary expertise to provision, configure, and test an effective disaster recovery plan."

For others, the primary benefit is more

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black and white. "The number one reason to outsource disaster recovery (DR) cost," says George Crump founder and president at Storage Switzerland, an IT analyst firm focused on the storage and virtualisation segments. "(Otherwise) you're paying for a second location that in most cases sits idle and isn't used at all. As a result of that there's a whole set of different things that could go wrong."

He also offers up numerous analogies as to how enterprises can burn money by preparing for a disaster in the wrong way. "Let's say I buy a second car in case I need it one day," Crump says. "It sits in the garage for years and then when I finally need to use it, the engine doesn't even turn on."

Crump adds that there are alternatives to outsourcing, but again they are not necessarily economically viable.

"In theory you could rent a space like a managed service provider (MSP) but again you're paying rent for something you're not going to use," he continues. "So, the value of the cloud is you're going to get data protection anyway and now you're going to store it in the cloud. And then when you need to you can push a button and start your disaster recovery process. It's a significant cost saving and it really encourages more frequent testing. As a disaster recovery planner, I can tell you that the number one thing that breaks a disaster recovery plan is nobody has actually ever executed the plan. This way you could start a test every month if you want to with no issues."

**"It's very much a 'it won't happen to me' condition going on."**

*George Crump, founder and president, Storage Switzerland*

Steve Blow, tech evangelist at IT resilience, disaster recovery and backup provider Zerto agrees and says outsourcing can enable scalability without driving costs way up. "With DRaaS, you pay for what you need, when you need it." he adds. "Any DRaaS provider will offer enterprise class infrastructure from storage, compute and network, as well as being able to offer additional services around security etc." Blow adds that "having all of these capabilities" in house can get very pricey as a sole tenant, which is why many businesses look to DRaaS providers to utilise OpEx based cloud billing. "Paying on usage or reservations, rather than having the costs of keeping your DR environment's lights on at all times, just in case, ensures optimum cost-effectiveness and flexibility. This also frees up IT teams to work on innovations that can have an impact on the business," he says.

Chris Huggett, senior vice president, sales, EMEA & India at critical production and recovery services specialist SunGard AS says although economics is "quite rightly" an important factor, enterprises need to ask themselves why they would prefer to do it in house when there are specialists around who can also do the job with greater reliability. "So, for many businesses it's the classic core versus context discussion," he says. "Is recovering your applications core to your business or even your IT activity? For a lot of people, it's not, but we certainly believe it's one of those areas where you're better off in terms of reliability and economics going to a specialist."

If DRaaS is all it's cracked up to be, just how close is it to overtaking traditional means of recovery?

"That shift has already happened," says Huggett. "Because if you look at traditional recovery, that meant standing up dedicated infrastructure, networking, storage and compute resources dedicated to a client, which therefore are not available for anyone else, which makes it more expensive. Everything else in terms of the way people produce their production IT architectures, involved them going out and buying platforms and running their applications on them so they focus therefore on the application. After all that's what CIOs lie awake worrying about – applications and workloads.

"People are perfectly satisfied that providing recovery capabilities on top of a cloud platform is as reliable than having a dedicated infrastructure built for them, if not more so."

Blow agrees. "DR has traditionally been very complex and, even when outsourced, the infrastructure remains the same," he says. "With advancements in the market and the ability to use a software only approach to DR, providers gain more flexibility as to how they are able to deliver this capability, without having to give up traditional DR requirements and actually enhancing them. In my view, DRaaS has already started overtaking traditional recovery services, particularly as it has lowered the entry cost. This has increased the scope to include less critical applications that otherwise wouldn't have been included in DR, as well as reaching out to the SME market that may have been previously priced-out."

However, Crump is more cautious and says, "it's not as close as the headlines would lead you to believe", because most small to medium sized organisations don't take disaster recovery seriously enough. "It's very much a 'it won't happen to me' condition going on," he adds. "That's not any fault of DRaaS, it's just humans. I would say that most organisations are still in investigative mode. The technology is established but it's still early days in terms of adoption."

Of course, DRaaS does not mitigate all the work involved in DR, especially upfront planning. So how does a vendor taking the lead, address the environment and select what is a priority?

Ron Blair, senior director analyst at Gartner says it's an important point and highlights the cost benefit. "DRaaS prices are 50%+ less than just a few years ago," he says. "As DRaaS providers try to avoid a 'race to the bottom', top providers have baked in onboarding service elements that

**"With DRaaS, you pay for what you need, when you need it."**

*Steve Blow, tech evangelist, Zerto*

***Some sectors face harsher consequences than others should data escape or be completely erased from existence, but no business with any designs on success and longevity – no matter how large or small – can risk losing the very thing that keeps it going***

**"There's a reputational impact and the human beings involved in recovering from disasters end up being offered crisis coaching and counselling."**

*Chris Huggett, senior vice president, sales, EMEA & India, SunGard AS*

were once considered "white glove". Some examples include assessments to right-size environment needs, application dependency mapping, and runbook creation. But when it comes to gaining interlock with business units and creating a business impact analysis (BIA), these would typically require professional services."

What about the location of the DRaaS vendor's data? After all, if it is situated perilously close to the client's and both are taken out by the same "disaster", does that mean there are unexpected costs and incompatibilities? Or worse?

"If they were both taken out at the same time then that would be an example of bad planning," warns Huggett. "If it's the same disaster taking out both instances then the risk profiling would have gone awry there. We take the view that for example your pushing data into a public cloud instance, that public cloud should be in an entirely different domain – quite likely a different country to where the originating target servers are actually located."

David Davies, business and IT service continuity consultant at Daisy Corporate Services, concurs.

"DRaaS is a 'cloud' service and as with any other cloud service it's important for a client to understand the physical aspects of the service when selecting a provider," he says. "This includes the location and security of the backups and the recovery data centre (and if there are multiple backup locations and recovery data centres or only one), and where the IT support people are based who will manage the recovery."

Crump says that regardless of sovereignty laws, the European market has strict regulations regarding where data can sit. "Europeans are sensitive about data sitting in the Americas and with good reason," he adds. "What I would suggest is that if there is a limit on where you can store data, just have it as far away as you can. If you're in Germany but the data can't leave the country, just make sure it's at the opposite end of the nation."

It would appear the evidence for outsourcing is overwhelming. However, are there any particular user groups that need it more than others and does it suit

every company?

Giese says while it can work for every company, it might not be the best scenario for all of them, if only due to their size and scale. "Smaller IT infrastructures will do just fine with traditional DR methods," he adds. "But the larger and more distributed the organisation, the more complex it is to adjust traditional DR to fit in and tick the boxes."

Davies is in agreement and says there might be a serious rationale for a company not only wanting to keep it in-house, but having to. "There may be regulatory or security reasons for the organisation to want to keep its ITDR in-house," he says. "There may also be technology or skill set limitations of the DRaaS provider (particularly if legacy systems are involved) which mean they can't take on all of the DRaaS requirement. It also depends on the client's culture – the extent to which an organisation embraces and feels comfortable with outsourcing and cloud services. A good DRaaS provider should ensure multiple tiers of service and cost level are available, to be able to meet everything from small business to enterprise requirements."

Huggett says that "most obviously" there are certain regulated markets, financial services being the most obvious example, where loss of data can lead to legal issues "and ditto" in the public sector." In the healthcare space and in central and local government, there are very severe implications if data has been compromised, lost or even stolen. Disasters have different effects in different sectors, but we certainly see based on our customer make up financial services and healthcare very much to the fore. But that doesn't mean others aren't equally affected – possibly just a bit less public."

Reading this, enterprises not already outsourcing disaster recovery might be tempted to explore it further. Yet, what if their old-fashioned in-house set up is not easily compatible with what the vendor is offering – will they face complications moving from one to the other?

"It's important for teams to focus on the fact the overall objective isn't to merely restore data or an application," adds Blair. "It is to restore business processes. Business-oriented intimacy is important toward ensuring key items are not neglected - from recovery of virtual desktops to call centres."

Blow says no solution works exactly the same as the next, just like in the same way no provider has the same engagement.

**"DRaaS prices are 50%+ less than just a few years ago."**

*Ron Blair, senior director analyst, Gartner*

"There are always challenges when moving," he adds. "Processes will change, some flexibility may be lost, plus there's always the requirement to ensure the business is protected during the move process. The key to staying on top of these complications is to ensure the chosen solution is as simple as possible, enabling the provider you've chosen to be able to guide you through the move with minimal fuss and mitigated risk."

Huggett says "it shouldn't be a complex issue", because enterprises don't have to turn off their production environment to move their disaster architecture to a cloud environment.

"You might parallel run for a while with your cloud recovery architecture proving itself before you switch off your legacy DR environment," he adds. "If you were unfortunate enough to have to suffer a disaster during that period, then actually you've got two rather than one possibilities of recovery. Usually when you migrate IT systems it is the moment of change that causes the greatest difficulties."

However, one would be forgiven for thinking DRaaS is an IT issue, but Huggett warns that it goes much deeper than that. He says it is now a topic of conversation in boardrooms because of the psychological impact it can have on staff. What's more, this is only compounded by the advances of another form of technology.

"Let's face it, the 'as a service element' is just a new way of delivering disaster recovery, as the need for an interest in disaster recovery has never really gone away," he adds. "What has changed is because of the rather public nature of some of the disasters that have befallen some, people are very conscious that if there is a disaster then social media will see to it that people will get to hear about your disaster perhaps in a way that a few years ago you might have been less exposed. There's a reputational impact and the human beings involved in recovering from disasters end up being offered crisis coaching and counselling."

And on that cheery note, it's important to remember whether or not you decide to outsource DR, it pays to be prepared. ■

**"There may be regulatory or security reasons for the organisation to want to keep its ITDR in-house."**

*David Davies, business and IT service continuity consultant, Daisy Corporate Services*

# Keeping your cool

## We feature some of the latest cooling products and MARK SEYMOUR has some advice on how to choose what's best for you

**Choosing and operating data centre cooling equipment is a daunting task for the non-expert. Most public conversations talk endlessly about energy efficiency and this is reflected by Power Usage Effectiveness (PUE - a measure of how much energy is required to run the data centre compared with the energy required to run the IT equipment) being the only metric in common use by operational data centres.**

You'd be forgiven then for looking for the most efficient components. This may be a good thing to do, but in many cases you'll probably be better off if you start from a different place as a good design, operated well, will almost certainly deliver an efficient solution. On the other hand, selecting efficient components is no guarantee of an effective system.

Rather than starting with equipment technical performance, you're better off asking some fundamental business questions around what is needed. Questions like "How resilient does the data centre need to be?" What is the appropriate business balance view between energy efficiency and cooling effectiveness?

Once you have these concepts thought out, you are in a position to consider cooling options. For example, in the UK, if you don't need the very highest levels of resilience whatever the cost and your power densities don't demand liquid cooling, then direct or indirect fresh air cooling are options worth considering.

Whatever you choose, while a single cooling unit should perform as the manufacturer specifies, once you place multiple systems adjacent to each other, on or around the building, their performance can degrade. As a result, the proposed configuration performance needs to be tested to avoid disappointment at some later date when you find the promised cooling is not available.

The concept of configuration is not just a design issue. How you configure the data centre is critical. For example, in an upgrade don't assume a replacement cooling unit will give better performance because its capacity is higher. It may have a different airflow/kW that isn't appropriate for how you operate your IT – this can result in an airflow shortage even though kWs cooling are available. Similarly, internal cooling performance can be affected by configuration changes. Examples include IT deployments causing bypass or recirculation and failure or maintenance operation resulting in inappropriate cooling delivery.

Overall though, there is one overriding factor to be aware of. To get the capacity and performance you invested in when building your data centre, you need to manage the performance with an ongoing capacity planning strategy that is applied throughout the life of that data centre. Only then can you be sure you have got your data centre cooling sorted. Using tools such as a digital twin can go a long way to making this process easier, quicker and clearer to manage with the ability of bringing together all the key stakeholders.

***Mark Seymour is founder and chief technology officer of Future Facilities***

Designed for data centres, Airewall is a fan wall product for low energy high density applications. **Airedale International Air Conditioning** says it removes the need for pressurised raised floors or overhead cooling and, with options of 170-400kW cooling power, offers flexibility and scalability.

It comprises a filter and fan bank, a damper section and a chilled water heat exchanger. The damper section can be installed separately to maintain a clean data hall and individual sections can be removed for maintenance. Airedale says modular construction allows for narrower corridors.

Airewall, it says, has intelligent controls which means it is self-regulating and adapts to changing loads and that maintenance costs are typically lower due to easy, direct access via the plant room. The absence of computer room air conditioning (CRAC) units also frees space.

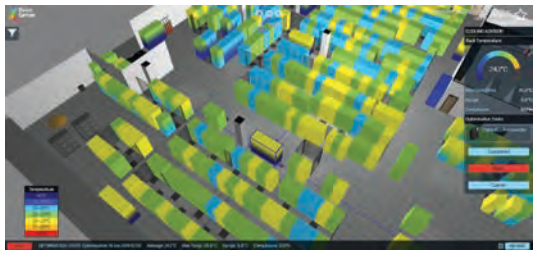
Airedale says it has developed Airewall to use new corrugated Bluefin fans from Ziehl-Abegg. Inspired by the fins of humpback whales, they are said to increase efficiency by up to 15%.

Said to be quieter than other methods, Airewall is available as four-. six- and eight-fan models with coils up to 10 rows deep.

Energy savings of up to a claimed 10% can be made by acting on the advice of Cooling Advisor, part of the latest V5 release of **Ekkosoft**'s Critical SaaS software.

Said to be the world's first software-embedded thermal expertise capability, it works by providing operators with specific cooling performance recommendations and advisory actions to help them monitor, manage and maximise their data centre's operational performance.

EkkoSense says that once Cooling Advisor mode is selected, it works to identify any data centre floor tiles or grilles that need changing. And it offers guidance on adjustments to cooling set points and can also advise on any computer room air handlers that are either not active or could be suspended or modified.



The company stated Cooling Advisor translates its proven thermal analysis into simple and easy-to-understand recommendations that can be acted upon without further specialist data centre thermal optimisation.

Introduced as its first packaged computer room air conditioning (CRAC) unit, **Mitsubishi Electric** says its s-MEXT is ideal for data centres in small and medium sized businesses.

Available in 6kW-42kW capacities, s-MEXT connects directly to the company's DX Mr Slim power inverter outdoor units to create a full inverter split system. They are also available in upflow and downflow variants.

With a three-year warranty, s-MEXT has a small footprint and with pipe runs of up to 100m. And, says the company, use of its Mr Slim unit means fast and efficient installation since many installers are already familiar with the product.

Lead times are much shorter than competitors because, says Mitsubishi, the units are available as a package.

Data centres are modernising and consolidating, leading to a demand for products which offer more cooling capacity in a smaller footprint and with the flexibility to adapt to the actual data centre load.

**Schneider Electric** cites this with the introduction of the 30kW InRow DX to its EcoStruxure Ready cooling range.

In a 300mm rack format, it is designed for small and medium data centres and is said to provide up to three times more capacity compared with previous models, meaning fewer are needed and freeing floor space.

Schneider says InRow DX uses an energy efficient compressor and fans to reduce power use; the variable speed compressor means the cooling load can adapt to thermal demand; and that performance and status is easy to see and manage, supported by a 24/7 service bureau.

Save space and power with the EC Tower cooling system, says **Stulz**. It is a split system which, it says, combines the company's air conditioning technology with the advantages of a modern inverter outdoor condensing unit.

Designed for rapid installation for heat loads of 5kW-24kW, it is said to occupy a third of the footprint of most conventional systems.

Stulz says energy is saved because the outdoor condensing unit supports dynamic capacity adjustment. And it says that while conventional units use up to 40% of their cooling capacity in dehumidification, EC Tower delivers 90-100% of sensible cooling capacity.

## THE WORLD ACCORDING TO...

**Addressing data centre inefficiencies with automation,** by *Matthew Beale, modern data centre architect, Ultima*

As we hurtle towards more complex, data intensive workloads, the value of data is set to rise exponentially, triggering a new revolution in how businesses operate. As a result, our reliance on the datacentre as the central repository of our data will only increase. Yet as we prepare for the digitalisation of business and our everyday lives, we need to look at the current inefficiencies that exist in our datacentres. They currently suffer from three critical issues:

- Lack of consistent support, for example, humans make errors when updating patches or maintaining networks leading to compliance issues.
- Lack of visibility for the business, for example, multiple IT staff look after multiple apps or different parts of the network with little coordination of what the business needs.
- Lack of speed when it comes to increasing capacity, migrating data or updating apps.

In an age when network downtime costs thousands of pounds every hour, the need to simplify and streamline the management of our datacentres has never been more apparent.

### Enter Robotic Process Automation (RPA)

Experts have been predicting for some time that the automation technologies that are applied in factories worldwide would be applied to datacentres in the future. The truth is that we're already advancing this possibility with the application of Robotic Process Automation (RPA) and machine learning in the datacentre environment, with a myriad of business benefits:

Automation provides 'cobots' to work alongside humans. Software robots can be programmed to complete tasks with consistency and accuracy. Ultima has shown that the productivity ratio of 'cobot' to human is 6:1 which frees up IT teams time, allowing them to manage via exception rather than having to be continually hands on.

Automation minimises the amount of time that human maintenance of the datacentre is required. Robotics and machine learning augments and optimises traditional processes, removing the need for humans to perform critical patches at 3 am. Instead, issues can be identified and flagged by machines before they occur, eliminating downtime and the datacentre can continually behave in a self-healing, optimum manner.

Automation can increase or decrease resources as required. During an app's lifecycle it is critical to align resources as required. Without automation, alteration is effectively a static, manual process and as a result is often not done. With automation this shifts into a dynamic platform with allocation being linked to utilisation.

We are heading towards a point where the day to day actions such as migration, maintenance, upgrades, auditing, back-up and monitoring actions are taken by the datacentre itself with no or little assistance or human intervention required. Similar to autonomous vehicles, the possibilities for automation are never-ending; it's always possible to continually improve the way work is carried out.

# Government to help workers whose jobs are made obsolete

Workers whose jobs might become obsolete because of automation will receive help in retraining from a new national government scheme.

According to analysis firm Oxford Economics, up to 20 million manufacturing jobs worldwide could be taken on by robots by 2030.

The programme will support workers by helping them find a new career or gain more skills, should their jobs change. It will be trialled initially in Liverpool.

"Technologies like AI and automation are transforming the way we live and work and bringing huge benefits to our economy," said education secretary Damian Hinds. "But it also means that jobs are evolving and some roles will soon become a thing of the past. The National Retraining Scheme will be pivotal in helping adults across the country, whose jobs are at risk of changing, to gain new skills and get on the path to a new, more rewarding career. This is a big and complex challenge, which is why we are starting small, learning as we go, and releasing each part of the scheme only when it's ready to benefit its users."

Oxford Economics found that people whose jobs become obsolete because of industrial robots and computer programs are likely to find that comparable roles in the services sector have also been impacted by automation.

On average, each additional robot installed in lower-skilled regions could lead to nearly twice as many job losses as those in higher-skilled regions of the same country. This exacerbates the already growing economic inequality and political polarisation, the company said. Another recent piece of research, conducted by AI firm Fountech.ai found that not only do 67% of adults fear AI will result in machines taking people's jobs, but some fear the technology could ultimately be responsible for the end of humankind.

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