

NETWORKING+

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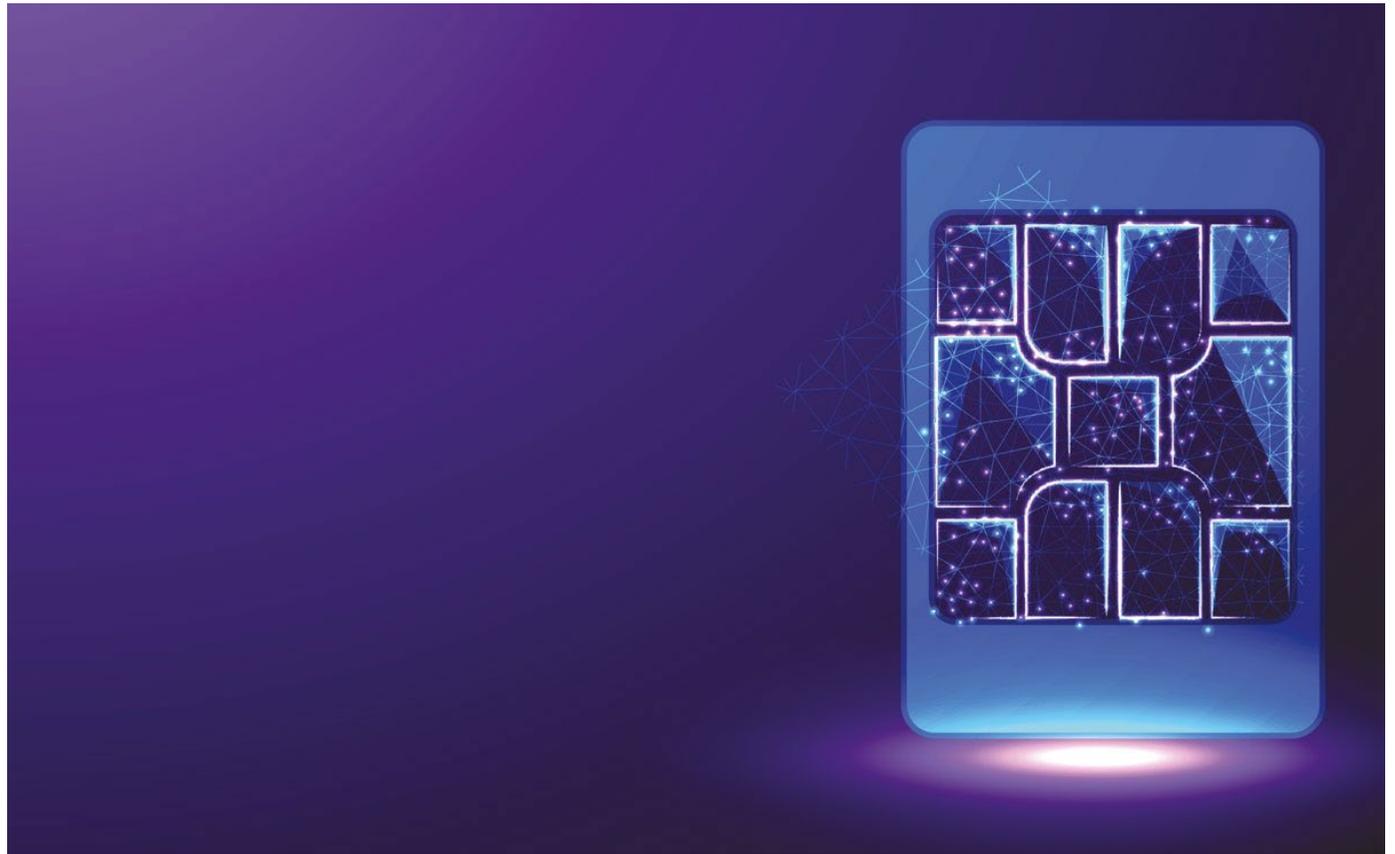
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IoT SIMS roll out nationwide



BT has switched on its IoT national roaming SIMs for businesses across the UK, allowing them to keep smart devices connected wherever they are, in remote locations or on the move.

BT's IoT national roaming SIMs will connect devices to the UK's largest network, EE, so data is quickly and reliably relayed where it's needed. As well as a primary connection to EE, the SIM can connect to multiple other major UK networks, helping to keep smart devices online.

Courier and delivery companies, in particular, stand to benefit from the new service by gaining access to reliable, fast network access no matter where they are. The new IoT service will help end users improve accuracy and efficiency by giving them access to important information in real-time. One example of this would be providing visibility of fuel efficiency, changes to a delivery schedule and cold chain management so temperatures can be constantly monitored on a refrigerated vehicle.

IoT national roaming ensures that devices can continue performing to a high standard even in the harshest remote conditions thanks to the enterprise-grade IoT SIMs, offering reliable, fast connectivity.

"Businesses across the UK are increasingly

understanding the benefits of using IoT devices in running their operations," said Marc Overton, managing director, Division X at BT. "And now, with the unveiling of our IoT national roaming SIMs, we're making sure those connections stay strong no matter where business takes you."

In addition to improved connectivity, BT's IoT national roaming service will offer a secure management portal with full security measures to protect important data and help businesses keep track of all their smart devices. This allows companies to focus on their core operations without worrying about data breaches or device mismanagement.

The added benefit of being able to switch to other operator networks, when necessary, also offers greater simplicity for businesses with many currently negotiating separate deals with mobile network operators depending on where they have operations in the country.

Shaking up the B2B IoT market with new connectivity capabilities is proving to be on trend, with more news coming this week from Minima and stacuity, which are teaming up to revolutionise IoT installations across multiple industries. Minima's decentralised blockchain capabilities will be integrated with stacuity's

programmable core mobile network and SIM cards, providing an exciting set of tools for IoT customers.

This collaboration is set to democratise access to mobile connectivity by combining their powerful and complementary technology, making it easier for telecom operators, service providers, and IoT solution developers to innovate at the intersection of IoT and blockchain. IoT customers will gain the tools they need to enhance their IoT installations across numerous industries, including smart buildings, energy, automotive, health, logistics, and water.

"We are excited to partner with stacuity to offer a powerful set of tools for industrial IoT installations in a secure decentralised manner," said Hugo Feiler, CEO, Minima. "By integrating Minima's blockchain technology with stacuity's programmable core mobile network, we can offer telecom operators secure data handling and users a simple SIM-based product."

Minima and stacuity are opening up new possibilities for IoT connectivity, security, identity, and decentralisation. This partnership has the potential to accelerate innovation in the IoT market by making these technologies more accessible and user-friendly. ■

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Life Is On | Schneider Electric

LCR Connect delivers high speed internet to schools and businesses

Church Drive is the first school in the Liverpool City Region to benefit from a full fibre connection delivered by LCR Connect – a new 212km digital network that can reportedly deliver the fastest internet speeds in the country.

“The world around us is changing faster than ever and I want to ensure that we keep up – LCR Connect is helping us to do that,” said Steve Rotheram, mayor of the Liverpool City Region. “We’re putting our communities at the cutting edge of digital connectivity with state-of-the-art infrastructure that will give them access to the fastest internet speeds in the entire country. It’s helping to attract new jobs, businesses and investment into the region and, best of all, LCR Connect is half-owned by us, which means that we can continue to pump the returns back into the local economy and reap the benefits for years to come. We’re already seeing the massive difference it’s making to local schools – but this is just the tip of the iceberg – our infrastructure will eventually link to our universities, to our hospitals, to our public spaces, and to residential homes across the city region helping to deliver better public services too. It’s a big step towards my ambition of making our region the most digitally connected place in the country – where no one is left behind.”

LCR Connect is a joint venture led by Mayor Steve Rotheram between the Liverpool City Region Combined Authority, which owns 50% of the venture, alongside ITS Technology

Group, and NGE, who are delivering the full fibre network that is being built across the six local authority areas of the Liverpool City Region.

The network, which is on track to be completed by the middle of this year, is designed to significantly improve connectivity for businesses and will support internet access for schools, and other organisations, making the city region among the best-connected areas of the UK.

One of seven schools that form Oak Trees Multi-Academy Trust, Church Drive Primary is achieving 100Mbps speeds through its broadband connection, nearly three times faster than the service it has replaced for download and more than ten times faster for the upload. This ultrafast service is being delivered and managed by local IT service providers Hi-Impact and Exa Networks.

“As a school, we are very keen to make the best use of technology to enhance and improve the learning opportunities for our children. Access to a fast, reliable internet connection has now become a vital part of the curriculum,” said Joanna Jones, headteacher at Church Drive Primary School. “This new broadband service has transformed the enjoyment and ease of access to the many online resources and opportunities that enrich the day-to-day learning of our children. It also means that our teaching staff no longer have to implement ‘plan B’ which was a regular occurrence when our old broadband service couldn’t



keep up with demand. Added to this, the children can now make effective use of the laptops and tablets that were generously donated to the school during the COVID-19 lockdowns.”

“Digital connectivity is an increasingly important factor in education, and it is really exciting to see our local schools signing up to and benefitting from LCR Connect, our own ultrafast full-fibre network. I look forward to seeing many more schools and colleges signing up and enjoying the benefits of exceptional connectivity, alongside our local

businesses,” said councillor Ian Maher, Liverpool City Region Combined Authority Portfolio Holder for Digital Connectivity and Inclusion.

LCR Connect is on track to be completed this year. It is designed to underpin economic growth, innovation, inward investment, and job creation. Experts estimate that with 100% gigabit-capable fibre coverage across the city region, the economic boost could be worth up to £1 billion, creating thousands of local job and training opportunities. ■

Top 5 emerging technologies impacting businesses

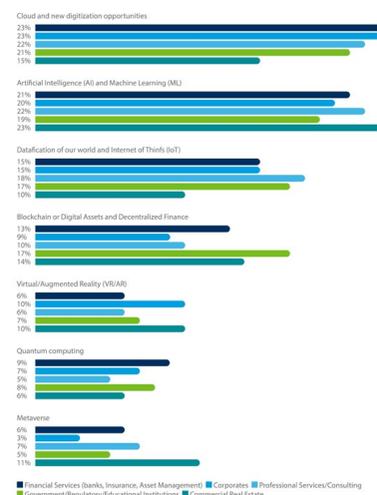
In a recent Moody’s Analytics innovation survey, 5900+ respondents from 91 countries across various industries were asked about the technologies they believe will have the most impact on their businesses in 2023 and beyond.

The results of the survey show that cloud, AI/ML, and datafication are the top three technologies customers believe will have the most impact, consistent across sectors. Meanwhile, decentralized finance, quantum computing, and VR were identified as technologies that are further out in the time horizon but are still seen as important and impactful in the coming years.

Cloud migration remains a key priority for most companies, with predictions that 80% of IT hosting will be allocated to the cloud. According to Statista, this share reached 30% in 2015 and has expanded year-on-year as companies increasingly shift their resources into cloud environments to improve security and reliability along with advance business agility. The continued growth of access to data and interest in generative AI is driving the compound annual growth rate of the AI market, predicted to grow around 20% yearly. Of course, AI and machine learning (ML) are not panaceas, but those technologies are no longer only the domain of data scientists and rather increasingly embedded within a wide range of processes throughout an organization. On the other hand, quantum computing is expected to grow annually by 30% with an emphasis on cybersecurity, optimization, and training

on quantum finance.

Blockchain and VR/Quantum/Metaverse were identified as the fourth and fifth most impactful technologies, respectively. The metaverse is less impactful across sectors, but scores higher for commercial real estate with the potential for new ways of remote working, customer engagement, and even corporate events. Blockchain was specifically mentioned in the context of product sourcing, and according to a report from Moody’s Investor Services, expanding blockchain technology development brings new revenue streams for software and technology companies and first-mover industry leaders, which also helps some companies diversify revenue sources by selling blockchain authenticated digital products. ■



C3R project appoints Telent for telecommunications

One of the largest re-signalling schemes undertaken in the UK, the Cambridge Re-signalling project, will be supported by Telent for its telecommunication needs.

The project will improve the reliability of the infrastructure and will provide more certainty of trains running on time. Similarly, the reduced need for maintenance will lead to reduced costs of running the railway.

Telent’s customer, Alstom, was awarded a contract early in 2022 to replace the 40-year-old signalling system which covers 125 route miles in the Cambridge area. Telent’s selection as Alstom’s telecoms partner for Cambridge builds on its experience of working with Alstom to deploy its Smart Lock solution on the Paddington to Reading (P2R) project.

The Cambridge Re-signalling Relock Control project (C3R) will deliver state of the art signalling technology resulting in improved reliability and reduced maintenance, while providing a platform ready for digital technologies including the European Train Control System (ETCS).

A key part of the project will be the renewal of the telecommunications systems throughout the area, which is expected to take up to two years. Telent has been selected as Alstom’s telecoms partner, and will undertake the surveying, designing, installation and commission of the new telecommunications components.

“We’re proud to have been awarded this contract to work with Alstom on the C3R project. Telent has a good understanding of the technology used to update and maintain the telecom systems to ensure that they are efficient and reliable, and we look forward to being able to give the public more assurance that their trains will be running to time,” said MD of Telent Transport, Steve Dalton.

“We’re excited to see this project pan out over the next couple of years. It’s such a big-scale project which requires those with the best skills and knowledge of the technology to work with it, which is why we’re pleased to have Telent working with us,” said regional director Alstom, David Maddison. ■

EDITORIAL:

Editor: Amy Saunders
amys@kadiumpublishing.com
Designer: Ian Curtis
Sub-editor: Gerry Moynihan
Contributors: Ekim Maurer, Darron Antill, Duncan Swan, Paul Milburn, Ian Hirst, Alastair MacLeod, James Hodgson

ADVERTISING & PRODUCTION:

Sales: Kathy Moynihan
kathym@kadiumpublishing.com
Production: Karen Bailey
karenb@kadiumpublishing.com
Publishing director:
Kathy Moynihan
kathym@kadiumpublishing.com

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Rockwell Automation uses AI for water networks

Rockwell Automation is now working closely with Severn Trent and partners to provide artificial intelligence (AI) to automate and monitor entire waste catchments in the UK.

This is part of an industry-first trial launched in Derbyshire, Alfreton, which is trialling the AI until 2025 and aims to run indefinitely. The AI technology will predict weather conditions, forecast maintenance, and control waste flow to better manage its sewage network.

The project is part of the Ofwat Innovation Fund, which aims to grow the water sector's capacity to innovate, enabling it to better meet the evolving needs of customers, society, and the environment. Through this project, the delivery team will be developing a tried-and-tested blueprint for how this approach can be scaled across the UK.

The innovative AI technology will allow Severn Trent's network to operate more efficiently and predict and prevent issues before they occur – meaning fewer overflow activations, and better management of its network in storm conditions.

“This project has the potential to revolutionize how we manage our waste networks in the future, and it's truly exciting that innovation and technology are at the heart of it,” said Rich Walwyn, head of asset intelligence & innovation at Severn Trent.

The AI technology can forecast and get the network in prime condition. For example, when heavy rain is predicted, the network will automatically optimize storage ready for the extra flow and divert water away from overflows and hot spots, reducing the risk of flooding and pollution for customers. The technology will be deployed on Severn Trent's pumping stations, which will operate independently, using forecasting and monitors.

“This means our customers and environment are more protected, and we can better control the flow of the extra rainfall to the treatment works. The AI technology will help the network be forward thinking and prepare itself in the event of storm conditions,” said Walwyn.

“We are providing access and collaboration with specialist teams in the areas of network and cybersecurity, AI, and machine learning applications — along with our domain expertise within the information technology/operational technology (IT/OT) layer to bring about scalable solutions for all disciplines of the water industry,” said Phil Hadfield, business director, UK, at Rockwell Automation. ■



Neos Networks preferred bidder for Network Rail project

Neos Networks has been selected as preferred bidder for Network Rail's Project Reach, a major initiative launched by the railway company to enhance connectivity and create a safer, more modern, and digitally connected rail network.

As Network Rail's exclusive infrastructure provider, Neos will invest in the design and build of a new fibre optic communications network track side, that will deliver high-capacity connectivity nationwide to support the UK's digital future.

Network Rail aims to ensure coverage for up to 16,000km of high-capacity fibre next to the railway. The network will be used to carry information essential to running the railways, such as signalling for trains, trackside sensors, CCTV, and

high-speed broadband provision for trains, railway depots and offices. Neos will work in partnership with a tower company looking to leverage its 4G and 5G network infrastructure, with the objective of offering full end-to-end fixed and mobile connectivity to Network Rail.

This project will support Neos Networks in expanding its national network reach to increase UK coverage and improve access to high-capacity services. These services will be beneficial in transforming business operations for enterprises, hyperscalers and service providers, as well as mobile network operators looking to enable 4G and 5G connectivity along the rail corridor. The new network will also create opportunities to advance the rollout of fibre-to-the-premise connectivity across

Britain, improving infrastructure access for alternative network providers, while bridging the UK's digital divide and rural connectivity conundrum.

“This new network will deliver a step-change in connectivity and available capacity, which, in turn will help to transform UK rail for the passengers and neighbouring communities it serves,” said Colin Sempill, CEO at Neos Networks.

“This is an exciting opportunity for NR, and we are excited at the prospect of entering this long-term partnership. The proposal provides a comprehensive package that will deliver real benefits for passengers and the railway, and also significant savings for the UK taxpayer,” said Harriet Hepburn, Network Rail's corporate finance director. ■



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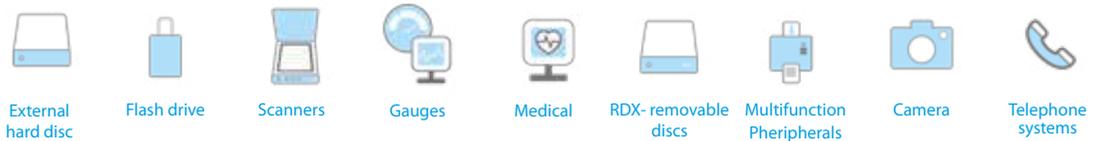
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Schneider Electric Brings the Data Centres of the Future to Life at DCW 2023!

Energy security, infrastructure resiliency and sustainability have become focal points for the data centre sector, and at Data Centre World 2023, stand D530, Schneider Electric will showcase its award-winning EcoStruxure for Data Centers™ solutions portfolio, combining connected products, apps, and analytics, to deliver a new vision for the data centres of the future.

Critical power and cooling.

Schneider Electric's dedicated critical power zone will feature its Galaxy™ VL and Easy UPS ranges of uninterruptible power supplies (UPS). Schneider Electric Galaxy UPS includes its patented eConversion technology as standard, offering a three-fold reduction in UPS electricity consumption and up-to 99% efficiency, without compromising availability.

Data centres at the edge

On its stand Schneider Electric has also created an edge computing zone, to showcase its edge infrastructure solutions alongside its Alliance Partners. This will include its EcoStruxure™ Micro Data Center's with Stratus ftServer for industrial manufacturing environments.

The power of DCIM 3.0

At Data Centre World Schneider Electric will demonstrate its award-winning data centre infrastructure management (DCIM) software capabilities, including its open and vendor agnostic EcoStruxure IT™ platform. EcoStruxure IT Expert goes beyond incident solving and prevention, providing advanced remote monitoring, wherever-you-go visibility and alarms, predictive maintenance, and data-driven recommendations to mitigate security and failure risks in data centres.

Empowering sustainability and efficiency

During Data Centre World 2023, Schneider Electric will share its sustainability, efficiency, and data centre services expertise in three different speaking sessions:

March 8 - 10:10am - 10:35am in the Design & Build Theatre. This will bring together leading data centre UK design and build consultancies to explore customer use cases within the defense, life sciences, healthcare, and enterprise sectors, and answer the question, 'How do we engineer the future of data centre efficiency?'

March 8 - 10:45am, Schneider Electric will deliver its first Keynote speech exploring the convergence of Electrification and Digitization, and how the company's vision for Electricity 4.0 will build the sustainable, resilient data centres of the future.

March 9 - 10:40am - 11:05am in the Keynote Theatre, the Services Business will look at the role of services in extending the lifecycle of your data centre.

Join us at Data Centre World 2023 to learn why Schneider Electric is your digital partner for data centre sustainability, efficiency, and resiliency during times of energy volatility.

IoT and edge deliver true ROI

The Eclipse Foundation has released its 2022 IoT and Edge Commercial Adoption Survey report, based on an online survey of more than 260 IoT and edge professionals. The survey's objective is to gain a better understanding of the IoT and edge computing ecosystems by identifying the requirements, priorities, and challenges faced by organizations that deploy and use commercial solutions, including those based on open source technologies.

"IoT and edge computing continued to accelerate in 2022 and into 2023 with no signs of slowing down, despite the current macroeconomic climate," said Mike Milinkovich, executive director of the Eclipse Foundation. "These trends suggest that IoT and edge are thought to be strategic investments that deliver true ROI. The open source model will only augment these benefits."

Nine of the top conclusions drawn from the survey data include:

- IoT technologies are being adopted at an accelerated rate. 53% of respondents currently deploy IoT solutions and an additional 24% plan to deploy within the next 12 to 24 months, while 18% are currently evaluating deployments.
- Edge computing adoption is on the rise. 53% of organizations are either utilizing or planning to utilize edge computing technologies within 12 months. Another 20% are currently evaluating the use of edge deployments.
- There is a shift towards higher investments into IoT & edge. 23% of respondents project spending between \$100,000 - \$1 million in

2022, growing to 33% in 2023. 10% anticipate spending over \$10 million and growing to 12% in 2023.

- There is a trend towards a larger number of IoT & edge assets managed per deployment. Deployments of fewer than 1,000 managed assets will remain steady or decline, while larger deployments are on the rise. In terms of asset implementation, 52% are a mix of both greenfield and brownfield.
- More organizations now see IoT and edge as strategic, with spending decisions being driven at the executive level 38% of the time. This increased by 3% compared to the year 2021.
- 73% of organizations factor open source into their deployment plans. This demonstrates that the dominant IoT & edge platforms will either be open source or based on open source. Only 27% of organizations using IoT and edge technologies state they do not use open source technologies.
- The primary benefits of using open source according to respondents include: the ability to customize or influence code in projects (30%); flexibility (22%); as well as cost advantages (16%).
- The top three IoT and edge operational challenges are: connectivity; security; and data collection & analytics.
- There is a trend towards a hybrid cloud strategy. 42% of respondents suggest that IoT deployments are using, or will use a hybrid cloud. ■

Scality named as launch partner for Veeam SOSAPI

Scality has been selected as an inaugural launch partner for the Veeam® Smart Object Storage API (SOSAPI) integration as part of the new Veeam Data Platform to improve storage data flow and consumption reporting. In addition, Scality has been integrated into data immutability processing with Veeam's new direct-to-object storage capabilities.

Scality is one of the first vendors supporting Veeam's newest capabilities at launch: direct-to-object storage and SOSAPI. The collaboration provides ransomware protection, data immutability and operational efficiencies without sacrificing flexibility or performance. Scality object storage helps Veeam's upgraded approach to the industry standard 3-2-1 backup rule by simplifying the architecture for data protection. As a Veeam partner providing a single-vendor, multi-tier backup architecture, Scality gives IT leaders the flexibility to optimise for any required storage tier (performance, capacity, or long-term retention).

"Veeam is pushing the envelope to make backups incredibly simple, fast and reliable for customers," said Paul Speciale, chief marketing officer, Scality. "Scality has worked closely with Veeam to be one of the first software-defined object storage vendors to support the new Veeam Data Platform. We help customers further simplify backup management with a single-vendor backup storage solution that complies with Veeam's recommended architecture and offers unbreakable immutability at each backup tier." ■

36% of UK CDOs lack understanding of data estates

Informatica reports that more than a third (36%) of UK chief data officers (CDOs) lack a complete view and understanding of their data estates.

For the 'CDO Insights 2023: how to empower data-led business resiliency' report, some 86 CDOs and chief data & analytics Officers in the UK were surveyed. More than half (57%) believe there are more than 1,000 sources of data in their organisation and predict data sources will continue to grow due to analytics (92%), cloud (88%) and business applications (87%). However, 31% say this increasing volume and variety of data is one of the main obstacles to achieving their organisation's data strategy.

As CDOs focus on optimising supply chains (42%), strengthening the customer experience (40%), enhancing collaboration (39%) and improving business agility (38%) in the year ahead, data sharing and data governance have emerged as top priorities for data strategies. Nearly half (49%) of UK CDOs rank the effective sharing, democratisation, and use of data as a chief priority, alongside improving governance over data and data processes (48%).

Reflecting these priorities, CDOs cite the following as top areas for investment in 2023 as data quality capabilities (52%); data protection (45%); data marketplaces (42%). ■

Motorola Airwave TETRA case – decision delayed until March

Competition and Markets Authority (CMA) delays until March its final decision on Motorola Solutions' Airwave TETRA network pricing.

In its provisional decision in October, the CMA proposed pricing regulations that would cut some \$1 billion from the Airwave revenue that Motorola Solutions would receive under the current four-year contract that was signed in 2021 with the UK Home Office.

The CMA has determined that Motorola Solutions has been realizing 'supernormal' profits from its Airwave contract extensions with the Home Office. To correct, CMA's provisional decision

proposes limiting Motorola Solutions' annual revenue from Airwave to less than £200 million, less than half of the £433.5 million in revenue that Airwave reported in 2020.

"We remain unchanged in our finding and belief that with full conviction that their (CMA officials') effort is disproportionate, it's unprecedented, it's overreaching," said Motorola Solutions CEO Greg Brown. He previously said that Motorola Solutions is prepared to "exhaust every legal opportunity or avenue in front of us to defend the position," if the company disagrees with the outcome of the CMA investigation. ■

Word on the web...

How to pick the best enterprise IoT security solution

Darron Antill, CEO,
Device Authority

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Edge: just because you can, doesn't mean that you must

Ekim Maurer, director of product management, NS1

No company wants to be seen to be falling behind its competitors or peers when it comes to keeping up with technology trends. Migrating to the cloud is a case in point. According to Gartner, 51% of IT spending across the application software, infrastructure software, business process services and system infrastructure markets will have moved to the public cloud by 2025, a rise of 10% compared to 2022. But how many of them had a solid use case for moving?

Undoubtedly many organisations that migrated in the past decade found themselves paying extra without realising any significant improvements. This could also be the outcome for companies that join the race to transition to edge computing and edge networking.

It makes sense, therefore, to assess whether the company has a clear use case for moving to the edge and this starts by considering how the business operates.

Assessing your fit for edge computing: four considerations

How are your policies managed?

The edge decouples the creation and execution of policies, unlike in data centres and the cloud. This means that edge supports use cases where policies are centrally managed, and the central authority dispatches them to multiple edge sites where they can be performed in a way that is controlled and determined by the context. A good example of this is franchise businesses where the central authority controls the policy, and each franchisee operates within their own individual edge location.

Do you operate remotely and with autonomy?

Some of the best edge use cases involve operations that sustain themselves even without a connection to the central infrastructure. If it is necessary for a business to send its data to a central repository for storage and processing, or even to make decisions for the edge, it will not make best use of an edge deployment. This means that while edge works well for manufacturers, it might not be such a good fit for retailers, for example, with centrally embedded protocols and mobile apps that depend on central servers.

Will you need to issue more than one set of instructions?

The efficiency of the edge lies in being able to instruct it once. If a company's use case means that there are distinct edges – separate areas of operation without a data exchange or different security levels that impact edge communication – and they each need separate instructions, there is nothing to be gained by moving to an edge model.

What about data streaming and backhaul costs?

If the costs of streaming data and backhaul are currently tied to shifting away from the edge, moving processes to the edge will help to lower costs. If backhaul is not a significant cost, the argument for moving is less compelling.

Moving ahead on the edge

Making these considerations will determine whether a business has a good use case for the edge, and for those who do have a valid use case, a move to the edge is the next logical step in a company's digital transformation journey. To move ahead, a few logistical hurdles must first be jumped, and this begins with making an argument to key stakeholders.

Edge is an expansion of where the business' compute can reside without losing control. This is important to convey to stakeholders who will likely understand the similarities with cloud.

Communication is essential for supporting edge deployments and decisions will need to be made in advance about how issues are dealt with should they arise. Someone must take responsibility for communicating if there is a problem, and there should be a clear chain of command for resolving it. Should backhaul support be required centrally, the IT department must be given the power to manage the issue quickly and efficiently. It is not necessary for them to understand, or even know, the analytics for every device, but they must be able to see those that are not functioning. Methods for pinpointing the data that is needed will not only save time but

will cut down on backhaul costs too.

Preparing for an edge deployment means reviewing three specific areas of the business to determine readiness. Firstly, the exposure layer shows how people connect to the network, for example through DNS. Secondly, there are the technologies that connect the different infrastructure components, including VPNs and Anycast. And thirdly, teams should ensure there is the central source of inventory for a company's infrastructure. To have a clear picture of these three layers of the network is as essential as creating effective policies when it comes to making a move to the edge work.

If your use case fits, edge is a worthwhile move to make

An enterprise should have a very clear idea of why it wants to move to the edge and a comprehensive plan for doing so. If the due diligence shows that it will reduce backhaul costs and streamline the logistics of implementing a central policy for each edge location, organisations will benefit, but additionally, edge is likely to deliver a better user experience. Together these factors make it a valuable transition. ■

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Massive IoT enables massive opportunities for utilities



Massive IoT, or massive Machine-Type Communications (mMTC), is already impacting multiple industries. From fleet management to environmental monitoring and smart grid management, to smart buildings and entire smart cities, mMTC can transform businesses. Given its obvious applications to the utilities sector, is the industry harnessing the full value of these opportunities? Alastair MacLeod, CEO at Ground Control, examines the answers

Massive IoT or mMTC is all around us. We live in a vast connected ecosystem of data-gathering applications that draw on comparatively low levels of data at their source but which when aggregated by the application vendor or, for example, utility company, is simply enormous. Think smart thermostats, alarm and access control systems for the home, smart bulbs, smart meters – you see where this is going.

Massive IoT is an information system that uses cloud and edge computing, big data, and AI to make huge amounts of data more accessible for individuals as well as for businesses, and not least energy and utilities. mMTC-enabled sensors allow for remote monitoring, maintenance, and assessment of data across a wide range of applications, including smart grids, water plants, substations, and much more.

The sheer volume of devices involved in mMTC and their respective networks place ever greater demand on the network coverage, battery life, and device cost, as well as the cost and resilience of the connectivity itself. Many of these devices are communicating through cellular – 4G and now 5G - networks and are reliant upon long-life batteries.

At the same time, we are experiencing an 'energy trilemma' – the inherent tension between energy affordability, energy security and the environmental impact of most of the energy consumed on the grid. A perfect storm perhaps, but advancements in technology have a history of providing the solutions we need.

A report by the International Energy Agency expects global energy demand to increase by 37% by 2040 and in a world that's so connected, mMTC can be the catalyst for ensuring utilities are more efficient, not least through periods of geopolitical unrest and instability.

The benefits

There are countless benefits. Remote monitoring in smart grids reduces human error and lost time in manual visits and processes, which can have a huge impact on operational efficiency and the bottom line. Likewise, predictive maintenance allows utilities to forecast when equipment may fail, so servicing can be carried out to avoid costly downtime. And for smart meters, data is collected, sent, and evaluated in real-time by the utility company, rather than once the energy is consumed.

All this allows utilities to provide real-time alerts around meter, grid damage or outages and adjust pricing and supply based on data insights if necessary. It can aid the monitoring and control power quality and increase energy savings for the customer and install software updates, again in real-time.

The challenges

With the ever-greater adoption of mMTC inevitably comes several challenges. On the one hand there is capital outlay for utilities operators, not least the modernisation or installation of new of hardware. However,



much of the legacy hardware doesn't need to be changed immediately. Furthermore, while battery-life tends to be very long, the cost to replace millions of batteries in the field for many utilities may not seem a viable option.

Ultimately, this highlights a scalability challenge for mMTC programmes within the utilities sector. The ability to quickly adapt to surges, peaks, and troughs with the transfer of data, and of course, the accessibility of that data where connectivity indoors may be an issue - with many smart meters being housed in less accessible areas, such as a basement.

And of course, there's data security to be considered. With utilities needing to ensure that the very minimum of customer data is required for the tasks at hand, and secure from the reach of hostile parties.

constantly monitor and transmit key parameters such as temperature and fluid levels. Using LoRaWAN utilities can implement preventive maintenance, offering greater value for their customers whilst reducing operational costs and strengthening the customer relationship.

However, it is estimated that only 10% of the Earth is supported by cellular, whereas as Iridium's satellite network covers 100%. Automating control across the entire network is enabling companies to respond rapidly to outages, fluctuations, and peaks in demand. Clearly, none of this is possible without reliable data and failsafe connectivity.

Meanwhile, mMTC via satellite is helping utilities workers in the field, where lone operators are constantly visiting remote areas outside normal cellular coverage.

As utilities and their customers navigate the energy trilemma, it's vital that mMTC is not only helping the customer to be efficient with their energy consumption but that providers are able to ensure that both the grid and smart meters are delivering the data required to manage peaks and troughs in demand without costly downtime. Given the wide geographical footprint across which utilities need to operate, satellite is becoming increasingly key.

In sum, mMTC is providing utilities with the real-time information they require while the grids of tomorrow will become even more connected as infrastructure. Satellite communications will be pivotal to this now and in the future, because without a connection, nothing is smart. ■



Plugging the gaps with satellite

To combat some of these challenges and simply, gaps, suppliers need to ensure ubiquitous and seamless connectivity, from the grid or smart meter back to the provider.

Low power wide area networks (LoRaWAN), that connect devices wirelessly to their host network, help solve many of the needs of massive IoT in transmitting sensor data to a central gateway, and then forwarding these data packets as raw or processed data using satellite or cellular as WAN data backhaul. LoRaWAN is very cost effective and enables utilities to embed arrays of monitoring sensors and instrumentation into their assets to

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Operating on the edge

Edge computing is booming in popularity thanks to the benefits of processing data closer to the source. But what should enterprises consider before embarking on an edge computing journey? Amy Saunders finds out

Data generation expanding exponentially, necessitating new paradigms in processing, analysis, transmission, and storage. As per Statista, 64.2Zb of data were produced in 2020 – this is expected to reach 180Zb by 2025. Transporting this data via an increasingly congested internet has become a questionable proposition.

Why move to the edge?

Edge computing brings enterprise applications closer to the data source, delivering significant benefits for organisations like better bandwidth availability; reduced latency; improved response times; real-time data analysis and faster decision-making; reduced storage needs; cost savings; and removal of useless data.

“You can think of edge computing as a future ready platform to unlock insights in legacy systems, with the ability to deliver significant cost savings against physical infrastructure,” says Darren Parkes, country practice leader - network & edge, Kyndryl.

With edge computing, enterprises can process data where it is collected, or nearby, “rather than at a DC that might be several time zones away or a centralised cloud, which can often result in performance issues and network delays,” says Mark Crowne, director, Nexer Insight UK. “It also enables personally identifiable information in scenarios including faces to be processed locally by AI/ML, and not be stored in the public cloud, easing compliance with GDPR and similar regulations.”

According to Frank de Jong, program director of Edge, Orange Business Services, edge computing comes with four main benefits, although the first – latency – doesn’t really apply in Europe, since “the latency here is already relatively low as our countries and networks are smaller.”

The second is gaining the benefits of

cloud technology for an on-site location to comply with regulatory requirements and keep intellectual property secure. The third is the cost savings from reducing data volumes which could be processed at the edge. “The fourth benefit is continuity,” finishes de Jong. “In an all-cloud world, network failure can put a business in jeopardy, but with edge computing on site, you can at least keep running for a certain amount of time.”

Compared with just 1% of large businesses in 2019, Gartner predicts that more than half of global enterprises will have adopted at least six edge computing use cases this year. Additionally, 75% of data will be processed outside of the DC or cloud by 2025.

However, enterprises must consider whether edge migration is necessary, reports de Jong: “it’s crucial to take a solutions approach to challenges and sometimes edge computing is the answer or a part of the answer. The question shouldn’t be ‘do I need edge?’ but ‘what can edge do for me that I should need it?’”

Preparing for edge

“Before embarking on an edge computing journey, from a strategic planning perspective, enterprises need to prepare to shift from a ‘cloud-first’ to a ‘data-first’ approach — moving infrastructure closer to the data rather than vice versa,” claims Elliott Young, CTO, Dell Technologies UK.

It is also vital that enterprises consider their technical skillset. “Edge deployments come with entirely different considerations compared to a traditional DC. For example, around space, density, power, management, connectivity, and redundancy,” says Young.

Enterprises must consider the outcome desired in the wider context, says Parkes: “businesses must not fall into the traps of old, such as disparate systems, lack of interoperability, shadow IT, and building



The future is hybrid (and secure as ever)

to the pace of a credit card limit akin to the early and organic days of cloud adoption, rather than what’s sensible and needed.”

Increasingly sophisticated networks “challenge DC and IT teams’ ability to manage local operations effectively because of network sprawl,” says Martin Ryder, channel sales director, Northern Europe, Vertiv. “Those responsible will be remotely monitoring and managing a wide array of equipment, which could cause them to lose visibility into, and control over, a growing edge site presence.”

One of the biggest challenges is ensuring that the network infrastructure is fast and reliable enough to handle the data traffic and processing requirements. Steve Wilcockson, head of product development at KX, says that enterprises must also identify how the devices communicate with their system: “this might be through direct command and control from core to edge with the edge system subservient to the core orchestrator. Alternatively, ‘locally autonomous’ edge devices can heavy-lift critical functions and hand off to core when compute capacity or aggregate services are needed. In specific use cases, tasks can be divvied up at appropriate network layers - at the edge, near the edge, and at the enterprise cloud core.”

Everything at the edge is different from the controlled environments of traditional DC architectures, says Young. “Being able to deliver secure access and manage service levels with a new remote workforce has been a challenge for IT staff. To overcome these challenges, vendors must partner with IT providers to build an autonomous infrastructure in compute storage and networking to help manage operations across multiple environments.”

Infrastructure was also highlighted as a key concern by Ryder, who says “enterprises should consider that those embarking on an edge computing journey will also take responsibility for the availability of the edge service.”

Edge computing is expected to resolve a myriad of networking needs, finding use in many industries with exponentially growing data production, like healthcare, education, and retail.

Security, at least, is not expected to be one of the key challenges: “security at the edge is not so different from security in the cloud,” says de Jong. In fact, reports Ryder, some enterprises see edge computing as a key enabler to overcoming data security and reliability challenges: “large clusters of DCs could become prime targets for attack. By splitting up the core into multiple edge sites, although it may cost more per kW, it eliminates the threat of simultaneous denial of service.”

Wilcockson opines that the key is to know where there are sensitive gateways and endpoints and ensure appropriate security processes: “while embedded/edge systems normally hold fewer risks than cloud protocols, they can often be overlooked.”

Far from harbouring the beginning of the end for cloud computing, the data explosion will necessitate a hybrid edge-cloud future: “edge computing is suited for highly time sensitive applications, while cloud computing is more appropriate for handling large-scale data processing and storage, meaning the two approaches, currently, complement one another,” says Crowne.

“Smaller repositories of data within the enterprise will be essential in making efficient use of traffic management,” agrees Ryder. “Edge sites will help underpin effective implementation of cloud and the security of emerging use cases, but they aren’t a substitute for the sheer amount of storage capacity and computing power available in larger centralised DCs.” ■



Securing critical infrastructure through trend monitoring and analysis



Ian Hirst, partner, Cyber Threat Services, Gemserv

Core industries such as manufacturing and healthcare are popular targets for cyber attackers. Almost two in five Industrial Control Systems (ICS) globally were targeted by cyber attackers in 2021, made easier by the fact that the number of vulnerabilities discovered in ICS networks has risen by 110% over the past four years.

The recent ransomware attack on South Staffordshire Water was just one more example of this trend. And, by illustrating the potential harm that such cyber-attacks can represent, it clearly highlights the vital need for companies to bolster their cyber defences.

Another example of a ransomware attack

The cyber-attack carried out on South Staffordshire Water in August was conducted by the ransomware group known as CIOp. Known for using the ransomware tool Cobalt Strike in its campaigns, the group will typically encrypt files on its victims' IT networks, rendering their systems unusable until a sizable ransom is paid.

In the case of South Staffordshire Water, however, CIOp chose not to encrypt the company's files, and instead issued a demand for payment to prevent the release of stolen identification documents. Perhaps more

worrying, it also claimed to be able to access the company's SCADA (supervisory control and data acquisition) system, the software used to manage its industrial processes. In doing so, it boasted that it would be possible to change the chemical composition of the water, making it unsafe for consumption.

Regardless of its outcome – fortunately, CIOp said it wasn't interested in causing harm to anyone – the attack was targeted at a crucial time for the water company, with the country facing a possible drought due to the unusually hot weather. It's important to remember, though, that this was just the latest example in a long line of attacks on core industries.

Indeed, the methods and techniques needed to conduct a cyber-attack such as that carried out on South Staffordshire Water are more readily available than ever before, and ransomware attacks continue to be the most likely cyber-attack to hit an organisation. In the US alone, the number of reported ransomware incidents increased by 62% between 2020 and 2021. Businesses must therefore ensure their security posture is equipped to deal with this ongoing and evolving threat.

Identifying and prioritising threats

Increasing and updating cyber security controls, defences, policies, and staff awareness are all

important elements of protecting a business and its data. But to ensure these elements can keep up with the changes happening in the fast-paced threat landscape, they need to be based on actionable intelligence. By resting on its laurels and not staying abreast of the current trends and threats, a business could find itself open to threats such as ransomware and cyber extortion. And, as we've seen, in the case of critical national infrastructure, such a threat could do more than harm a company's reputation and bottom line – it could represent a risk to people's lives.

Technology is available that can monitor social platforms and public forums to track, identify, and escalate growing threats to an organisation, its customers, and its supply chains. By using advanced always-on analytics, organisations are alerted to any potential threats as they build – giving them the opportunity to prepare for and mitigate against them.

Some organisations are so high-profile, they can face multiple threats, operating in different geographies or as part of separate groups, and often targeting different individuals or premises. Threats of this scope and complexity require the use of technology that can help the likes of cyber principals, and risk and legal teams identify and subsequently prioritise the most pertinent threats, escalating

them appropriately.

Teams can then notify their leadership, whether they feel the organisation itself is under threat, or that a particular individual is being directly targeted; advance notification that could prevent an individual clicking on a spear phishing email and compromising their company's systems.

Valuable technology

Fortunately, no one was physically harmed by the attack on South Staffordshire Water. But, with the incident hitting the headlines across the country, the same can't be said for the company's reputation. As well as notifying its leaders and customers of risks and, by escalating them where necessary, preventing potential cyber-attacks, technology such as monitoring and analytics can safeguard the reputation of an organisation.

The value of this technology to critical national infrastructure is considerably higher, of course. Just because no one was harmed in this incident, doesn't mean the possibility doesn't exist. With attacks on industrial control systems continuing to rise, automating the process of monitoring and analysing trends won't only save a business's reputation and share price, it could even save something significantly more important – people's lives. ■

TMC Technology for Data Centres: the key to phenomenal growth



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Flexible working – bane or boon?

Working from home (WFH) has become mainstream with the onset of the COVID-19 pandemic. However, opinions on its ongoing adoption in a post-pandemic world remain in stark contrast for enterprises and employees, reports Amy Saunders

As of December 2022, new government legislation allows employees to request flexible working from day one. According to research from VMware, 82% of global employees with flexible working have higher job satisfaction and 53% report increased morale and creativity. Flexible working also creates a more diverse working environment and workforce, which leads to improved financial returns.

“Giving staff more say over their working pattern makes for happier employees and more productive businesses. Put simply, it’s a no-brainer,” said minister for Small Business Kevin Hollinrake. “Greater flexibility over where, when, and how people work is an integral part of our plan to make the UK the best place in the world to work.”

What’s in it for the enterprise?

Remote working has long held the reputation of being a dross, with employees enjoying down time around the occasional email, a mindset perfectly exemplified by Elon Musk who in June 2022 demanded Tesla employees return to the office or “pretend to work elsewhere.”

This is backed up by VMware’s survey which revealed that 66% of employers believe anywhere working harms innovation, even though just 38% of enterprises have formal metrics in place to measure impact on innovation.

However, the dialogue has changed following the COVID-19 lockdowns when it was discovered that many workloads could be completed adequately from home. Now, “for many employees, flexible working has changed from a desirable practice to an expectation, meaning employers must accommodate these needs if they are to attract and retain top talent,” says Hendrik Witt, chief product officer, TeamViewer.

Flexible working delivers clear benefits for employees, but there are also incentives for enterprises including “improved staff well-being, reduced overhead costs, increased productivity, lower absenteeism, and more efficient allocation of labour,” outlines Alan Hayward, sales & marketing manager, SEH Technology.

Witt concurs: “if organisations can implement the right networking capabilities and embed solutions such as remote support and connectivity, then employees will feel empowered to do their jobs wherever they are located. This will have a knock-on impact for an enterprise’s performance.”

However, hybrid working will only succeed if staff are committed, engaged and able to collaborate effectively, wherever they are located. “This is far from inevitable if IT attempts to impose a solution on the workforce that simply doesn’t work as well as any shadow IT alternative that may be used,” says Jason

Barker, SVP EMEA & APAC, IR. “Clearly it is essential that everyone uses the UC solutions that are purchased, implemented and run by the corporate IT team – and that the infrastructure is secure, compliant and well managed.”

Remote and hybrid working can bring many benefits to businesses, especially in terms of attracting top talent. “It removes geographical restrictions when recruiting new talent, enabling companies to tap into larger candidate pools and creating a culturally diverse workforce,” says Hayward.

The demand for remote working can be a deciding factor for many candidates looking for new jobs. Research shows that a lack of flexibility stops people from even applying for roles, impacting businesses’ ability to find and hire the right people, says Hayward: “additionally, with more employees working flexibly, businesses have a greater opportunity to fix their skills gap with a wider range of people from different backgrounds bringing specialist digital skills.”

“With the UK still suffering a significant lack of skills – access to labour (75%) and skills (72%) continue to top business’ labour market concerns, according to the CBI – the hybrid working experience is fast becoming a critical component in employee engagement and retention,” confirmed Barker.

suffered a cybersecurity incident related to remote working.

“Despite organisations already having a cybersecurity strategy in place, transitioning to a hybrid working model significantly changes the risks and needs of a company’s network,” observes Witt. “Organisations must ensure their networks are agile and secure enough for dealing with a dispersed workforce, where employees will be working in different kinds of environments and be susceptible to a more diverse range of vulnerabilities.”

Remote working can heighten the risk of data breaches or other cybersecurity attacks, with the potential attack surface that needs

The Hornetsecurity study found that the main sources of cybersecurity incidents were compromised endpoints (28%) and compromised credentials (28%). In addition, 15% said that employees use their own devices with some endpoint configuration for remote work. Endpoint security is not a top priority for most employees, however, when transferring data to devices that are not owned or protected by an organisation, IT leaders must ensure that endpoint security strategies are in place.

“Some are turning to simple centralised endpoint management and control systems



Securing networks and endpoints

With significant proportions of employees now WFH, data security is one of the biggest concerns.

Hornetsecurity says that 33% of companies are not providing cybersecurity awareness training to users who work remotely, and that 74% of remote staff have access to critical data. Moreover, 14% of respondents said their organisation had

to be protected growing at an exponential rate, reports Hayward: “cybercriminals have been taking advantage of the shift to remote and hybrid working environments by exploiting known vulnerabilities.”

“Hybrid work has blurred the lines between work and personal lives which, in turn, has changed how we use our devices. Back in 2021, HP found that 50% of employees use their work devices for private purposes and 27% let others use their work device. This poses a unique IT challenge,” added Witt.

that are helpful in streamlining the remote working model,” reports Hayward. “This also helps them monitor and have visibility over the number of unmanaged endpoints that are connected to the enterprise network and the actions that need to be taken to reduce cybersecurity risks.”

Educating end users is central to ensuring endpoint security, says Witt. There are measures enterprises can implement to limit the possibility and severeness of incidents: “designated access rights as well as clear role assignments and conditional access measures are mandatory to keep access to relevant resources limited to only the required users. Adding multi factor authentication as well as encryption of the connection to the mix creates multi-layered security framework.”

The networks themselves must also be well-considered, flexible, and secure, Hayward explains: “IT leaders need to consider a secure WAN approach to effectively protect the growing number of connected devices within the remote or hybrid working environment. SD-WAN is a popular choice as it connects users to multi-cloud applications, improves performance and offers greater scalability. It uses various services including MPLS, LTE,

broadband, internet, cellular and satellite, to move large amounts of data across the network. This helps businesses to reduce network costs, improve resiliency and better manage the application across the business, without compromising security.”

The hybrid experience should be seamless, especially as employees return to the office for a few days each week, reports Barker. “While IT teams routinely monitor UC performance across the organisation, information is collected on each individual system. With 10,000s, even 100,000s of employees using multiple solutions, it is impossible to gain an accurate and complete picture of system usage or performance. Furthermore, this monitoring rarely extends outside the core office environment, leaving the business completely blind to the work-from-home experience. From calls dropping out when children return from school and plug into games and streaming services, to a widespread resistance to adopting the new corporate UC standard, a lack of visibility across the entire hybrid environment is creating significant business risk.”

A single view of the entire UC environment is required to both accelerate problem resolution and better understand the hybrid employee experience, according to Barker. “Understanding how, when and where individuals are using different aspects of the UC solution set will provide companies with new insight into the way staff are adapting to the hybrid experience – and quickly flag up potential problems.”

Social isolation? Not with the metaverse...

With the first COVID-19 lockdowns a significant proportion of the population suffered with social isolation, even those



living with friends, families. In the absence of wider human contact, stress, anxiety, and depression are extremely common, with an obvious impact on work output.

“Reduced staff interaction, collaboration, engagement, and connection are some of the negative impacts, which can significantly affect working culture and lead to productivity losses,” warns Hayward. “Therefore, it is important for companies to utilise technology to replicate in-person interactions to ensure employees do not feel disconnected from their work organisation.”

Duncan Roberts, senior manager, Cognizant, concurs: “working from home has become a norm for many companies since the pandemic struck. However, it does pose its problems, such as decreased social interaction which makes it more difficult for workers to connect with their colleagues and work collaboratively.”

Highlighted as one of the top trends to watch in our January issue ‘2023 – a year of digital transformation’, the metaverse is being lauded by some as key to the future of remote working. “The metaverse could play a large role in reducing these (social isolation) problems, with companies being able to support their staff remotely with virtual training and social interaction,” explains Roberts.

“The metaverse is predicted to solve some of the most challenging problems associated with remote and hybrid working environments,” agrees Hayward. “With colleagues located across the globe, they are able to come together and interact in the metaverse, reading and responding to colleagues’ expressions and body language.”

Witt also believes that the metaverse will play a significant role in remote working as companies look to implement the right

technologies and infrastructure to support these practices: “whilst frontline workers are on-the-ground, the use of digital tools such as augmented (AR) and mixed reality (MR) create the basis for the industrial metaverse, as workers can use digital guides to support their frontline processes as well as fix machines and equipment. In turn, these technologies enable many employees such as technicians to take a remote or hybrid role.”

WFH – here to stay

With the new government legislation in full effect, WFH is here for the long-haul. As such, it’s up to each enterprise to ensure that its network is up to the task of supporting flexible, remote working while maintaining security – or risk losing the top talent to their forward-thinking competitors. ■

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Asda picks Veeam for mission critical systems

Asda has selected the Veeam Availability Suite to provide effective backup and restore for mission-critical systems. Following its divestiture from Walmart in early 2021, Asda has taken responsibility for protecting the large, virtualized infrastructure that underpins its business.

Asda's business model relies heavily on digital services – from point-of-sale systems and scan-as-you-shop devices in its 660 stores, to e-commerce and inventory management systems that power its online offering and home delivery – supported by its data centres and 30 depots. Its high-volume, low-margin operation means that even a few hours of downtime could lead to millions of pounds in missed sales opportunities.

Previously, a large team from Walmart managed individual backup jobs for 40 of its sites. Asda's move away from Walmart meant that it had to take responsibility for protecting its more than 2,000 hosts and 3,000 VMware virtual machines. The company chose to see this as an opportunity to redesign its technology platforms to make them lean, agile, and responsive to the future demands of the company, without raising costs.

With automation from Veeam Backup & Replication and central visibility from Veeam ONE, Veeam Availability Suite enables the company to deliver maximum protection for mission-critical systems

and opens the potential for a future move to modern data protection in the cloud.

"The scale of Asda's operation means that even a short period of downtime or small volume of lost data could be devastating to its bottom line," said Dan Middleton, vice president for the United Kingdom and Ireland at Veeam. "To protect against cyberthreats such as ransomware, which impacted 76% of UKI businesses over the past year, it's encouraging that Asda is using Veeam to create immutable backups, which prevent attackers from encrypting data after it has been written, and to identify failed or corrupted backups immediately."

Asda is also using self-service workflows to empower users to restore individual files themselves, which puts it above 70% of European businesses that rely on manual steps to resume during business continuity and disaster recovery processes.

"Being able to see all our backups through a single pane of glass with Veeam is a big advantage," said Mat Cox, senior server engineer at Asda. "We can now configure, run, and monitor backup jobs automatically, increasing data protection for Asda NewCo while keeping the IT team lean. Crucially, we think Veeam's support for self-service restores could cut IT support requests by more than half."

The Veeam solution currently backs up and replicates data between the company's primary and secondary data centres,



its head office and one of its depots. As Asda continues to deploy Veeam across its business, the company is confident that the solution offers the scalability and flexibility to support its long-term strategic goals.

"For tier-one systems, our recovery point objective [RPO] is under 24 hours and our recovery time objective [RTO] is under 30 minutes. With Veeam, we can hit those objectives with ease. We

recently tested our recovery capabilities, and it took us only 16 minutes to switch over to our secondary site with zero loss of data," concluded Cox. "We can also put powerful data restore capabilities in our employees' hands, which could help us cut IT helpdesk request volumes by over 50% and keep our IT headcount lean. Without a doubt, Veeam will make it easy to scale our backup environment as our data volumes grow." ■

Leading UK seafood supplier navigates a seamless S/4HANA migration with Absoft

The UK's leading seafood processor has worked with Absoft, an independent SAP consultancy, to support its SAP solutions since 2015. In 2021, the company turned to Absoft to upgrade its ageing, on-premises SAP ERP 6.0 EHP6 software - and migrate the systems to the Microsoft Azure cloud platform.

As part of the company's transition to the latest version of SAP S/4HANA, Absoft was responsible for implementing the upgrade for its primary business: specifically, food processing, ordering, production, and distribution. Additionally, the company's HR and payroll teams use a separate version of SAP ECC, which has been purposely kept separate for security reasons.

It was important for the seafood supplier to mitigate the risk of any system-based errors that may occur during its busiest period (July to December) in the run up to Christmas, meaning that Absoft had a five-month window within which to complete the upgrade. Therefore, it was crucial for Absoft to seamlessly navigate the business through both the software migration and the transition into the Azure cloud without affecting its seasonal deadlines and locking down its IT infrastructure so that no further changes could be made.

We're going to need a bigger boat

With increasing input costs, volatility and unpredictability in both the supply chain and consumer demand, as well as a growing desire for online accessibility and demonstrably sustainable practices, businesses must maintain efficient manufacturing processes and operations. Therefore, aside from supporting the company's technical landscape, Absoft had road mapped moving to SAP's latest software suite, S/4HANA, to maximise the customer's output. As part of this upgrade and to ensure a seamless user experience, it was essential that the in-house team understood and was comfortable with the nuances between the two software applications before the official migration to Azure was made.

Firstly, Absoft created a sandbox environment within the seafood supplier's existing system, in which a version of the S/4HANA system was installed, using the processes and solutions functionality to get the team used to it. Additionally, Absoft held in-house workshops with the team to familiarise users with the software, as well as using it as an opportunity to iron out any issues that may have occurred before the system was officially

upgraded to S/4HANA.

As a result of the workshops, the business determined that they wanted to embark on a 'Greenfield' implementation of S/4HANA, while leveraging the 'best of' their current EHP6 configuration and losing the 'worst of' the processes in the older version. By sandboxing the system, it gave the team a solid grounding of the scope of the implementation, as well as upskilling and educating them on the new technologies.

Additionally, an RPO (recovery point objective) of fifteen minutes was instituted as part of the implementation, as well as an Azure Site Recovery configuration that allowed the entire set of virtual machines to be replicated to another Azure region in case a full failover was required.

Hooked on S/4HANA

After the peak season ended and the company became familiar with S/4HANA within Azure, it was able to explore S/4HANA's additional functionality and unlock its more 'user-friendly' interface: Fiori.

Fiori allows new applications to easily be built in the SAP S/4HANA Cloud Platform, allowing organisations to expand functionality with new applications, while leveraging existing investments. Users are able to access the information they need to



do their jobs more quickly and easily with the new front-end interface. Furthermore, users can access key business information using touch-enabled devices.

With this, they chose not to deploy wall-to-wall Fiori immediately, but in stages. And, in 2021, Absoft worked closely with the company to identify which new Fiori apps would add most value to their day-to-day business processes and those were introduced first. Once again, Absoft used the sandbox method and switched on the Fiori apps that the business would most benefit from. This way, the team could get used to the app, upskill, and decide what they would use to continue their seamless production process.

Carp-e diem!

Absoft strives to continuously look ahead and create a roadmap for its customers, and so the next step in the journey will be to upgrade the company's HR and payroll system, which is currently still running on ECC. At present, there has not been a viable S/4HANA alternative to upgrade these systems to and so, unlocking benefits of a new HR and payroll system before their current solution expires in 2025, will be key. "Once again, Absoft has adapted quickly to cater to our customer's needs. With any leading food manufacturer, we had to adhere to a tight timeframe of five months to complete the initial migration and we were able to fulfil this using our expertise and bespoke customer service," said Don Valentine, commercial director, Absoft. "Looking ahead, we consider it our responsibility to ensure that the company will be able to optimise their SAP environment to maximise their business output, embrace the best working processes and minimise waste - in line with their strategic goals." ■



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Data – the new best friend for the emergency response community?



Duncan Swan, chief operating officer, British APCO

It was back in 1937 that the UK first introduced the single emergency number – 999. Ever since, our emergency services have been striving to provide the right resource to the right place at the right time. The digital age has brought key developments to help get those critical decisions correct – and to do this as quickly as possible – including:

- Advanced Mobile Location (AML)
- Mandated eCall based on 999/112 for all new cars since 31st March 2018
- Apple and Google innovation with mobile handsets and watches

The UK has a single primary PSAP (Public Safety Answering Point) which is provided by BT – and they have had to keep pace with these innovations and provide the means to pass the emergency data to the relevant receiving emergency service via Enhanced Information Service for Emergency Calls (EISEC). All our emergency services are signed up to EISEC and can access this data within a 30-minute time window from the emergency service being passed a 999 call.

So, everything is fine, and each emergency service is accessing the data from EISEC? Well, no, not always, the reasons why being multiple and complex and so this enhanced data is not always used to its best advantage. Add to this that use of 999 is evolving from a simple voice call and is coming under pressure to:

- Deal with new types and methods of making emergency calls
- Respond to evolving trends from the citizen, including data alerting
- Deal with increasing volumes of false and inappropriate calls
- Continue with expectations for high levels of service delivery and resilience.
- VIN Number which gives vehicle type, year of manufacture & manufacturing location
- Fuel type
- Previous two locations
- What caused the alert - manual or automatic activation
- How many seat belts are in use

Globally, we are now seeing deployment of next generation technology for emergency number usage – although the term next generation has a different connotation in each country, as well as different implementation trajectories.

For example, Canada has set the ambitious target to switch off their current 911 service that supports phone number, fixed address or mobile location information being available alongside the emergency call and be fully NG911 capable, supporting a richer set of digital information, by March 2025. Back in March 2022, three key Canadian network operators – Bell, SaskTel and Telnus – launched their NG911 platforms. Public safety agencies are now working to ensure they are ready to handle digital emergency calls.

Here in the UK, BT has migrated to a new 999 platform – essential given the ongoing digital switchover – allowing support for VoIP and, for mobile devices, the ability to use AML rather than rely on cell-based triangulation. The primary method of relaying information in the 999 system remains as voice, however data in its various guises could and should be playing a larger role.

The volume and types of emergency call data are increasing steadily as new devices

and data information become available. And then there are machine orientated emergency calls, made without human intervention. Recently we saw the introduction of the new Apple collision alert system on the iPhone 14 or paired Apple Watch; this is an automated function where no intervention is required to trigger the device to send an alert (although there is an option to cancel the alert by the user).

In the automotive world, eCall is now implemented in over 20% of cars on UK roads – and is rapidly increasing. Alongside educating the public on when to use the 999 system, there is an initiative from National Highways to use eCall on motorways as an appropriate method to notify the traffic control managers of a serious problem. eCall gives voice, location, direction of travel, and a wealth of other vehicle information so is an excellent tool to ensure emergency responders are prepared – be that from a manually initiated call or an automatic activation by the vehicle crash detection sensors.

All this presents a challenge for both BT and the emergency services in how they receive and handle the data from the device – and there is the question as to what data the BT call taker should access.

How does data help improve simply having voice communication in the 999 system? Often the caller has no idea exactly where they are; location data provided automatically by the device is highly accurate and available immediately. For eCall, additional data will include:

With all this data available are we making the best use of it? Possibly none of the emergency services is making the best use of the data available with a 999 call. There is no single reason for this but what is true is that emergency service call takers are under pressure like never before. 999 call data must be accessed from the EISEC system by the emergency service call taker rather than being automatically pushed. And there are over 150 control rooms with a variety of control systems (each offering differing levels of functionality) in use, which is part of the key to accessing EISEC data; not all systems have the same level of capability to pull the EISEC data and then process it as part of the incident data entry.

The world is changing. It is now more connected than ever; the 999 system and, it goes without saying, our emergency services need to keep pace with this change. Much is being driven by commerce so is unlikely to slow down. So how do our emergency services keep up? And, for sure, as the tech companies continue to evolve their products and applications rarely will they pause to think about the effect that the latest phone, application or widget might have on the “emergency response.” ■



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How to secure a DCIM strategy that's right for your enterprise

Paul Milburn, chief product officer, EkkoSense

Since the Data Centre Infrastructure Management (DCIM) proposition was first conceived over a decade ago, the concept has struggled. Generally, DCIM failed to deliver on its promises. In many cases, it turned out to be little more than a stronger Building Management System or an over-priced Asset Register. This has left many data center operations teams – and their CIOs and CFOs – to question their DCIM investment.

DCIM has turned out to be great as a concept but less good when it comes to practical deployment. While DCIM and traditional monitoring solutions can do a good job of tracking assets within a data centre and collecting historical data, they have proved less able when it comes to feeding this into analytics in a useful manner. A main focus on 'moment in time' data has also often proved inaccurate against real-time operating conditions. These legacy DCIM solutions do provide alerts when serious breaches occur, but they don't support ongoing optimisation to keep facilities operating efficiently. DCIM also typically demands significant management resources - largely because any analysis and interpretation must be carried out by specialist staff and can take months to action and commission.

However, the key downside to DCIM and traditional monitoring deployments is that there is no measurable ROI for data centre operations teams. Our research shows that less than 5% of all data centre operators currently measure what's happening at the rack level. This means that most operators are still unaware of their data centre's actual thermal performance and power consumption. And with 15% of cabinets in the average data centre currently operating outside of ASHRAE thermal performance standards, that's simply too high a risk to carry.

DCIM was meant to help address all this – enabling operations to simplify data centre management across entire estates. Unfortunately for many data centre teams their DCIM experience to date has seen the addition of more and more functionality quickly turn

DCIM into a resource-hungry distraction. At EkkoSense we believe strongly in the vision as originally set out but suggest that it's also now time for DCIM to embrace its even broader potential as a hybrid of best-in-class solutions that can integrate effectively with each other.

That's why it's important for organisations to think carefully when they set out on their DCIM journey – particularly if they're keen to avoid traditional IT asset management led DCIM and opt instead for a much broader, M&E-based capability. With innovation across key areas such as Machine Learning, AI, remote monitoring, analytics and more accessible user interfaces, there's a growing realisation that it's now possible to realize DCIM's potential at – looking beyond traditional monitoring and management and

“With innovation across key areas such as Machine Learning, AI, remote monitoring, analytics and more accessible user interfaces, there's a growing realisation that it's now possible to realize DCIM's potential at – looking beyond traditional monitoring and management and integrating effective components to create a more holistic DCIM that brings together both the IT and M&E spaces.”

integrating effective components to create a more holistic DCIM that brings together both the IT and M&E spaces.

To achieve this, it's important to follow several key guidelines. Here are five key factors that we believe are key to implementing a DCIM approach that's right for your organisation:

- Ensure light-touch deployment – over-complication in the early stages of your DCIM project can quickly impact adoption across the business. Opting for a light-touch deployment approach helps to accelerate your time to benefit

- Find a solution that's fast to install – effective DCIM requires much greater sensor coverage across IT and M&E, but they need to be quick and easy to install – you need to be up and running within weeks
- Don't be afraid of integration – any effective DCIM solution needs to capture as much granular data as possible with room to grow, so if your prospective DCIM vendor isn't convincing around integration then think twice!
- Aim to capture heartbeat M&D data in real-time – you can't begin to optimise your data centre performance unless

you can really see what's going on. Unless you're tracking data centre performance in real-time you won't be able to capture the insights needed to make informed decisions about what's really going on across your estate

- Set clear and measurable ROI targets for your DCIM project – key metrics that will help you secure ROI for your project include thermal risk removal, cooling energy consumption reduction, cutting CO2 emissions, and optimising capacity across your data centre environment

PRODUCTS

FNT's Data Center Infrastructure Management (DCIM) solution is a central resource management and optimization software for the data centre. It covers documentation, planning, and management of all data centre resources and facilities throughout their entire lifecycle.

Enterprises that use FNT's DCIM software can streamline processes and optimize utilization of building infrastructure (power, cooling, floorspace), IT infrastructure (networks, servers, storage), connectivity (cables, patches) and services (software, applications).

FNT's DCIM solution provides consistent, up-to-date, and easily accessible data that is vital for informed decisions on deployment of data centre infrastructure resources and capacities. It is a field-tested solution based on the powerful FNT Command Platform that delivers a comprehensive and integrated view of all data centre resources. From recording and monitoring live power consumption and temperature values to planning the entire data centre, FNT's DCIM software will keep the data centre operating with maximum efficiency.

The software comprises a single system of record for all data centre physical inventory, IT assets, and network resources that delivers full transparency into all system resources. All data is stored in an integrated data model that exposes it to planning processes and makes it available for analysis and reporting. Access to this data enables faster impact analysis, reduced fault repair times and reduces operating costs. FNT's DCIM solution also optimises capacities and resource usage, enhancing space, power, and cooling for on-premise, edge locations, colocation space, and distributed IT/network rooms.



PRODUCTS

Raritan's Power IQ® DCIM Monitoring Software enables data centre and facility managers to closely monitor and efficiently utilize their existing data centre power infrastructure.

Data centre health maps, power analytics, cooling charts, and reports alert the user to potential trouble, and help understand real-time power load, trends, and capacity at all levels of infrastructure. A configurable dashboard provides vendor agnostic views of power capacity, environmental health, and energy consumption.

The Power IQ® DCIM Monitoring

Software is a complete environment management solution that helps to identify potential trouble areas, save energy, and maintain a safe environment for IT equipment. With the software, users can understand what is drawing energy in the facility and find ways to save. Power IQ monitors and measures all the energy usage in your facility including building meters, UPSs, floor PDUs, RPPs, busways, rack PDU's, branch circuits, environment sensors, and IT devices.

Additional features include centralized rack PDU management; power usage

effectiveness (PUE) gauge and chart; vendor agnostic power control; real-time dashboards; smart rack view; floor map view; thresholds and alerts; cabinet inspector; and custom reports.



Nlyte's DCIM software allows the enterprise to monitor and automate the management of its entire compute infrastructure. This enables the maximisation of the value of individual assets, quick visualize space for new equipment, and improved operating efficiency.

Servers that are underused waste resources and cost more in the long-term. With Nlyte's dashboard, the user can track and monitor server utilization over time, helping track down underutilized servers that are driving costs up.

Nlyte's comprehensive data centre monitoring tool identifies specific underutilized servers and 'Ghost Servers' to raise utilization rate and improves capacity planning and space utilization from a single interface. With the DCIM software, the enterprise can constantly monitor system utilization at the global, location, and room levels to provide complete oversight, make more efficient use of existing hardware by balancing workloads and sending alerts when thresholds are exceeded, while forecasting on 'what-if' scenarios to assist with

planning and resource management. Combined with Nlyte Asset Optimizer, the DCIM tool can support reaching DCOI Server Utilization objectives.



The ABB Ability™ Data Center Automation offers control, monitoring and optimization for mission critical infrastructure, with mechanical (BMS), electrical (EPMS) and DCIM capabilities



in a single, industrial solution for on-premise and hybrid cloud environments. The solution comprises an integration and automation platform to enable transparency and interoperability for continuous optimization and high availability. ABB Ability™ Data Center Automation is an open, integratable platform that controls and allows data exchange and automation among systems, equipment, components, and applications.

ABB Ability™ Data Center Automation integrates data centre tool sets faster from IT, power, cooling and building systems, including uploading assets

into tracking tools. It allows the user to visualize and manage physical assets within a 'single pane' view of the entire data centre, including multiple sites. Real-time visibility includes both high level (aggregate) and low level (granular) views of the data centre infrastructure, including enterprise, floor plan, zone, system, and component views. Moreover, when combined with third-party optimization tools of your choice, capacity planning and management capabilities are extended. Finally, the software automates cooling and electrical systems for continuous optimization and improved uptime.

RACKWISE DCiM XTM provides the information required to make informed and critical decisions from within a centralized environment where facility engineering disciplines, IT engineering disciplines, and business management disciplines all converge within a common framework.

RACKWISE DCiM XTM provides an unlimited and unrestricted real-time monitoring capability for measuring critical information such as power, current, temperature and other elements from a broad range of devices including servers, switches, power equipment, smart power-strips, dedicated sensors, and other devices by leveraging industry standard communication protocols.

RACKWISE DCiM XTM accommodates existing investments and process improvements may be incorporated into the RACKWISE DCiM XTM solution, through the optional Certified Integration Connector which provides the codebase and baseline platform for all integrations to build upon. Rackwise can guarantee integration with any platform (from homegrown data system to commercial products) in the enterprise for automated information sharing between systems.

RACKWISE provides a variety of deployment options, including an annual subscription, software-as-a-service (SaaS), and turnkey installation, to enable the customer to choose the model that best suits their business needs and requirements.



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Please meet...

James Hodgson, chief financial officer, Opencast

Who was your hero when you were growing up?

As a York City fan and music-geek teenager of the mid-nineties, they were Jon McCarthy (one to Google!) and Noel Gallagher. I spent many an hour at City matches and playing in bands as a teenager and I'm incredibly grateful and proud of the friendship circles I've grown up with from this time. They shaped my world and for that I'll always have fond memories of that period in my life.

What was your big career break?

Two breaks come to mind, and they have bookended my career to date. The first being my acceptance on to an ACA training programme fresh out of university; I had the choice between a Big 4 route or smaller local audit firm with an intake of two students a year. I took the latter due to the breadth of work I would be exposed to and close mentorship of a fantastic team whilst studying. I still hold that experience dear to this day as I believe it shaped my outlook on the type of business I enjoy working for and the people I surround myself with. The second would be my current appointment as CFO at Opencast. Since meeting the founders, Mike and Charlie, and CEO Tom, I instantly felt at home in the organisation they have created and their vision for the future. I could not ask for a more inspirational and challenging environment in which to ply my trade.

What did you want to be when you were growing up?

A guitarist in a 70s rock band or an RAF fighter pilot! Given that I was a child of the 80s (and of limited musical talent) I quickly discounted the former and my eyesight was probably never going to allow me to be the next Top Gun. Since I embarked on a career in finance though I have never looked back, the ACA qualification opens so many doors and is an incredible platform from which to develop a career in finance.

What's the best piece of advice you've been given?

Early in my career I remember being advised to surround myself with people whose company I enjoy and that I respect both professionally and privately. This was a key factor in me taking the role I have today as we look to build a differentiated organisation with a strong collective purpose.

If you had to work in a different industry, which would you choose?

Unsurprisingly, probably music or sport! It's a difficult one as once your hobbies become your job then it can take away from the enjoyment. Having said that, I could see myself enjoying a role where I followed my favourite musicians and sports people around the globe!

The Rolling Stones or the Beatles?

Both! I'm a music nerd and so can't imagine a world without either. There was a short-lived supergroup containing John Lennon and Keith Richards called The Dirty Mac who did a great version of 'Yer Blues' – proof that there is a world where you don't have to choose!

What would you do with £1m?

Beyond helping a couple of causes which are very close to my heart, I have two young boys, so I'd probably put it into a holiday fund where we'd use our spare time to venture across the globe and buy a kitted-out campervan for travels closer to home! I'm really looking forward to them encountering a lot of the

cultures I've been fortunate enough to experience and embarking on lots of the trips on my 'to do' list for the first time together.

Where would you live if money was no object?

I'd probably speed up the renovations on my own house and be happy there for a good few years first! Beyond that, it would have to be somewhere near a spectacular coast with hot and dry summers, but close enough to some mountains for long walks and winter sports. Northumberland with better summers wouldn't be far off!

Which law would you most like to change?

Not so much a law, but I'd like to see a change in government policy around childcare provision and support for new parents returning to work. It is an area in which we trail more forward-thinking nations, with current policy counterproductive to individual career development and economic productivity. Under the current system, it can be financially unviable for many parents with young children to return to the workplace so I would like to see this changed to the benefit of parents and employers alike.

What is the greatest technology advancement in your lifetime?

Given the industry I work in, I would have to say the internet. It's incredible to think how quickly the world has changed because of the advance in digital technology; we've come a long way since my school days of there being one school computer! After a long week I often crave the simplicity of a life without connectivity, but I'm always in awe of the technology and grateful for how it has shaped my professional life. ■ ”

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