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Mobile quartet to eradicate rural connectivity problem

Rural "not-spots" could soon be a thing of the past after the four UK mobile phone networks announced plans to join forces and boost connectivity for underserved communities.

The chief executive officers from O2, EE, Three and Vodafone met with culture secretary Jeremy Wright in late March and said they would allow each other reciprocal access to rural infrastructure to improve competition.

The new company, which would be overseen by the government and regulator Ofcom, would allocate funds for the construction of masts.

However, all four mobile bosses also said that the proposal is predicated on Ofcom removing the coverage obligations it has attached to 5G spectrum licences that it will be auctioning later this year.

O2 UK CEO Mark Evans mentioned the plan earlier this year when O2 announced its Q1 2019 financial results.

"In addition to progressing our 5G plans, we are working to establish an industry-led shared rural network for the benefit of consumers and businesses across the UK," he said. "This demonstrates our commitment to invest for the future with mobile connectivity one of the UK's most powerful opportunities to strengthen the economy and improve the lives of British people."

Funding for the company would come from a reduction in the £200 million annual licence fees paid by the industry.

"We're encouraged to see mobile companies working together on proposals to improve coverage and would consider carefully any firm plans from the industry," an Ofcom spokesperson said.

The news follows hot on the heels of a recent report published by the House of Lords Select Committee on the Rural Economy, which called on the government to develop a rural strategy in order to help affected rural economies.

In its report, *Time for a strategy on the rural economy (see page 13 for its recommendations)*, the committee laid out a number of recommendations to tackle the challenges facing the rural economy.

continued on page 2

The new company, which would be overseen by the government and regulator Ofcom, would allocate funds for the construction of masts

Virgin Media introduces new small business broadband service

Virgin Media Business has launched what it claims to be the UK's fastest, widely available business broadband, offering ultrafast services to SMEs across the country.

The company's Voom 500 service will provide download speeds of 500mbps and upload speeds of 35mbps, across the length and breadth of the nation.

Research commissioned by Virgin Media Business found that poor broadband speeds are the biggest inhibitor of progress for small and medium sized businesses in the UK and that the average employee loses 15 minutes of productivity per day due to slow internet speeds. The company put that into context and claimed that a company with eight employees could lose a full day of work each week, just waiting for their connection to catch up.

From launch, eligible broadband customers will get a free upgrade to Voom 500 if they combine their broadband with a new cloud voice package or one of the latest mobile data packages.

Cloud voice routes calls over the broadband connection to give businesses greater control over their phone traffic.

"Once again we're raising the bar for business broadband by giving our customers the ultrafast and reliable connections they need to excel in the digital age," said Rob Orr, executive director of commercial marketing at Virgin Media Business. "With a free upgrade to Voom 500 on offer for existing Voom customers when they take selected mobile or Cloud Voice services, our customers can stop worrying about their broadband and focus on using it."

Voom 500 is now available from £62 per month and customers can also add a business line with unlimited UK calls for an additional £8 per month. Furthermore, the package comes with five static IPs and a 12-hour fault fix service level agreement. ■

Firms tackling rural 'not spots'

Continued from page 1

Looking at digital connectivity in particular, it said that the government should direct Ofcom to conduct a review of the Universal Services Obligation (USO) as soon as possible, focusing on what minimum commitment would be needed to sustain and support rural businesses and communities, especially in more remote areas, and including both download and upload speeds.

The report also welcomed the proposal that Ofcom reviews the option of introducing roaming in rural areas to address partial "not-spots" and urged the watchdog to start this process as a matter of urgency. In addition, it said government and Ofcom should encourage mobile network operators to share transmission masts more often in appropriate rural locations.

"Rural communities and the economies in them have been ignored and underrated for too long," said chair of the committee, Lord Foster of Bath. "We must act now to reverse this trend, but we can no longer allow the clear inequalities between the urban and rural to continue unchecked. A rural strategy would address challenges and realise potential in struggling and under-performing areas and allow vibrant and thriving areas to develop further. Doing nothing is not an option."

Tim Breitmeyer, president of the Country Land and Business Association (CLA) said the membership organisation was "pleased that the unique circumstances of the rural economy have been recognised by the Lords" which advocates for a dedicated rural strategy. ■

GCHQ chief calls for 'national effort' to boost UK cyber security

The head of GCHQ has made the case for a "genuinely national effort" to help improve the UK's cyber security.

Director Jeremy Fleming stressed the need for continued and increasing collaboration between government, academia and industry partners in the UK and abroad when he made a keynote speech in Scotland last month.

He argued that the technological revolution brings with it "increasing complexity, uncertainty and risk", telling an audience in Glasgow it brings "new and unprecedented challenges for policymakers as we seek to protect our citizens, judicial systems, businesses – and even societal norms".

The director of the agency, often referred to as Britain's listening post, was one of the main speakers at the Cyber UK 2019 conference at the Scottish Event Campus. ■

The Government Communications Headquarters (GCHQ), Cheltenham

Half of organisations fear security breaches and regulation non-compliance due to unstructured data

UK CIOs have revealed the huge extent of dark (unused) and unstructured data lurking within and posing a threat to medium and large organisations, research has found.

A report by Crown Records Management (CRM) said that nine out of 10 respondents said that unstructured "'data oceans" – a wealth of data which is difficult to view, access and secure – are a problem and pose risks of security and non-compliance with data regulations.

As much as 59 per cent of data across UK organisations is unstructured while 40 per cent of data is "dark" or unused.

Given that IDC found that 90 per cent of unstructured data is never analysed, organisations are in unchartered waters when it comes to managing risk, fulfilling personal information requests under GDPR or gaining intelligence from their information. The report revealed that 51 per cent said unstructured data was a security risk and 49 per cent said it put them in danger of noncompliance.

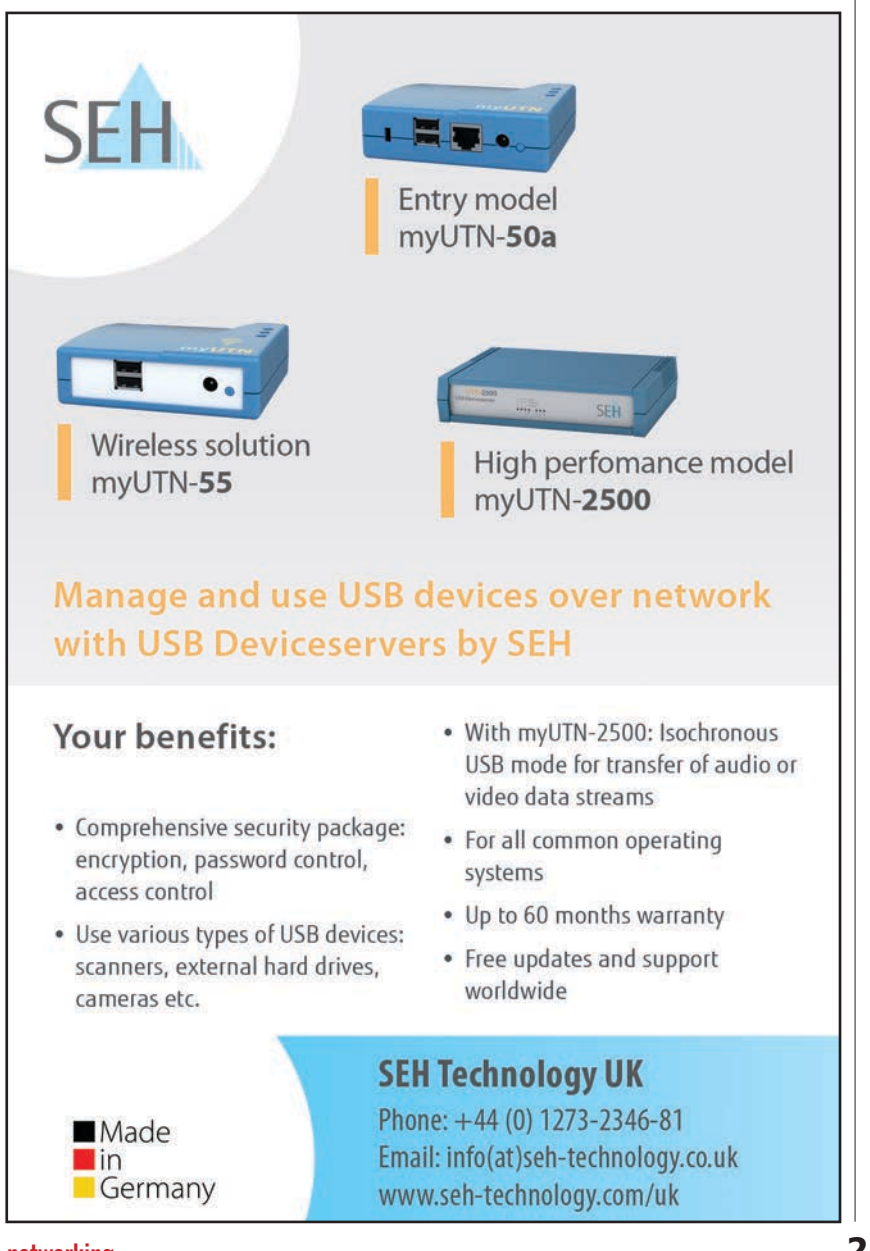
However, it is not all about data risks and if managed effectively, unstructured data appears to hold the key to further business success. In addition, 64 per cent said they could improve operational efficiency and productivity by tapping into unstructured data more. Meanwhile, 34 per cent said they could grow sales, 32 per cent believed customer loyalty could be improved and 31 per cent saw it as a source of improving employee engagement.

CRM, which helps organisations manage their data securely and effectively, found that data was commonly stored in over 20 types of locations. Although the most common were databases, the cloud and back-up systems, it was alarmingly frequent for both used and unused data to be held in hard to reach places with limited security protection. For all used data, 29 per cent said it was held on laptop hard-drives, 22 per cent said email accounts and 21 per cent said filing cabinets. For all dark data, 19 per cent said people's desks and drawers, 17 per cent said written notes and 12 per cent said employees' homes were all storage locations.

"Many organisations seem to be at risk of drowning in vast amounts of data that they are not aware of, and many are suffering from a wealth of data in which they don't know what information it contains," said Kevin Widdop, information security consultant at CRM.

Widdop pointed to the fact it is valid to hold unused data for compliance purposes such as the financial services industry keeping financial data for up to 25 years or forever in some cases, as per Financial conduct Authority regulations. However, it becomes an issue when much of this data is held in unstructured formats and when sensitive data isn't adequately protected, potentially landing the business with a fine or negative public image if the data is breached.

"In some ways it's even worse that organisations are unaware of what data lies in these unstructured sources, limiting their opportunity," he added. "As data indexing and management tools develop, organisations have increasing options to help them keep both their unstructured and dark data secure but accessible. They can then ensure that risks around security and compliance are kept at a minimum. Dark data will become visible and easily accessible." ■



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KADIUM

THE WORLD ACCORDING TO...

Martin Hodgson, head of UK and Ireland, Paessler

The future of monitoring: it's time for infrastructure to take a back seat

Today's digital world is a challenging one. In the world of IT, there is a certain expectation that a stable and seamless network monitoring experience will be provided. To do this, IT departments need to be equipped with the right tools. The industry must embrace and prepare for change if it is to adapt for the future.

In order to prepare for the future, we must first understand the changes that are taking place in IT operations now.

The first being virtualisation. We started with single bare metal servers running a few applications, to a single server running many virtualised "servers". The benefit, being less investment for IT operators due to the ability to consolidate virtual machines onto fewer physical servers.

The second shift has been the adoption of containers. Instead of virtualising the hardware and running individual operating systems, containers run on top of the operating system of a host or node. This allows us to run multiple workloads on top of a single operating system. These nodes can be physical or virtual, where one "server" is able to run many containers, allowing ability to balance workload more efficiently.

The most recent shift is Functions as a Service (FaaS). Also known as serverless, FaaS eliminates the need for organisations to maintain their own servers by outsourcing infrastructure to a third party. With the abstraction of computing, the hosting and operating infrastructure has become its own commodity.

This trend towards abstraction indicates that within the next few years we won't care about infrastructure anymore. The less applications we run on bare metal, the less we should have to care about it.

An operator running an application on a public cloud has no need to care about physical infrastructure behind the cloud. However, this does mean that it won't be possible for them to monitor said infrastructure for potential network issues.

The question then arises, what does the future of monitoring look like? To answer this question, we must focus on the application itself, rather than the workloads running on the infrastructure.

Observability of metrics, logs and traces directly pulled or pushed from our workload or application is a good way to achieve this. With this high cardinal data, we are able to infer the current state of a system from its external outputs.

Once the part of the application causing problems has been identified, it is possible to look at these logs to check for write issues on a specific node of the database cluster.

Ultimately, the future of monitoring is changing and we are going to rely on the infrastructure less than ever before. But, to understand the future, we must embrace change.

Equinix opens up shop in sunny Slough

Equinix, the US data centre and internet connection specialist, has opened a £90 million colocation facility in Slough – its ninth around Greater London and 12th in the UK.

The firm said the flagship bit barn, known as LD7, offers space for 1,750 server cabinets immediately and will be expanded to 2,625 cabinets at some point in the future.

The new data centre is located in an industrial suburb of Slough – the de facto bit barn capital of the UK. It is home to more data centres than any other place in the country, including four existing Equinix facilities.

LD7 has a chilled water-cooling system, combined with adiabatic pre-cooling. In addition, it offers access to more than 90 network providers and several transatlantic fibre cables linking the UK and the US. Equinix said this enables 30 millisecond latency to New York.

The project is part of the company's £295 million investment in the UK infrastructure throughout 2018/19. In addition to LD7, Equinix is spending £94 million to expand LD9 (formerly known as Telecity's Powergate), £82 million to expand LD10 (formerly operated by IO) and another £24 million to expand LD4.

Outgoing prime minister, Theresa May, welcomed last year's announcement to create LD7 as a sign that the country is still a viable target for investment, even amid Brexit uncertainty. "Equinix's investment reflects the growing demand for digital financial services in the City of London and is a vote of confidence in its future as the world's premier financial hub," she said. "This is exactly where we want to be heading,"

Including all the current expansion projects, Equinix will have invested over £900 million in the UK's infrastructure.

The company said its expansion plans support London as a "financial hub" and one of the leading cities for business, regardless of the outcome of the UK's planned departure from the European Union.

Equinix lists all three of the world's largest cloud vendors – AWS, Azure and GCP – among its customer base and operates over 200 data centres spanning 52 territories. ■

SSE signs deal to expand Janet South network

SSE Enterprise Telecoms has joined forces with education sector provider Jisc to refresh the Janet South network as part of its programme to develop a new Janet Network access infrastructure.

The partnership will see seven BT exchanges unbundled and use four existing points of presence (PoP) to provide improved connectivity to 11 UK universities.

Furthermore, a pre-existing contract between the firms has been extended, developing the connectivity framework required to improve the support for education and research across the UK and access to the global research and education network.

SSE's core fibre network will be used by Jisc's UK 'backbone network' until 2028, enabling data-intensive research centres including The Science and Technology Facilities Council's Rutherford Appleton Laboratory and Imperial College London access to significant bandwidth and speeds of up to 100gbps.

"We're very excited to announce the launch of the Janet South Network partnership and further extension of the UK backbone network, which will keep vital institutions producing ground-breaking research and development for years to come, particularly as 5G and internet-enabled devices become more mainstream," said Colin Sempill, managing director at SSE.

Jeremy Sharp, Janet infrastructure director, added: "The relationship between Jisc and SSE Enterprise Telecoms originated in the early 2000s and, nearly 20 years later, the relationship continues to grow from strength-to-strength. A substantial level of trust has built up between our two companies and these new network contracts show our continued commitment to further develop this relationship." ■

Colin Sempill, managing director at SSE, says the extension "will keep vital institutions producing ground-breaking research and development for years to come"
PHOTO: SSE

Extreme Networks to invest R&D budget into AI and automation

Extreme Networks, the US solutions provider, will be committing 95 per cent of its research and development budget into software automation and AI, citing a goal to turn organisations into an 'intelligent engine'.

The company said it is planning to expand the automation capabilities across its Smart OmniEdge, Automated Campus, and Agile Data Centre solutions to create a "secure, self-healing, self-driving network from the enterprise edge to the cloud".

John Morrison, VP EMEA at Extreme Networks, said the UK is one of the key markets for Extreme and in recent years it has significantly increased its client portfolio in this region.

"We are working with a wide range of British companies including City, University of London and West Suffolk NHS Foundation Trust," he told *Networking+*. "To make sure our current and future clients and partners benefit from the best networking services we are investing 95 per cent of our R&D budget into developing enhanced AI capabilities. Our next-generation networking capabilities and services will enable our UK clients to achieve their digital transformation goals faster, increase productivity and boost innovation." ■

Extreme said it is planning to expand the automation capabilities across its solutions to create a "secure, self-healing, self-driving network from the enterprise edge to the cloud"

Cyber security professionals considering new career - report

Cyber security professionals in the UK are struggling to defend against the growing wave of threats because of the lack of resources at their disposal and many have considered quitting their jobs as a result.

These are the stark findings from research conducted by cloud security specialist Censornet from a survey of 300 specialists working in large UK organisations across a number of different sectors, with 500 employees or more.

It found that 79 per cent of respondents said they were facing a lack of resources – both technological and human – despite the increasing number of security threats faced by all enterprises. Nearly three quarters (72 per cent) said they had considered leaving their jobs because of it.

Elsewhere, half of those surveyed said a lack of cyber security specialists was their biggest problem, with ineffective technology in second place (47 per cent). Human error and insufficient budget were also major concerns (40 per cent and 41 per cent respectively). The damning research also comes at a time when a pronounced skills shortage is making it dfifficult for companies of all sizes to identify and hire qualified personal to manage their often-overwhelmed security operations.

Although 57 per cent said they were suffering from alert overload – with an average of 33 pieces of software in use per organisation – 65 per cent of respondents said they thought more technology would help ease the pressure. Some 86 per cent said they would benefit from solutions such as increased automation.

"It's no secret that companies of all sizes have been having a hard time finding qualified personnel to manage their often-overwhelmed security operations," said Ed Macnair, chief executive officer, Censornet.

He added that "until now", humans have been limited by their inability to see across multiple point products and correlate information - without huge amounts of manual work.

"Automating activity such as repetitive low-level tasks usually undertaken by a human can free up limited analyst resources to focus on more advanced tasks, helping to close staffing and expertise gaps and also help stave off cyber fatigue," said Macnair. "It is taking the security industry beyond events and alerts and into 24x7 automated attack prevention." ■

Ex-defence secretary takes aim at government

Former defence secretary Gavin Williamson has called for a "proper, full and impartial" inquiry into the Huawei scandal that led to his dismissal.

Williamson was sacked following an inquiry into a leak from a top-level National Security Council meeting, which he described as a "shabby and discredited witch hunt" aimed at removing him from his post. The prime minister, Theresa May, said there was "compelling evidence" he was behind the leak.

Not only does he deny the allegations, but Williamson wants both the prime minister and police to be brought to task.

"With the Metropolitan Police not willing to do a criminal investigation it is clear a proper, full and impartial investigation needs to be conducted on this shabby and discredited witch hunt that has been so badly mishandled by both the prime minister and Mark Sedwill," Williamson said in a statement. ■

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London is the most 'digitally ready' – Siemens

London has been crowned the most "digitally ready" global city by industrial manufacturing firm Siemens, despite the continued uncertainty caused by Brexit.

The company's web-based application, Atlas of Digitalization, measures the "readiness and potential of six major cities to embrace digitalisation and develop new ways of living, working and interacting" to give six cities a digital readiness score.

Data from 21 indicators put London in top spot, above Buenos Aires, Dubai, Johannesburg, Los Angeles and Taipei.

The analysis factored in areas such as innovation, greenhouse gas emissions and time spent in traffic to give the cities a digital potential score. The rationale was to identify where there is opportunity to grow digital capabilities to transform society and economy in the move toward becoming smart cities.

The analysis factored in areas such as innovation, greenhouse gas emissions and time spent in traffic to give the cities a digital potential score

According to Siemens, initiatives to tackle the city's pollution problem such as London's congestion charge and the Ultra-Low Emission Zone; factors such as improving mobile internet speeds and a focus on smart technologies through the Mayor of London's 'Smarter London Together' have helped the capital secure top spot.

Siemens identified features such as smart street lights, smart meters and automated metro lines as preparing the city for further smart infrastructure in the future.

The company also highlighted the willingness of London's local authority to embrace new technology with Transport for London and the National Health Service increasingly collaborating with the tech community and universities. This has helped give the UK government a Digital Government Score of 91.921.

Juergen Maier, chief executive officer at Siemens UK, said that London was on the right path toward becoming a smart city.

"It is tremendous that London is leading the charge in digitalisation among these global cities," he added. "In spite of all the economic uncertainty we have been facing in the UK over the last two years this study shows we are still well placed to achieve leadership globally in the fourth industrial revolution if we continue to invest, innovate and grow responsibly and sustainably.

Nevertheless, Maier warned that the UK must look further afield, as there is huge potential for growth outside the capital

"However, there is more to the UK economy than London and our Northern cities particularly in the Northern Powerhouse must also benefit from innovation and investment," he said. "Each city here in the UK and globally must address its own unique mix of challenges and opportunities by embracing digitalisation; the key to sustainable, economically vibrant future cities."

Siemens also identified areas for improvement for the capital – one being that London is now the sixth most congested city and so there is cause for urgent investment in new forms of transportation. ■

Cyber criminals view IoT devices as 'low-hanging fruit' – research

Cyber-attacks targeting Internet of Things (IoT) devices could cost the UK's economy £1 billion annually, according to research by a Dutch software firm.

It found that IoT devices are seen as "low-hanging fruit" by cyber criminals who seek to take advantage of the technologies and their weak security measures.

The research conducted by Irdeto further found that IoT attacks cost UK businesses £244,000 on average in 2018, with malware attacks the most common form of breach.

"Insecure IoT devices and companion apps are essentially low-hanging fruit for cyber criminals, who are increasingly finding new, creative ways to turn our technological dependence into their own nefarious gain," said Steeve Huin, Irdeto's VP. "It's clear that, if not addressed, a lack of IoT security could pose a serious financial threat to the wider UK economy. With so many devices entering the market and being deployed in critical businesses, the need for improved security measures is without question."

Over half of the businesses questioned in the report experienced a service outage as a direct result of an IoT-related attack, suggesting that breaches are becoming more widespread – particularly as more and more IoT products are being introduced into critical industries, such as healthcare, transport and manufacturing.

However, the findings should come as no surprise as cybersecurity experts have long warned of the increased threat to businesses as more and more office and household devices are connected to the internet.

In early May, the government unveiled plans to introduce new laws to ensure IoT products come with basic cybersecurity features to protect consumers and businesses. ■

Cybera sheds light on remote networks

US SD-WAN and security service provider Cybera has launched a new cloud-based management tool designed to increase visibility of operations on remote site networks.

CyberaVUE is the the new management offering and forms part of the company's security-focused multi-tenant platform called CyberaOne.

The solution offers real-time health and network status visibility, controlled environment for routine changes and it monitors and identifies the root cause of local issues

It can also address conflicting network and security policies by letting each one individually configure just the specific services they require, resulting in brand-level security enforcement, franchisee-level flexibility and a single portal to facilitate outside partner management.

Daniel Scott, director at UK- based Virocom, a business communications technology service provider and one of Cybera's partners, said CyberaVUE was "a critical part of the value" the company strives to deliver to its customers. "This enhancement gives us and our customers quick access and change control to global sites by geography, managed groups, or site status through a web portal," added Scott.

Cybera enables business for distributed enterprises, including retail and hospitality, healthcare, financial services and other key verticals with many remote locations.

Daniel Scott, director at Virocom says CyberaVUE was "a critical part of the value" the company strives to deliver to its customers

Other enterprise clients in the UK, include click & collect parcel company, Doddle, as well as asset management service provider Apex Locker Solutions. ■

Telensa contracted by UK Council to deploy smart streetlights as part of 2030 Vision initiative

A council in the west Midlands has contracted connected lighting and smart city data applications specialist Telensa to deploy smart street lighting infrastructure as part of the region's 2030 Vision initiative.

Sandwell Council plans to install some 4,000 lights by 2020, with the intention to increase this to more than 11,000 by 2022. It is also converting all its streetlights to LED as part of the upgrade.

The streetlights will be wirelessly connected and managed using Telensa's PLANet system, which, among other things, will give the council control over lighting levels. The council will also be able to remotely tailor the streetlights for each location, in addition to delivering energy and maintenance cost savings.

PLANet is described as an end-to-end intelligent street lighting system, made up of wireless nodes connecting individual lights, a network owned by the city and a central management application. It improves quality of maintenance through automatic fault reporting and turns streetlight poles into hubs for smart city sensors.

The project is backed by government-funded Salix Finance as part of an "invest-to-save" initiative into which the council is also investing. Furthermore, the investment is expected to pay for itself within seven years.

Salix has provided over £190 million of interest-free funding towards street lighting upgrades with 81 local authorities in England. Furthermore, those projects are expected to deliver annual savings of over £36 million and 130,000 tonnes of carbon.

"Our 2030 Vision project seeks to inspire our residents by creating a local atmosphere in which they can say they're proud to be from Sandwell," said Amy Harhoff, director of regeneration and growth, Sandwell Council.

"We are excited to be working with Telensa on a project that will reduce the council's carbon footprint and provide crucial financial savings." ■

The streetlights will be wirelessly connected and managed using Telensa's PLANet system, which, amongst other things, will give the council control over lighting levels

THE IoT CONNECTION News, opinion & developments from the world of the Internet of Things.

Vin Sumner, founder and chief executive officer at Clicks and Links

If there are smart cities, then what are dumb cities?

In its broadest sense, a city is a place where people in many forms come together, as reflected in the Greek term "polis," meaning "people". In this context, a city is a place where people come together to work, exchange, play and live side by side through a myriad of organisations and functions, comprising a city's stakeholders.

A city is also an administrative entity within a geographic context, which is entrusted with authority from its in-dwellers to carry out activities contributing to their well-being. In this sense of "city", people pay in the form of taxes to live within the city's jurisdiction, to have a say in how the city is managed, and to make use of the city's services. As such, cities are also financial and governing bodies, and in-dwellers, as governed by the city, enjoy the status of "citizen".

These are decidedly simplistic views on the roles cities play in the life of their in-dwellers and in the communities, large and small, with which they interact. They lack the descriptors which in common parlance help us to distinguish one city from the next, as being "exciting," "fun," "quiet," "pretty," "liveable," "boring," etc. Nor do they address the character of a city: its soul, heart, vibe; where we can talk about culture, art, peace, love – a feeling in the "air"; its leadership, its brand; something virtual, even something "digital".

How many people, for example, who do not live in Manchester have an affinity and feel part of the city because of its football team? How many people in the world feel New York is "their" city, even if they do not reside there? How might we use such city "brand loyalty" in encouraging behaviour change?

As citizens, city dwellers have obligations, but they also expect to derive a net benefit to their existence from city life, whether that is social, financial, physical, intellectual, emotional, or otherwise.

So, what does the term "smart city" mean, other than a marketing phrase for the large tech companies such as Cisco and IBM? I guess a truly smart city would have nobody in poverty, no crime etc. or maybe it would be an automated city with no people which seems at times what the tech companies are talking about. They are focussed more on the digital infrastructure of the city and tend to forget the very function of a city which is an organic gathering of people. Ideally smart city would be consigned to the dustbin of marketing terms along with machine learning, algorithms etc, but to some degree we are stuck with it as a lazy description of something very complex.

Smart city adds nothing other than being some sort of umbrella term for the application of digital technologies to improve the life of citizens. Whether the city is smart will depend on how the city does things rather than the implementation of technology. Perhaps less emotive descriptions like City 2.0 should be used to indicate a city is looking seriously at how technology can affect the city both for good and bad.

Many cities today will say they are smart cities and have a smart city initiative – it's very much a box tick and has very little underpinning it. However, it's a term that attracts attention from funders such as Innovate UK and H2020 and as a result draws more in without deep thought.

We have smart everything today: smart homes, motorways, factories and the term smart is woolly and poorly defined - it neither describes the state of a city such as poor or rich, hot or cold, or the role of a city, autocratic, enabling democratic. Tech companies like to use it as a synonym for control and find some places have embraced the use of smart as a dashboard for the city with the mayor pulling the levers.

Others prefer to look to crowd or citizen sourced approaches as the "smart" way, but this often seems to dismiss expertise; I am not that keen on crowd-built structures and technology though people must be involved in the design and impact of technology.

I see a city as an enabler not an end in itself and digital tech should enable citizens in the same way as roads and rail and canals have done in the past.

There is no measure of a smart city though there are some attempts for purposes of awards etc. Hence aspirations to be a smart city are more of a call to arms and initiate processes. However, any city ought to want to define its direction in terms of the well-being of its citizens rather than the number of sensors or servers or algorithms. This can then lead to a vision of life in a city supported and enabled by tech, not one driven by tech.

Since the opposite of smart is dumb, there must be many dumb cities around the world, but that is as meaningless as smart.

If it means anything smart is the recognition by a city in all its forms that change is an ongoing process and a city needs to be forever embracing new ideas and approaches, whether digital or not to improve the well-being of its citizens.

Digital tech should enable citizens in the same way as roads and rail and canals have done in the past

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VIEW FROM THE TOP Opinions from industry experts

Sascha Giese, head geek, SolarWinds

Team selection: which tech is premier league fit?

The IT pro community is tasked with knowing which technologies will fit within the existing IT stack, which ones warrant the biggest investments, and which ones best support their organisations' long-term transformation goals. In fact, the IT pro's role is not too dissimilar from a Premier League football manager selecting new players for their team.

IT pros are frequently inundated with claims of the most cost-effective and efficient solutions and, like football managers, they need to decide which players – or technologies – to put forward in order to keep their defence in tack, and better yet, find someone to score a goal. So, which technologies should today's IT pros consider having in their all-star team?

The van Dijk of security

When it comes to technology adoption, IT pros need to ahead of the challengers, such as hackers. A solution that is able to monitor its network and identify the exact point where an issue will take place, which could be likened to an attempt at goal. It's vital that they're in the right place at the right time to stop opponents from entering unmarked territory.

This is where, for IT pros, patching could come in. Over the last couple of years, large-scale, global attacks such as WannaCry pointed to the need for something as simple as a routine patch test. IT pros need to become more mindful of the consequences of not rolling out tests regularly. Sure, patches are thought of as a protective measure – like van Dijk playing defence for Liverpool. But what businesses need to realise is that if they aren't installed and rolled out frequently, this can be the same as having your star player out for a whole season. And as a result, your opponent can see your vulnerabilities and exploit them to knock your team off the top spot.

The speed of Mbappé

In technology and football, speed is everything. The significance of a couple of seconds can be the difference between Kylian Mbappé outrunning his opponent, or even the long-awaited potential speed of a 5G network. With the promise of speeds 20 times faster than 4G, it's not difficult to see the appeal to an IT pro.

But to take advantage of all that 5G will have to offer, telecommunication companies will need to increase their infrastructure investments. Operators will have to enhance their 4G networks to cope with the growing demand in the coming years. This will ensure that when 5G is up and running, the quality of the service doesn't take a nosedive when moving between networks. A football manager cannot rely on Mbappé speed to sail them through, it will be the support from around him that will get the team that win.

The agility of Hazard

In today's IT space, as more businesses move towards the cloud, they need to have a solution that has the agility and flexibility to support its new, and extremely fast paced environment. A technology that can react quickly to a spike in user activity, and maintain its performance. A solution that could resemble the likes of Eden Hazard, who can dribble his way through many opponents to score the winning goal in the most challenging competitions.

Using containers can decrease the time needed for development and deployment of applications and services. Containers are a very cost-effective solution. They can potentially help IT pros to decrease operating and development costs.

Nevertheless, one of the main disadvantages of container-based virtualisation compared to traditional virtual machine is security. Containers share the kernel, other components of the host operating system, and they have root access. This means that containers are less isolated from each other than virtual machines, and if there is a vulnerability in the kernel it can jeopardize the security of the other containers as well. This can mean that when Hazard is injured, the whole team could be affected.

The leadership of Kane

IT pros, like all great teams, need a captain that they can rely on – one with the ability to be in touch with all its networks far and wide. Ensuring maximum performance, Software-Defined Networking in a Wide Area Network (SD-WAN) is a specific application of SDN technology applied to WAN connections such as broadband internet, 4G, LTE, or Multiprotocol Label Switching (MPLS). It connects enterprise networks – including data centres and branch offices – over large geographic distances. Like Harry Kane, SD-WAN unites disparate elements to make sure the team delivers.

SD-WAN adoption lets IT pros deploy internet-based connectivity easily, quickly, reliably, and securely. This is an all-round player that can result in ubiquity, increased bandwidth, reduced costs and improved application performance. This is a player that IT pros are likely to want in their back pocket.

The best of the best

When making any vital decision for a digital transformation strategy, IT pros need to ask themselves all the questions that can assist in coming to important choices.

While all technologies have star qualities, they're not fit for every business. Depending on your organisation, the challenges and the solutions to fix them are out there – they just need a manager to spot their talent.

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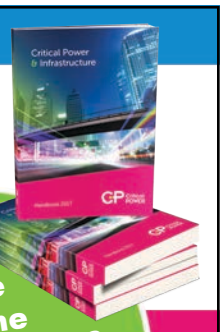

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Drinking, dining and dancing: upgrading the old and new

How three very different establishments made going out, having dinner and enjoying music easier for their guests and staff

Stay in touch at the table

The Ivy Chelsea Garden is a spin-off "little sister" of the iconic London restaurant, The Ivy.

There are now 32 Ivy-branded cafes and brasseries, all owned by Caprice Holdings, along with other fine dining restaurants.

The Ivy Chelsea Garden, set in a Grade II listed building in West Street, has a terrace for al-fresco dining and an extensive orangery.

It needed new IT and telecoms products to manage the high number of reservation calls and enquiries; efficiently manage the smooth running of day-to-day staff; and internet access for visitors.

The converged system was supplied and installed by QDOS SBL Group, based in Ipswich, which specialises in the hospitality industry and has equipped hotels and restaurants in the UK and overseas.

QDOS provided an Avaya telephone system and automated attendant to manage the volume of reservation calls and a LAN -- including HP PCs and printers – which supports Google Apps for Business for professional email, cloud storage, collaboration tools and business-grade security and controls.

In addition, QDOS set up a 100mbps fibre leased line together with Ruckus access points to provide internet access for all diners.

The same circuit is securely partitioned for the back-office internet and for SIP telephone lines to cut the cost of line rental and call charges. QDOS also provides round-the-clock remote and on-site service support to the restaurant.

Hitting the right notes

There aren't many more famous music venues than the Cavern Club in Liverpool. Opened as a jazz venue in 1957, it's now synonymous with the Beatles, who played there from 1961-1963. Although the venue has since been demolished and rebuilt, it is a top UK destination, with a bar/pub and continued dedication to live music.

However, every business has to evolve in order to maintain its appeal and the Cavern is no different. Nevertheless, the challenge was enormous.

As its name suggests, the building is a labyrinthine brickwork construction and the Wi-Fi signal died if you took a wrong turn. This was only exacerbated by the high visitor density, which overloaded access points.

Cavern staff also needed access to office systems via Wi-Fi, so two separate networks (SSIDs) with different security credentials were required. What's more, the existing low-speed routers needed to be replaced with VDSL-capable devices that were approved for usage on BT networks.

"We want visitors to be able to connect instantly to social media and share their experience, but with no 3G/4G signal underground and with multiple pillars of solid brick construction, we had struggled to enable a reliable wireless internet service," said George Guinness, IT manager for the Cavern Club, "We also wanted to take advantage of the higher broadband speeds available with VDSL, so were considering a router upgrade."

To remedy this, Guinness approached a local specialist Lansafe.

Following contact with DrayTek at one of its roadshows, Lansafe proposed a system of 10 devices comprising Vigor AP-902 wall-mounted and Vigor AP-910C ceiling-mounted access points.

"When we started to investigate the requirements for the Cavern Club, it quickly became clear that a highly robust and manageable wireless solution was needed," recalls Adam Baxendale, commercial director for Lansafe. "Basic standalone access points just wouldn't cut it, so we looked at a higher-end solution from a credible supplier that could address the Wi-Fi challenges, help with the associated LAN infrastructure, and provide the VDSL router."

Lansafe chose a DrayTek VSP-2261 PoE switch to connect and power the access points and a Vigor 2860 router with full BT compliance for both VDSL and ADSL connections.

The final stage was to implement ACS-SI - DrayTek's central management system - which allows for all devices on the network to be managed, monitored, and controlled.

Finally, the Cavern's users were able to connect to a minimum of four, or a maximum of eight, access points, wherever they were in the venue.

Broadband boost aids country dining

WSet just outside the market town of Kirkby-in-Ashfield, Nottinghamshire, the Countryman Pub and Dining suffered from poor broadband and Wi-Fi.

It was served by a 4mbps line which achieved 3mbps at best and Wi-Fi used a low-cost retail router. As well as poor internet access, mobile coverage was affected by the fact that the Countryman is in a dip and slightly out of town.

In addition to improved broadband the owners wanted to make Wi-Fi available throughout and a captive portal for guest Wi-Fi.

They called in Paul Pitchford, trading as Ashfield IT, based just three miles away in Sutton-in-Ashfield.

Mr Pitchford reports that he found a suitable broadband provider,

negotiated free installation that included civil works and connection from the road with speeds up to 350mbps, multiple static IP addresses and transfer of the phone line.

He chose equipment from the Ubiquiti Unifi range. It comprises three access points, a managed network switch and Unifi gateway along with a cloud controller giving Ashfield IT and the Countryman management control over the Wi-Fi, both internally and remotely. And statistics about the devices and network traffic enable both to see how the network is performing.

As well as a guest Wi-Fi portal, Mr Pitchford set up a private network for staff and bar equipment to segregate the devices on the two different networks to ensure security.

The guest Wi-Fi uses a captive portal from an Edinburgh company BlackBX. To gain access, clients are asked to provide a small amount of information about themselves including an email address.

GDPR compliant, when users access Wi-Fi they are presented with a log in page where the Countryman specifies the type of information it would like to capture. It includes an image of the pub and logo to confirm to users that they are safely connected.

Mr Pitchford said one of the great features is that it remembers the device and the user. Therefore, the next time that client visits the venue, it automatically logs them back in, meaning that they do not have to repeat the process and that statistics are captured about the clients' visits.

It can also: email someone 60 minutes after their first visit to thank them for trying the venue; email a birthday invitation to visit the restaurant; notify those on the list about a forthcoming event; and target clients who have not recently visited.

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farming & agriculture

A level playing field: reaping the benefits of IoT and connectivity

PHOTO: RAJANT

The ancient industry of farming and agriculture has had it tough over numerous millennia, but it's now starting to sow the seeds for a very bright future, writes Robert Shepherd (no pun intended)

Many industries claim to house "the world's oldest profession". Whether it's a storyteller, tailor, Middle East peace broker or something even less salubrious, someone, somewhere will have their view on what it is.

The farming and agriculture sector cannot quite lay claim to that title, but it could argue it's the "world's most important". After all, if it wasn't for healthy and nutritious food, no industry would be able to function as well as it does. If at all.

However, farming and agriculture has never been without its fair share of problems. This is a sector and way of life that has survived some of the harshest climatic, economic and logistical problems over thousands of years, with many farming dynasties losing their livelihood in the process.

Fast-forward from the Neolithic era to 2019 and problems still exist - "the pressure on food farmers to digitally transform has never been greater", according to Cody Catalena, vice president and general manager, global business solutions at global communications company Viasat. Catalena says that faced with an ever-growing population, farms are at a crossroads in their ability to produce enough food to meet rising demand.

"As with any sector, technology is going to be a vital part of this transformation and this increased strain on supply will require an overhaul in how businesses along the food chain operate as they seek to produce enough to feed the world," he says. "According to the Food and Agricultural Organisation of the United Nations, food production will need to increase 70 per cent if, as predicted, the population reaches 9.1bn by 2050. In order to meet this demand, food producers will need to get smarter to ensure they are able to deliver greater crop yields and manage larger herds of livestock. The proliferation of the Internet of Things (IoT) in business has inspired other sectors to think about how they can use technology and farming is no different."

Of course, IoT is one of, if not the most used term in the technology lexicon at present. For the average punter on the street, it probably means the Amazon and Google home voice controllers or those doorbells that allow the user to answer the door from any place using their smartphone.

Still, it has been instrumental in helping organisations to streamline processes and digitise operations and Catalena says it has a much larger part to play in helping solve the world's spiralling demand for food.

He opines that producers need to become much more efficient and relying solely on traditional farming methods is no longer the way forward. In fact, he goes so far as to say that the agricultural sector "is in dire need" of innovation to help meet the increasing demands placed on it and that IoT applications and devices will help increase the amount of food being grown without compromising on quality.

In theory, it sounds utopian, but how does so-called 'precision farming' work in practice?

Roberto Marzo, head of strategy and business development at cloud communications software company, MessageBird, says that cloud communications is bringing the barnyard into the 21st century by acting as the bridge between IoT sensors and farmers – known as smart farming.

"For decades, farmers relied on instinct and the human eye to detect problems with the herd - an exhausting 24x7 job," he continues. "Today, farmers around the globe are taking advantage of data provided and collected via AI and is then served up through cloud communications to detect real-time changes in the herd, aiding farmers to take the necessary action."

Take Connecterra, for example, whose AI-enabled dairy assistant, Ida, uses a motion sensor attached to cow's collars to mine data and alert farmers to changes in the cows - from illness to heat sensitivity to changes in productivity or even when the female is ready to breed, Ida is constantly processing this data on each individually 'connected cow'. By linking up to MessageBird's cloud communications software, Ida can then send real-time alerts and actionable insights to farmers via SMS, so that the message gets through on any device, even in the most rural areas - from Europe to Africa, South America to the US. "These real-time notifications help farmers detect illness and other issues up to two days before the human eye recognizes there's a problem - enabling farmers to take immediate action – which is vital in the dairy industry," concludes Marzo.

Mike O'Malley, vice president of carrier strategy and business development for global provider of cybersecurity solutions, Radware, says that with farmers investing in agtech to monitor everything from soil moisture to sunlight intensity, the applications would appear endless.

"Agtech represents a huge step forward for the industry," he says. "It's a relatively new development in comparison to other sectors that embraced IoT tech early, one brought on not by consumer convenience but by the necessity to make farming more efficient and effective to cope with the demands of a rapidly growing population."

However, it's not just livestock that benefits from this technology. There are other tools than can enable autonomous operations, particularly with watering crops and monitoring irrigation.

"IoT-enabled sensors can continuously monitor moisture levels and plant health," says Catalena. "By pairing these systems with agricultural equipment, IoT-enabled sensors allow farmers to control when and how much water their crops receive".

"Drones that can capture detailed imagery and data can help monitor crop health and soil quality, whilst also helping farmers plan the planting of crops to optimise land use. Smart farms of the future will also utilise autonomous tractors to pull specialist equipment that helps with precision seeding, giving plants the best chance to sprout and grow."

Chris Mason, director of business development, EMEA market, of kinetic wireless mesh networks provider Rajant, says the growth of advanced autonomous equipment is empowering farmers globally to feed the growing population while using less farmland and fewer natural resources while increasing yields, reducing pests and diseases without stripping the soil of its nutrients.

"While the realisation of a fully automated farm will not happen overnight,

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the key to success will be starting with a network that can easily grow to support more and new IIoT-enabled assets, with increasingly autonomous demands, over time – which will in turn, empower the fast-paced and relentless environment of agriculture," he says.

Beefing up connectivity

While it is undoubtedly true that having the right equipment can only help the industry, how do countryfolk benefit from all this kit if connectivity is poor in rural areas? After all, the English countryside is synonymous with inadequate reception – be it internet, mobile, TV or radio.

Catalena says to embrace smart farming technology, farms will need fast, reliable connections to service smart devices spread over vast distances. "IoT sensors and autonomous vehicles need a solid internet connection to operate."

He concedes that this lack of connectivity is the biggest barrier to adopting smart farming technology. "Most farms are, by definition, in remote, rural areas: and are far enough from other habitation that it's unlikely they would get their own dedicated fixed high-speed connection without considerable expense," adds Catalena. "Furthermore, the rural areas that do have a connection are being underserved by traditional providers, who are supplying a service fixed to one location – which doesn't offer the bandwidth or coverage to support the connectivity needs of smart farming."

It would seem obvious then that farmers need better infrastructure to take advantage of the latest technologies. What's more, Catalena says poor connectivity "in this day and age should be no excuse", with everyone, rural communities included, having been promised greater inclusivity. He says IoT applications and devices in rural areas show that the appetite for more capacity and coverage is greater than ever before, especially outside of urban environments.

The right network technology can open doors to a new age of efficient, automated and sustainable farming PHOTO: VIASAT

"The UK's digital divide is creating a two-tier nation of broadband haves and have-nots," Catalena adds. "If all food producers are going to contribute, then it's vital that they all have the same level of connectivity. Traditional providers typically only offer a fixed connection, but with the average English farm spanning 85 hectares, it's impossible to serve that from one location without digging up trenches and laying more cables at great expense. These connections are also typically very slow compared to modern fibre, and don't offer the capacity needed for live video feeds, let alone trying to operate multiple autonomous vehicles over the entire estate."

If what Catalena says is true – by all accounts it is – some farms will be able to adopt smart farming to become more efficient, but less privileged ones lingering in the digital divide are not afforded the same opportunity.

"Providing this connection is challenging when we're increasingly reliant on fibre, whilst 4G is yet to make it into rural areas, let alone 5G," he adds. "It's vital that the government properly future-proof the UK's broadband infrastructure as a matter of urgency to help food producers meet the demands of population growth."

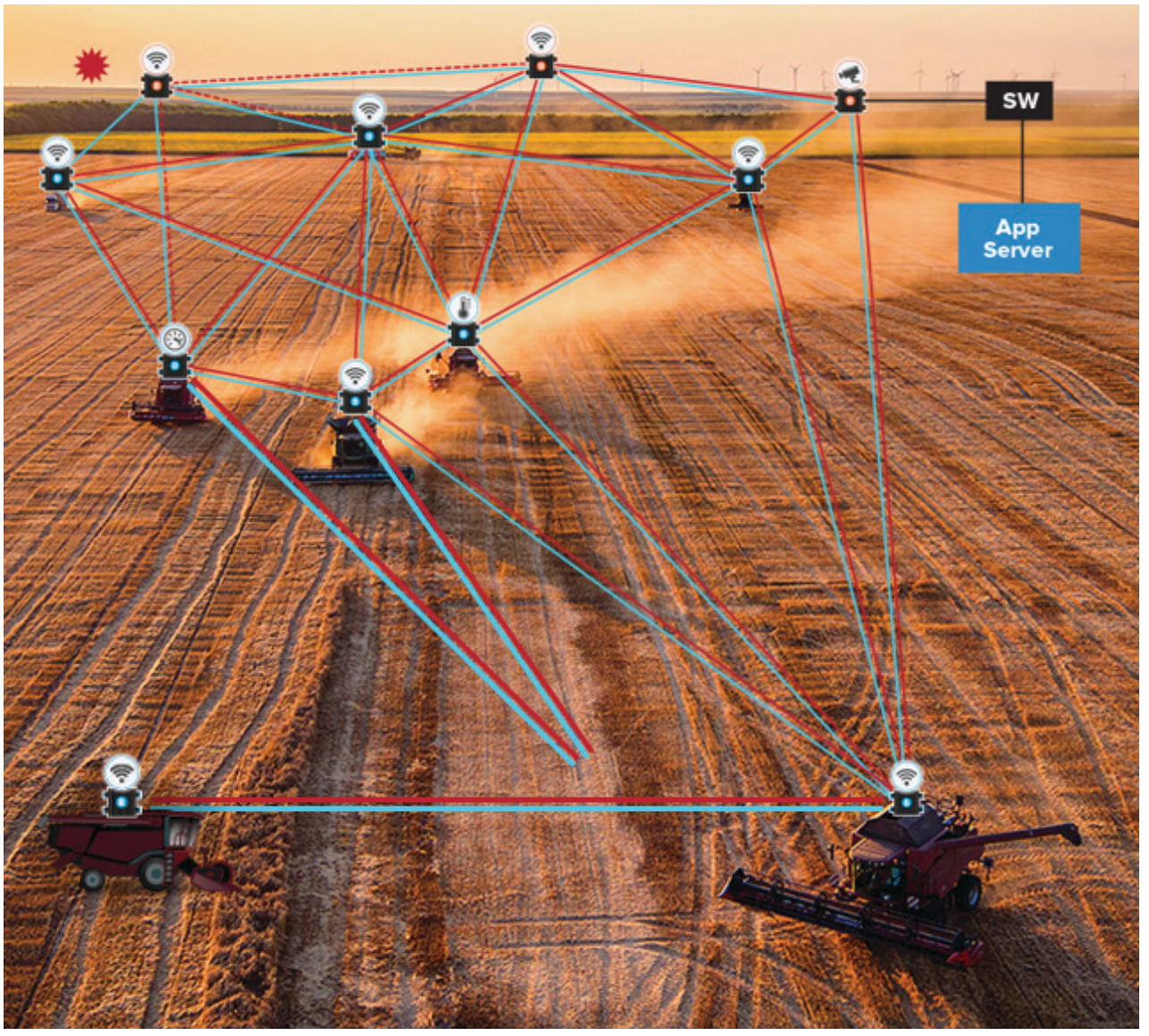
Catalena says the sector "can't just rely on one or two technologies to deliver connectivity to every part of the UK". Instead, he says what's needed "is a holistic network-of-networks", a mix of communication technologies like fibre, 5G, satellite and more, to provide the coverage and capacity smart farming needs to every area of the UK.

He says such an approach can provide the stable connection needed to every inch of farmland, "from the Isle of Dogs to the Shetlands", which means farms all over the British Isles can collectively keep pace with food demand as populations continue to grow.

Mason says the right network technology can open doors to a new age of efficient, automated and sustainable farming. "The network will empower the use of precision farming technologies, which utilise automated agriculture robots to produce a resilient, productive system that works around the clock to perform typical farming tasks with far greater speed, accuracy and productivity than traditional manual means," he says.

However, Mason adds that for farmers to truly reap the benefits, connectivity must not only be good, it must be 100 per cent reliable, regardless of mobility demands as equipment travels over farmland. Down time can critically impede production.

He cites Rajant's own kinetic mesh network, which Rajant claims enables highly-mobile, highly-secure, precision farming practices at all levels of automation. Mason gives an example of how Rajant can help eucalyptus farmers. "By powering



For farmers to truly reap the benefits, connectivity must not only be good, it must be 100 per cent reliable, regardless of mobility demands as equipment travels over farmland PHOTO: RAJANT

forest-wide remote monitoring applications to optimise yields, farmers have benefitted from sensor-based monitoring of tree growth pace, identification of disease via computer vision and AI, as well as fire and disaster management," adds Mason.

Of course, with connectivity comes the issue of security, something O'Malley says must be prioritised.

"In order to continue innovating and reaping the benefits of agtech, farmers will have to navigate the same data challenges that are faced in any other sector – and that means dealing with cyberattacks that target their devices as well as their data," he adds.

O'Malley says the same IoT devices tasked with monitoring farms are actually turning them into "valuable data centres" and that in itself has major security implications.

"The average US dairy farmer is a $1 million operation and the average cow produces $4,000 in revenue per year," he says. "That's a lot at stake – roughly $19,000 per week given the average dairy farm's herd. If a farm is struck by a ransomware attack, it would literally be better for an individual farm to pay a weekly $2,850 ransom to keep the IoT network up."

So, just how do cyber criminals go about it?

"5G opens the door to a complex world of interconnected devices that hackers will be able to exploit via a single point of access, such as in a cloud application," O'Malley adds. "Once inside, they can quickly expand an attack radius to other connected devices and applications."

O'Malley is convinced that parts of Europe and the US food supply chain could be paralysed to the extent that recovery might not be possible if the right precautions are not put in place now.

"The economics of food production will come under intense pressure as we adopt more IoT to support production and replace human labour," he adds. "As will our practices for keeping the networks and cloud applications secure."

Nevertheless, he says anyone looking to invest in agtech devices or services needs to be aware of the potential risks." They must ensure their IoT devices are not easy pickings for cybercriminals who are searching for low hanging fruit," O'Malley adds. "It's important to take proactive steps and not simply wait to become another victim."

Indeed, technology can only help to improve the workplace, whatever the sector, but if it's not properly managed, it's open to abuse.

The modern incarnation of IoT – as far as farming and agriculture are concerned – might still be in its infancy, but the technology itself has long been the farmers' friend.

"Admittedly, 'connected cows' aren't new," says O'Malley. "IoT devices have been assisting farmers for several years now and it's a booming business."

Still, it looks to be gaining support from the bigwigs. A recent report published by the House of Lords Select Committee on the Rural Economy, called Time for a strategy on the rural economy (*see below*), has set out a range of recommendations across different policy areas to tackle the challenges facing the rural economy.

Since that report, the heads of the UK's four mobile phone networks O2, EE, Three and Vodafone have announced plans to form a new company to help eliminate rural connectivity not-spots. Perhaps things will finally start moving quickly after all. Watch this space. ■

There are tools than can enable autonomous operations, particularly with watering crops and monitoring irrigation PHOTO: VIASAT

Key recommendations in the *Time for a strategy on the rural economy* report

Rural strategy

- Rural economies are facing significant opportunities and challenges. Issues including the UK's impending departure from the EU, cuts to local authorities' budgets, digital connectivity, affordable housing, and an ageing rural population make this an ideal moment for the Government to develop a comprehensive rural strategy, to set out its ambition for rural areas.
- The Government needs to rethink and reform the rural proofing process to ensure that relevant policies and legislation are attuned to the needs of rural communities and rural economies.
- Local Government and other public bodies should develop their own local rural strategies consistent with the Government framework and be responsible and accountable for their implementation.

Rural delivery and place-based approaches

- For a national strategy and its underlying policies to be effective, it is crucial that they are delivered locally using a place-based approach. This must include effective partnership working from all relevant public, private and voluntary bodies, driven by the nature of each local area and with active community participation, breaking down the silos that too often characterise rural policy.
- The Government must bring forward the consultation on the Shared Prosperity Fund as soon as possible and give much more information on its proposed scope to enable rural businesses and communities to begin planning for the future.
- The Fair Funding Review must ensure that rural local authorities are properly compensated for the additional costs of service provision, and that rural areas are fairly treated in future funding settlements.
- National and local Government should review their procurement policies to ensure that small and local organisations have the genuine ability to bid for the delivery of services.

Digital connectivity

- Government should direct Ofcom to conduct a review of the Universal Services Obligation as soon as possible, focusing on what minimum commitment would be needed to sustain and support rural businesses and communities, especially in remoter areas, and including both download and upload speeds.
- Ofcom should also re-assess the £3,400 payment threshold so that rural homes and businesses are not excluded. This must include consideration of home workers and businesses operating from home in remote areas.
- We welcome the proposal that Ofcom should review the option of introducing roaming in rural areas to address partial not-spots and would urge them to begin this review as a matter of urgency. Government and Ofcom should also encourage mobile network operators to share transmission masts more often in appropriate rural locations.

Housing and planning

- Government should provide a full and comprehensive exemption for all rural areas from the policy to limit affordable housing contributions on small sites.
- Government should consider suspending the local authority Right to Buy or making it voluntary for local authorities in specific locations, to ensure that much-needed affordable housing is not lost where it would be difficult or impractical to replace it.
- Government should revisit the merits of a spatial plan for England, particularly as it relates to rural areas, to ensure that planning policy operates in a framework where land use priorities are properly considered above the local level.

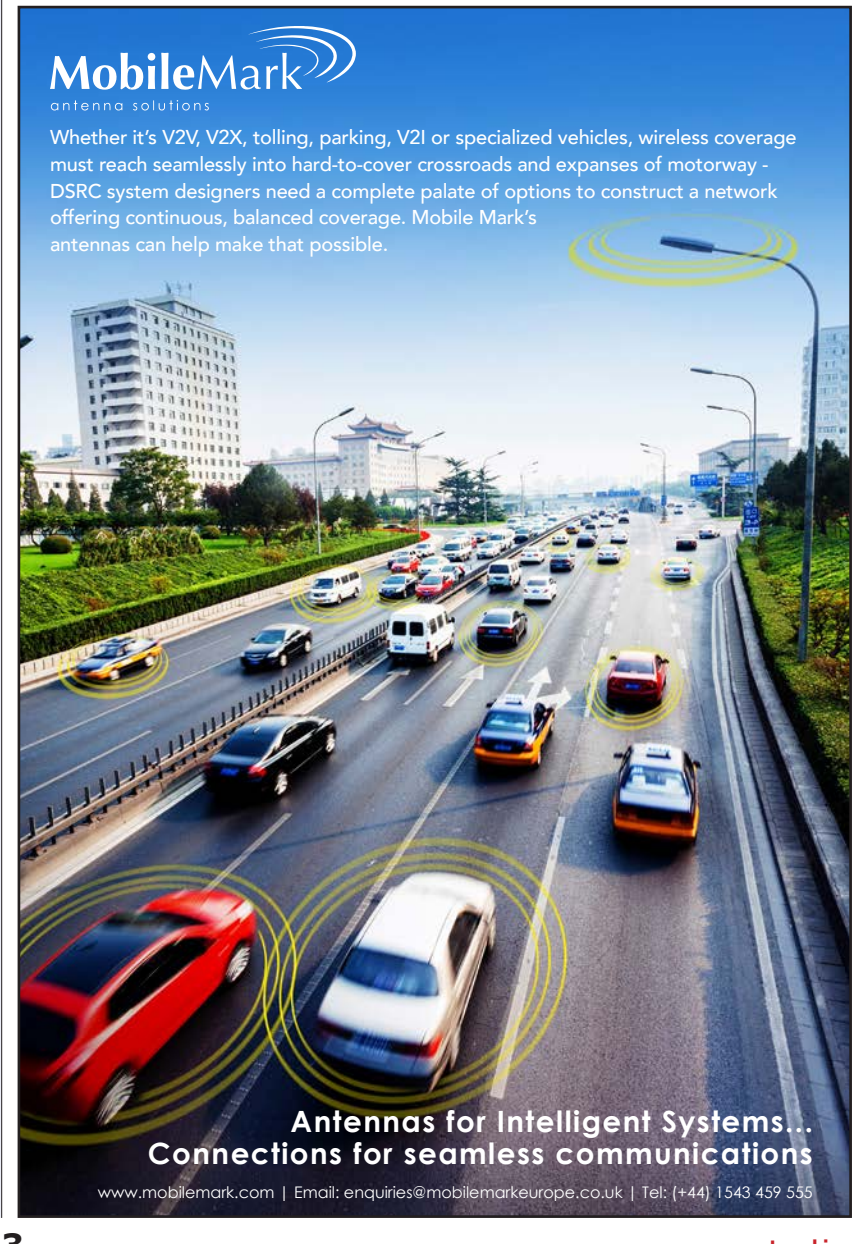
Skills and business support

- The Government should review the impact that the revaluation and current multiplier levels for business rates are having on rural businesses. There is also an urgent need to review the impact of small business and rural rate relief provisions on rural pubs, local shops and other businesses.
- The Government should investigate whether the current tax system is putting off farmers and rural small businesses from investing in diversification. As part of its review into tenancy agreements, the Government should also address restrictions on tenant farmers that may prevent diversification.

Local service delivery

- Government should undertake a full review of funding streams to rural public transport. The aspiration should be to develop a "single transport investment pot" that could be used to better support rural transport using a place-based approach.
- More needs to be done by Government to better understand, track and respond to rural criminality.
- Government must ensure that the challenges and costs of providing health services in rural areas are properly reflected in funding allocations to Clinical Commissioning Groups.

**source www.parliament.uk*



Tips to keep in storage

You need data storage that's fast, secure and easy to access. Matthew Beale, of Ultima Business Solutions, has tips to aid your choice. And we look at some of the latest products

Refreshing a storage platform is normally a sizeable undertaking for most businesses and often one that is a pretty thankless task. However, that doesn't mean it should be taken lightly. Given the rapidly changing nature of the market place it makes sense to get a view on what is on the market.

So, what should you be looking for when making such an important purchase? When we evaluate product suitability we go through a series of **Do**'s and **Don't**s for our customers:

For starters let's look at the Don'ts (some may surprise you):

Don't get drawn in by performance figures. For 99 per cent of the customers I deal with, every array in the market is more than capable in terms of performance.

Don't be limited by the protocol you are running now. A lot of legacy deployments are still fibre channel based but this is a dying art across a large part of the industry with file or iSCSI access taking over.

Don't think one platform can do everything. For larger customers using the right platform for the right use case can save a small fortune.

Now let's see what you should be looking at:

Do look at manageability. This is the most important aspect to consider. If the platform is easy to manage and well-integrated then you are looking at the right one.

Do look at cloud integration. Even if your business is not going to the cloud yet, three to five years is a long time and over that time the question will be asked.

Do look at the detail of data reduction guarantees. Not all guarantees are made equal. Things like thin provisioning and snapshots are not data reduction so make sure you read the small print!

Do make sure that the platform has REST APIs. REST is the de facto standard for APIs now within data centres and even if you are not using them today someone will want to use them in the future.

Do make sure you look at backup integration for primary storage. No one wants slow backups and even worse no one wants no backups at all. If the primary and backup system plug together nicely you are onto a winner.

Those eight points are my killer criteria for storage platform selection. But each business will have its priorities, and each of the above criteria, as well as additional ones, will have their weighting.

Matthew Beale, modern data centre architect, Ultima Business Solutions

Designed to instantly boost the performance of servers, PCs and notebooks, **Ortial**'s Pro SATA III 2.5 Enterprise Class SSDs are available in three capacities: 240GB, 480GB and 960GB.

The company says they improve everything from boot times to read/write speeds and offer wear levelling, high speed and reliability and intelligent TLC caching and DRAM cache buffer to boost read/write performance.

All are said to be 100 per cent compatible for use with leading computer brands and each upgrade achieves the exact specification of the OEM to ensure compatibility. And all undergo rigorous quality testing.

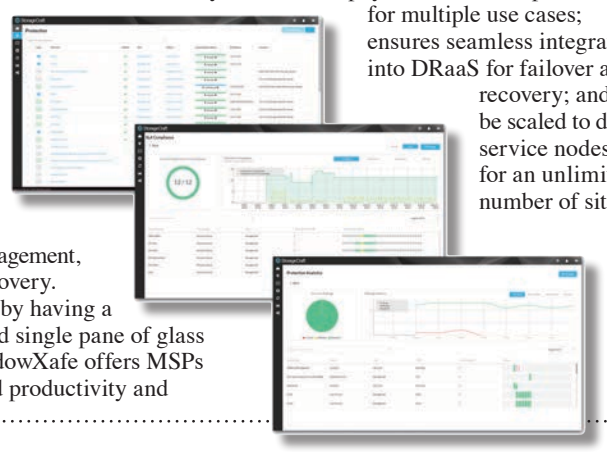
Features include: 3D TLC NAND flash technology; read/write speeds of up to 520MB/490MB; throughput speeds (IOPS) of up to 98k read and 50k write; wear levelling; SMI controller; SATA III (6Gb/s) interface type; and 10-year limited warranty.

Eight in 10 managed service providers (MSPs) believe that they are at risk of losing out if they fail to offer the right range of services or deliver new services. **StorageCraft** quotes this as it introduces ShadowXafe with enhanced functionality for MSPs.

The company says that in one product it combines on- and off-premise, virtual and public, third party and cloud for optimal data visibility, management, protection and recovery.

And it says that by having a single platform and single pane of glass management, ShadowXafe offers MSPs a path to improved productivity and profitability; one place from which to manage, plan, monitor, report and restore.

It allows the creation of a simple, scalable and flexible work-flow that simplifies management and restoration of VMs and physical machines protection for multiple use cases; ensures seamless integration into DRaaS for failover and recovery; and can be scaled to deploy service nodes for an unlimited number of sites.



Owners of **Buffalo**'s TeraStation 5010/3010 NAS models can now synchronise with Microsoft's OneDrive, along with Amazon S3, Microsoft Azure and Dropbox.

It considers the hybrid cloud a "best of both worlds" for business efficiency: confidential data can be stored locally on the NAS without relying on third-party services while ongoing project data can be shared with cloud services and thus viewed and edited externally by select employees. Firmware version 4.20, available as a free download, also enables full Office 365 compatibility, allowing employees to seamlessly edit shared files from within Office.

Buffalo says hybrid cloud is also ideal for companies with a strict corporate policy which, for security reasons, might not allow individual employees to access a cloud service from their computer or install additional apps.

Limiting cloud synchronisation to the NAS, it says, gives companies better control over shared data and allows its security features to protect sensitive data. Additionally, money can be saved when cloud storage licenses are exclusively distributed to employees who work remotely.

Two new entry-level storage products in the Storwize range have been introduced by **IBM**.

Both, it says, combine the company's FlashCore technology with NVMe performance and are supported by its Spectrum Virtualize software.

The smallest product, model V5010, offers 1 Gb iSCSI standard connectivity and 16, 32 or 64 GB cache. The larger model, V5030, has 10 Gb iSCSI standard connectivity and 32 GB or 64 GB cache.

IBM says all of the Storwize models can, thanks to Spectrum Virtualize, make use of the public cloud, now including Amazon.

The latest in the EndaceProbe range is the 8200 series analytics product for monitoring in 10GbE networks.

In a 2RU footprint, it promises 360 TB of packet storage and a write-to-disk speed of 15gbps.

Endace says it allows easy deployment of multiple security and performance analytics products.

Multiple EndaceProbes can be stacked or grouped together to form a network-wide packet capture and analytics infrastructure which can be managed and searched centrally and quickly upgraded.

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CNet offers CNCI apprenticeship

CNet Training will tackle the skills shortages facing the network cable infrastructure sector by launching the "first" government-funded apprenticeship across England and Wales.

The company said it had "fully planned and prepared" all the content of the CNCI (certified network cable installer) apprenticeship, which provides the apprentice and employer with a full itinerary of activities to follow and implement.

It has also introduced the concept of an 'apprenticeship in a box', which is designed to combat the time-consuming planning often associated with apprenticeships and on-going professional development.

The result of a close collaboration between "major companies" operating in the network cabling sector, the apprenticeship is available to all across England and Wales and will include on and off-the-job training, activities such as mentoring, shadowing, internal training and specialist external education programmes. It will take 12-15 months to complete.

"The network cable infrastructure sector is beset with significant skills shortages," said Andrew Stevens, CNet Training's chief executive officer. "The CNCI apprenticeship has been long awaited and is a significant event within the sector. It's a massive step forward in the sector and I hope by offering this 'apprenticeship in a box' concept it will motivate companies looking for new junior recruits to train as everything is ready for the learners to just get going and start learning straight away."

Stevens added that a "benefit" of the apprenticeship is that "it will ensure that all learners are trained, educated and certified properly from day one and therefore gives them a great starting point to a great career in the sector".

Meanwhile, CNet has partnered with integrated operations service provider CBRE Data Centre Solutions to deliver a comprehensive training and development programme, which will require each data centre technician to achieve Certified Data Centre Technician Professional certification. The new alliance builds on a long-standing relationship between the two companies. They currently co-deliver several technical knowledge systems and assessments to manage risk and ensure uptime at CBRE-managed facilities, including the competency and confidence assessment modelling tool.

The 'big four' accountants are country's top cyber security employers

KPMG and PwC are comfortably the UK's top cyber recruiters, according to new data released by job site, Indeed.

According to the research, both firms are hiring a large proportion of cyber security specialists, with cyber roles accounting for one in every 17 (5.95 per cent) new KPMG recruits and one in 20 (5.08 per cent) new hires at PwC.

The two other members of the accountancy sector's 'big four', EY and Deloitte, complete the cyber hirers' top four, with cyber roles making up 1.99 per cent and 1.47 per cent respectively of their current job vacancies.

Mobile operator Vodafone ranked fifth for cyber recruitment, while the rest of the top 20 was largely made up of financial and technology firms, with the supermarket Sainsbury's the sole retailer to make the list.

Cyber employees are more highly sought after than ever in the UK, with Indeed seeing an increase of 14.58 per cent in cyber postings per million vacancies from 2017 to 2018.

All the most in-demand positions offer an average annual salary above the national average of £27,600, with the top five paying a combined average of £45,851 a year.

Leading the way is the role of 'IT security specialist', which has nearly three times as much demand among employers as the second placed 'security engineer'.

Behind them are 'security consultant' and 'information security analyst', with 'IT auditor' completing the top five.

"It's telling that many large organisations now talk of 'critical' infrastructure rather than 'IT' infrastructure," said Bill Richards, UK managing director of Indeed. "Every aspect of a modern company relies on its IT, and the growing threat of cyber-attack and tightening of privacy laws means demand is rising fast for professionals who are able to protect companies' most precious information."

He added that "by definition", accountancy firms need to store lots of sensitive financial information and they therefore require robust cyber defences. "Nevertheless it's striking that the 'Big Four' dominate all four top spots in our league table of the UK's most prolific cyber hirers.," he added. "Another telling observation is how the list comprises entirely of private sector companies as the corporate world builds digital defence lines. The critical importance of their work, the skill and discretion it requires, and strong demand from employers have combined to drive up cyber professionals' salaries. Cyber security is both a hot topic and a lucrative profession right now."

IN BRIEF...

■ The UK's IT skills shortage is going to increase over the next three years for tech businesses, according to research published by the Cloud Industry Forum. The report found that 52 per cent of UK tech companies lack IT skills in at least one area of their business. Furthermore, half of respondents expected to face a skills gap within three years, more than double the current figure. Annalisa O'Rourke, chief operations officer at cloud provider Memset, pointed to "a clear link" between the growing skills gap and a lack of diversity in the tech industry or IT department. "We read a lot about the need to up-skill existing workers and to train the next generation, but what is often less talked about is the need to expand the gene pool of potential recruits," she said.

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