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Networking redefined

Unlocking growth with NaaS and expert guidance

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Staying ahead of threats

Organisations grapple with an expanded cyber-attack surface

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It's the most wonderful time of the year – for opportunistic cyber-attackers



Retailers beware: the latest research from Semperis reports that cyber attackers are targeting holidays and weekends to cause maximum disruption.

With Black Friday in the rear-view mirror and Christmas coming up ahead, now is the time to focus for security teams. However, the research shows that more than half of UK organisations leave security teams understaffed during these critical times, and there is a greater risk of attacks that are designed to cause disruption to day-to-day life.

72% of UK organisations reported experiencing ransomware incidents during holidays and weekends when security operation centres (SOC) aren't working at full capacity. Despite the ongoing risk, 52% of UK businesses admitted their SOC is only partially staffed on bank holidays and weekends – and one in 20 don't staff their SOC at all during those times. Moreover, 42% of those who claimed to maintain a 24/7/365 SOC said that it only operates at 25% capacity. With fewer eyes on the network traffic and less attention to suspicious activity, this means hackers can slip in unnoticed – leaving organisations wide open to cyberattacks.

"With the online holiday shopping season well and truly upon us, retailers face heightened threats from ransomware and malware attacks, which can disrupt operations and compromise customer data," says Glen Williams CEO at Cyberfort. "Cyber criminals are using malicious software to capitalise on the increased web traffic to steal customer data, payment details and much more, which can lead to both customer and retailer financial loss and longer-term reputational damage."

Indeed, cyber-threats are present around the clock, and securing business-critical infrastructure such as core identity systems should be at the top of every enterprise's priority list – no matter the time of year.

"It is a busy time for network teams, IT, and security teams. Traditional security defences, such as real-time threat monitoring or Denialof-service attack protections, should be supplemented by AI systems," shares Cristian González, Head of Content at Softonic. "Relatively new security technologies, such as AI anomaly detection, can assist in the prevention, detection, and resolving of attacks. AI can help detect suspicious transaction patterns, supply chain issues, and even equipment-related issues among others."

Ouestions

and answers

If I had £1 million, I'd invest

in open-source startups

Mark Grindey, Zeus Cloud, p16

Having robust, resilient, up-to-date IT systems - and a responsive support provider – in place ahead of time is not only wise; it's business critical, asserts Colin Crow, Managing Director at Nexer Enterprise Applications.

"Retailers should be prepared to easily monitor warehouse stock vs in-store purchases, accommodate increased demand, and navigate cybersecurity issues that sadly threaten to rear their heads at this time of year," says Crow. "Relying on legacy systems and failing to have flexible expert IT support to rectify emerging issues quickly can be a major commercial risk. Every minute a system is down, or stock runs out because the retailer hasn't identified a need for delivery could be a costly mistake which risks businesses missing out on sales."

"In this high-stakes period, having the right security operations platform in place to quickly identify and mitigate potential threats is crucial," warns Williams. "Equally important is a robust incident response plan to contain, recover from, and remediate attacks effectively. By having these in place retailers can maintain business continuity and make sure the sale season is a success for everyone."



Commsworld transforms Northumberland County Council's digital infrastructure

Commsworld has completed the construction of its core network build, transforming Northumberland County Council's digital infrastructure.

news

replaced The company has Northumberland's Wide Area Network, 262km of new full-fibre laving infrastructure, ensuring businesses and communities across the county can also benefit from higher-quality, reliable and resilient connectivity.

The WAN was delivered as a result of Commsworld's 20-year strategic partnership with Northumberland County Council. It means employees in 150 council sites are now connected to far superior network infrastructure, while around 115 Northumberland schools also have access to faster speeds, bandwidth and resilience, providing a further boost to digital learning in the county. The infrastructure is also delivering a host of further digital improvements thanks to Commsworld's partnership with local internet service provider Alncom.

As a result, residential and business properties, many of them rural, have gained access to high-speed Fibre to the Premises (FTTP) for the first time, directly tackling the digital divide in the county and providing the infrastructure that underpins Northumberland County Council's progressive approach to connectivity in line with its long-term

digital strategy.

Commsworld is also working in partnership with the National Innovation Centre for Rural Enterprise (NICRE) and Community Action Northumberland (CAN), funding a project which will recruit and train volunteer Digital Champions to engage in rural communities to improve digital skills and confidence and help everyone get the most from the improved digital connectivity.

NICRE will also be carrying out a three-year study to capture learning and impact of the project, providing a blueprint for digital inclusion and maximising the social value of improved digital connectivity.

This is great news for our county. The completion of this project will deliver significant benefits to our communities, particularly in rural areas," said Cllr Wojciech Ploszaj, Cabinet Member for Corporate Services at Northumberland County Council. "This enhanced digital infrastructure will enable us to improve educational resources and support local businesses by providing access to the fastest internet speeds available. This strengthens our commitment to bridging the digital divide, ensuring even the most remote areas are connected. I would like to thank Commsworld and Alncom for helping us bring these valuable improvements to Northumberland."

Government extends EE's ESN deal for 7 years despite delays

The UK Government has signed a new £1.29 billion deal with BT (EE) to extend their operation of the 4G based Emergency Services Network (ESN) for another seven years.

Under the new £1.29 billion contract, BT Group will continue to build, maintain and develop critical mobile coverage and capabilities for ESN as it rolls out to support more than 300,000 users. The new contract also sees BT take management responsibility and provide coverage services for the Home Office's Air-to-Ground (A2G) network, their Extended Area Services (EAS) sites, London Underground and specific road and rail tunnels.

"BT Group has been a committed longstanding partner for Britain's Emergency Services Network (ESN). We're proud to double down on this commitment today by broadening the scope of our agreement with the Home Office until 2032 and beyond - as the Government takes ESN from build through to delivery and operation of this critical network," said Bas Burger, CEO of Business at BT. "Essential public services like these depend on a rock-solid digital foundation. Through our award-winning EE mobile network, we'll continue to play a central part in delivering missioncritical, trusted communications for the Emergency Services on the ground, in the air, and wherever they need to operate helping them connect for good and protect the communities they serve nationwide."

The emergency services were originally

due to have moved away from the previous Motorola-owned Airwave network several years ago. EE holds the main 4G based network contract, but the ESN covers a variety of different areas with other suppliers.

The Home Office originally expected that emergency services could start using the ESN in September 2017, allowing Airwave to be replaced by December 2019, but the contract ended up billions of pounds over budget and years behind schedule. Indeed, the Home Office is expected to have spent just under £2 billion on the ESN by March 2023, and a further £2.9 billion to maintain Airwave because of all the delays. A variety of problems have beset the project, from delays with developing the new end-user kit, to delays with the network build and competition disputes related to Motorola's conflicting roles in the project etc. The project has since been effectively reset.

EE has already built a new dedicated core network for the ESN, ensuring priority EE connectivity to Emergency Services users at all times. The original contract also included upgrading more than 19,500 of EE's existing 4G sites ready for ESN and expanding coverage in rural and critical operational areas etc.

The timetable for completion of the ESN has been pushed back to 2026 at the earliest, with the later date of around 2029 often being touted as a more realistic expectation. Meanwhile, maintaining Airwave into the 2030s is predicted to cost at least £250 million a year.

Black Cat Club opts for SECaaS

Advantex has completed an IT infrastructure upgrade for Mills Hill Development Limited (MHDL) in the Black Cat Club venues located in Manchester and Leeds.

The company implemented advanced connectivity and security solutions tailored to the unique needs of the Black Cat Club, a new entertainment concept that combines darts, shuffleboard, and sports screens. This transformation aims to provide an 'always on' internet service, ensuring seamless connectivity for patrons.

MHDL collaborated with Advantex scalable to establish a platform that guarantees high-performance



connectivity and cost efficiencies across all MHDL properties.

The technological foundation deployed includes a high-capacity WiFi network and dedicated cabled connections specifically for gaming and entertainment systems. This setup also incorporates redundant internet transit to ensure reliability.

"Our decade-long collaboration with MHDL has seen fascinating evolution. From initial cabling projects to Voice over IP (VoIP) systems, and now to advanced connectivity and cybersecurity solutions, we take pride in fuelling MHDL's innovation and expansion," said Advantex's Senior Account Manager, Tony Easingwood.

To enhance security and operational resilience, Advantex built the infrastructure around a centralised security model using Cisco security appliances along with their Security as a Service (SECaaS) offering. This structure is further bolstered by Diverse Plus connectivity, featuring dual circuits at each location to significantly reduce the risk of service disruptions.

"The Black Cat Clubs' success hinges on superior internet connectivity and ironclad security. Advantex delivered this whilst consistently exceeded expectations, maintaining transparent communication throughout the project," said Mike Smith, HR Manager at MHDL.

With the Black Cat Clubs successfully operating in Manchester and Leeds, MHDL is looking to further expand this concept. The solid and secure IT infrastructure provided by Advantex plays a crucial role as the entertainment industry evolves to meet the demands of modern consumers.



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Workplace Al adoption remains low

Lucid Software has released data from its 'Workplace AI Adoption' report which has found, despite 60% of firms claiming to use AI-powered tools, 34% of workers use them less than monthly.

Similarly, although there have been widespread fears about AI replacing workers, 52% believe AI-powered tools will only have a moderate or limited adoption in their workplace over the next five years.

Despite adoption of AI being relatively low, the findings confirm that employees have a good understanding of the impact AI can have on their workday, with 78% believing AI tools will help save them time, 64% believing it will improve worklife balance and 72% believing AI will have a positive effect on job satisfaction. In fact, over 42% of respondents believe it could save up to 2 hours of work a week, equating to over 100 hours a year based on the average working week.

Understanding why, despite the well understood benefits, workers are still not adopting AI tools which requires firms to evaluate the barriers many employees face. For example, a top concern is with data security, according to almost half (49%) of workers. While 57% believe human input in AI tasks should always be primary, 43% are worried their job could be replaced by AI. Unfortunately, these fears are not being addressed by companies. In fact, 40% of firms still lack clear guidelines and policies on AI ethics, and a quarter of workers are not even sure what their AI policies are.

Firms are also struggling to create centralised training on how AI-powered tools can help workers, with just 27% acquiring skills through work-sponsored training. This compares with 44% of workers relying on self-education and 41% experimenting with AI tools on their own.

"AI is helping the workforce ideate, make decisions, and streamline workflows. It enables teams to reclaim valuable hours, focus on high-impact work, and drive projects forward with greater efficiency," said Dan Lawyer, CPO at Lucid Software. "I have seen firsthand how impactful the technology is, and it's crucial that employees at every level embrace it responsibly. Executives and leaders have the opportunity to make the introduction of AI seamless, exciting, and beneficial to their teams and organizations so they don't fall behind their competitors."



Network fault brings down National Rail

A huge disruption on the UK's rail network has caused delays on at least eight lines on 6 December. National Rail reported that the issue was due to a 'nationwide fault' with the radio system used between train

drivers and signallers.

The Elizabeth line, Gatwick Express, Great Northern, Southern, South Western Rail, Thameslink, Southeastern and ScotRail services have all been affected.



Journeys in and out of major transport hubs - including London Paddington and Victoria - have been impacted.

The issue appears to be down to a fault with the onboard GSMR radio system, which is used to communicate in case of emergencies. According to the Rail Safety and Standards Board Rule Book, in the case of a radio system failure, trains cannot exceed 100mph, or 60mph through affected areas.

ScotRail was affected early in the morning, but reported a fast recovery, stating that services are now 'operating well.' In an update on X, the company said that colleagues at Network Rail are experiencing an "industry-wide problem with communications systems."

National Rail is investigating the cause of the fault.

COMARCH

Your Path to Success: Smart Choices for AI Revolution



Using AI/ML systems can greatly benefit service providers, but it is difficult to distinguish truly valuable products from buzzwords among so many available solutions. Discover strategies for incorporating this technology for operational excellence.

Data Centre Connectivity all under one Roof

HellermannTyton has been working on a full data centre connectivity solution, offering a full complement of high capacity, high performance pre-terminated fibre connectivity in RapidNet Ultra, superior cable management with the Fibre Duet December and a wide range Duct Raceway and a wide range of data rack cabinets. All three product ranges are designed to work together, making the job of specifying or designing a data centre network or project a much more simplified task.

RapidNet Ultra – Your Pre-terminated Fibre Solution

For 20 years HellermannTyton has been a pioneer in pre-terminated infrastructure with its RapidNet solution.

RapidNet is the pre-terminated, neptroversity of the provided and play system developed by HellermannTyton, designed to deliver high performance and improve the ease and speed of infrastructure deployments.

HellermannTyton Connectivity have now launched RapidNet ULTRA, taking the existing data centre fibre solution beyond today's requirement, offering an even greater fibre density while accommodating very small form factor connectivity and supporting tomorrow's requirements for high bandwidth, advanced network architectures and ultra ethernet.

With a range of cassette formats and fibre assemblies, RapidNet Ultra delivers high performance and fibre capacity to meet the demands of the modern-day data centre.

Choosing a Fibre Duct Raceway System

Fibre Duct Raceway is a robust scalable cable management system engineered specifically for organising and protecting optical fibre cables in the data centre environment.

Constructed with precision, it provides a dedicated pathway that prevents cable congestion, minimises physical stress on fibres, and facilitates efficient cable management.

Rack Cabinets with HellermannTyton

Experience unparalleled value with a premium data centre solution from HellermannTyton, offering high quality data rack cabinets, backed by swift and reliable delivery and exceptional customer support from our UK based team.

As part of an award-winning data centre solutions manufacturer, celebrated for a rich heritage of innovation and impressive environmental credentials, HellermannTyton can also offer a bespoke design consultancy, providing tailored solutions to address your unique requirements.

HellermannTyton

HellermannTyton will be presenting their full Data Centre solution at Data Centre World 25 next March on stand DC063'

Latos launches in UK with hyperscale project

Latos Data Centres has launched with plans to develop a data centre in Cardiff, having secured planning permission for its first hyperscale complex project.

The three eight-story Cardiff facilities will deliver a total of 90MVA across 50,400 sqm of floor space. According to planning documents, the land, which totals 16.42 hectares along Rover Way in Tremorfa, was previously used as a nondomestic landfill site, known as the former 'frag tip' site. It is currently used as an off-road motorcycle facility managed by Cardiff Council's Parks Service.

Power will come from the National Grid, supported with a backup feed from the neighbouring 1,000MW Tremorfa Energy Park battery energy storage facility.

Development work on the Latos site in

Enterprises explore quantum tech to revolutionise industry

Seven leading businesses, including Vodafone, BAE Systems and have joined the Quantum Technology Access Program (QTAP).

QTAP, run by Digital Catapult, aims to support industry leaders in exploring how quantum technology can revolutionize their operations. The program targets real-world use cases that could help solve complex market challenges in major sectors of the UK economy including transport, defence and telecommunications.

Vodafone aims to tackle complex telecommunications challenges, such as the NP-Hard Steiner Tree problem, which could help optimize telecom networks by determining the most efficient way to connect multiple points.

"We're excited to join the Quantum Technology Access Program to further deepen our quantum knowledge and explore how quantum computing can enhance optimization challenges like the Steiner Tree problem," said Vodafone Group R&D quantum researcher Chloe AI. "This program will provide valuable insights as we look to leverage quantum computing in areas such as machine learning and combinatorial optimization."

QTAP is part of the wider Quantum Data Center of the Future project, which aims to embed a quantum computer within a classical data centre to explore real-world use cases and make sustainability and efficiency gains.

Participants in the inaugural program, including Rolls Royce, Airbus and the Port of Dover, received a 26% boost in confidence about quantum computing, according to Digital Catapult.

The quantum revolution is underway, and businesses need to innovate to incorporate quantum technologies into their operations if they are to succeed in the long term," said Digital Catapult senior quantum computing technologist Daniel Goldsmith. "However, many are unsure where to start. This is why innovation programs are invaluable for UK businesses, serving as an essential resource to help them navigate the complex quantum landscape. I look forward to working with this new cohort to drive innovation and advance the application of deep tech across industry."

Cardiff is expected to start immediately. Partners in the project are PCG Ltd and TEP Ltd. The company is also working with Create Architecture on the project.

"The growth of AI means the UK's data centre map needs to change. Organizations will need more computing power closer to where it is needed, and the ability to specify the exact facilities they need. They also need the peace of mind that comes from working with an experienced partner," said Mike Carlin, founder of Latos Data Centres. "Our team has a deep heritage designing and building complex data facilities. We understand better than anyone how best to deliver the infrastructure UK organizations will need."

Latos has also secured three other sites - two in the northwest of England and one in the northeast - with a dozen more in negotiation. Privately-held Latos reportedly plans to open 40 purpose-built data centres across the UK by 2030 - a combination of hyperscale and smaller Edge facilities.

UK SMEs require employees to use own devices

New research conducted by CyberSmart indicates that organisations not only allow employees to use their personal mobile phones to complete work tasks but actively expect them to.

The research polled 250 small-medium enterprise (SME) business owners or leaders in the UK, and found that 60% of organisations expect their employees to use mobile devices to carry out work tasks despite not providing all of them with work mobile phones.

Equally concerning is that 60% of staff members are not expected to carry out mobile security training. An organisation that allows employees to use personal mobile phones to carry out work without security training is massively increasing the chance of a security incident taking place across mobile devices. Elsewhere, the survey unearthed a worrying lack of concern from

business leaders regarding cyber security and employee security. 40% of organisations do not have a mobile code of conduct in place for employees.

"While these results are concerning, SMEs in the UK remain chronically underserviced by the cybersecurity industry, said Jamie Akhtar, Co-Founder and CEO at CyberSmart. "It is important to make the distinction that many of these organisations have limited resources and are already stretched thin making it difficult for them to invest in cybersecurity. We would advise SMEs to engage with solution providers who understand their specific needs, and more broadly would advise them to consistently focus on cybersecurity training. IT policies and fostering a more security-conscious culture would help them to achieve a more secure workplace."

Daisy upgrades Highland Council's unified communications

Daisy, part of the Wavenet Group, care, housing, roads, and public buildings has transformed the communications infrastructure for Highland Council, the UK's largest local authority by area.

upgrade modernised This major a total of 5,000 lines across schools, businesses, and two contact centres with a RingCentral cloudbased unified communications solution.

The enhanced system significantly improves the reliability and efficiency of essential services, ensuring that 100% of emergency calls related to health and social

Word on the web...

The UK's cybersecurity strategy is no longer fit for purpose

Paul Holland, CEO, Beyond Encryption

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are now answered.

The Council's legacy telecoms system previously powered 400 sites across the region, including 200 schools, and relied on traditional phone lines for residents and businesses to contact council services. This limited contact centre call capacity to just 30 at a time and led to poor call quality, busy signals, and a substandard customer experience. The upcoming PSTN switchoff also provided a deadline for the council to upgrade its legacy system.

Networking redefined: unlocking new growth with NaaS and expert guidance

Mark Daley, Director of Digital Strategy & Business Development, Epsilon Telecommunications

etwork as a Service (NaaS) has become a crucial element of enterprise infrastructure in today's digital landscape. The NaaS market is projected to grow from around \$12 billion in 2023 to over \$215 billion by 2032, according to **Business Research Insights.**

The demand for flexible, scalable and efficient networking solutions is growing, as more businesses worldwide move towards cloud-based operations. This shift presents significant networking challenges for enterprises. Reliable and efficient networking is vital as businesses manage the growth of cloud services and IoT devices, while supporting remote workforces and mission-critical locations. However, many organisations remain unaware of the latest networking options available and may struggle to optimise their operations effectively.

While NaaS provides the technology needed to address these challenges, enterprises also need expert guidance and consultancy out of their network. most to get the

Networking obstacles

Network complexity is a common problem, as managing numerous devices, sites, configurations, and policies becomes progressively harder as networks expand in size and sophistication. This calls for advanced network management tools and skilled teams to ensure performance and security.

Complicated networks also present more entry points for potential cyber threats, making advanced security measures, frequent updates and ongoing monitoring crucial to ensure proper protection.

Scalability is another concern, particularly with inflexible legacy systems. Enterprise networks must adapt to growing demands, but without the right technology and expertise, this can be both challenging and expensive.

Additionally, the shortage of in-house professionals capable of designing, implementing, and managing complex networks highlights a skills gap in many enterprise IT teams.

Expert consultancy

Enterprises can overcome these challenges by partnering with an expert NaaS provider, offering an array of connectivity solutions that lead to network success:

- Regulatory compliance & security -NaaS providers simplify compliance with industry-specific regulations, minimising the risk of penalties and providing peace of mind. They also provide cuttingedge security measures, such as threat detection, prevention, and response, to safeguard enterprises from cyber threats.
- Expert skills & advice Partnering with a NaaS provider adds network specialists with the latest expertise and experience in network management, design and security to the team.
- Flexibility & scalability The flexibility of NaaS solutions allow enterprises to seamlessly adapt their network infrastructure to their needs, expanding to new locations and incorporating new technologies.
- Cost efficiency NaaS providers offer flexible pricing options that enable

enterprises to scale network services according to demand, ensuring both cost efficiency and budget stability. This eliminates the need for upfront expenses of purchasing and maintaining their own infrastructure by instead.

Reliable network performance providers combine cutting-NaaS edge technologies and best practices to deliver high-speed, low-latency connectivity that meets the needs of modern enterprise applications.

Time savings - NaaS partners offer expert consultancy, helping enterprises

outsourcing network management, enterprises can free up resources to concentrate on their core business, rather than network maintenance and troubleshooting.

Flexible, scalable & futureready networking

Enterprises must be agile and proactive to succeed in today's rapidly changing digital landscape. Utilising NaaS and expert consultancy presents an opportunity

develop strategic network plans. By for enterprises to enhance performance and future-proof their networks with modern infrastructure.

An expert NaaS provider not only helps bridge internal skills gaps, but also provide access to the latest technologies and professional support, adding scalability, security and strength to networks.

By focusing on core objectives instead of navigating the complexities of modern networking, enterprises can strategically distribute internal resources according to growth plans, maximising long-term success.

How to stay ahead of evolving threats to network security

Jonathan Wright, Director of Products and Operations, GCX

he widespread adoption of hybrid and remote working, accelerated by the COVID pandemic, seems here to stay. For organisations globally, re-designing IT suites to support this way of work has become nonnegotiable and a key principle in increasing the resilience of their IT infrastructure.

A central enabler for this has been the rise of cloud computing. Since its inception, cloud computing has become a critical component of most enterprise tech stacks, with many applications now being hosted in the cloud. While the adoption of cloud computing has brought numerous benefits, enabling businesses to leverage scalable resources on demand, it has also brought new challenges to network security. A recent report by IBM on the cost of data breaches revealed that 82% of breaches involved data stored in the cloud.

Policies like Bring Your Own Device (BYOD) and the increased use of Internet of Things (IoTs) have magnified the number of endpoints for malicious cyber threats, leaving organisations grappling with an increasing cyber-attack surface.

Scaling the growing attack surface

Hybrid working provides a host of benefits, including increased flexibility and the ability to work remotely from anywhere, including on the go. The added mobility is great for the balance it provides employees; however, it can increase the risk to company, employee and customer data. This is because public networks are open to all, and modern threat actors can now use simple tools to gain access to vulnerable data like login details via the shared public WiFi networks.

With data becoming easier for threat actors to access, long-term solutions that provide greater protection and resilience for vulnerable data are sorely needed. However, many organisations still rely on point security solutions to address each challenge as it arises, which can be expensive and create difficulties in IT management while opening critical gaps in security posture for threat actors to exploit. If solutions are bought for specific functions, the control of functional overlaps and the interplay with other point solutions can lead to grey areas of control which can leave the network vulnerable.

Organisations need to understand that no device is safe from cyber-attacks, even photocopiers can be breached. If the device is connected to the network and has an IP address, it is a potential entry point for threat actors to exploit. Furthermore, mitigating the risk that comes with these breaches can become extremely difficult once access has already been gained, especially for organisations that don't have a zero trust policy implemented.

Moving on from point solutions

In today's landscape, organisations simply cannot rely on outdated point solutions to solve every problem. Two modern examples of where this produces risk are the deployment of Software Defined Wide Area Networks (SD-WAN), which were developed to primarily support on-site networking, and Virtual Private Networks (VPNs), which have been the mainstay of remote network access for over 20 years. However, these solutions are becoming increasingly unreliable due to not being able to offer visibility of the applications or devices, hampering threat detection and mitigation capability beyond the initial authentication.

Consequently, a comprehensive review of security policies is important. Traditional solutions operate in silos and do not provide visibility after initial user authentication has taken place. As a result, this makes them unsuitable to mitigate threats that are increasing in volume and sophistication and require constant monitoring.

Utilising deeper inspection capabilities

With many organisations moving towards the cloud, outdated solutions are no longer fit for purpose. Deploying Secure Access Service Edge (SASE) solutions can prove a crucial first step forward in protecting data from threats to cloud and endpoint security. Even better, a holistic single-stack approach to deploying cloud security solutions limits the gaps between point solutions.

This is important for several reasons. Firstly, single stack solutions makes IT operations easier to manage, as everything is centralised to one platform. Perhaps more importantly, it reduces the number of gaps between solutions, resulting in a single-stack offering that can be more easily underpinned by zerotrust architecture. Due to its deeper inspection capabilities, a zero-trust solution monitors user activity beyond the initial authentication, unlike its outdated counterparts, providing greater visibility across attack vectors at network, device and application level.

Navigating modern security risks

The cyber attack surface is rapidly expanding, but organisations shouldn't let that get in the way of adopting hybrid and remote workflows. Flexible working offers businesses a variety of advantages but only if organisations take the risks seriously. Tangible benefits like financial and productivity gains aside, a more satisfied and engaged workforce is easier to retain, and amid an ongoing challenge to skills shortages in both cyber-security and the wider IT environment, organisations need to ensure they can attract and retain talent.

Doing this is far easier if organisations simplify their operations, which is supported by a single network security stack built on zero trust. Visibility is key in today's environment as it not only helps organisations prevent significant data breaches but enables greater incident response capabilities should they be required.

embracing cloud-native security By tools and cultivating an environment of cybersecurity awareness, organisations can more easily navigate an increasingly complex threat landscape, while allowing them to reap the advantages of hybrid and remote work.

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Designing tomorrow's data centres

Designing a data centre that can accommodate future sustainability regulations and accommodate next-generation technologies is no mean feat...

ata centre design has come on in leaps and bounds in recent years, with new technologies changing the face of the industry forever.

"Considering the long lifespan of data centres, which can exceed 20 years, and the rapid refresh cycle of IT infrastructure - typically every three years - it is crucial to design with foresight," asserts Stijn de Kruijf, data centre sustainability expert, Royal HaskoningDHV. "The emergence of AI chip technology, which is already reshaping data centre densities, highlights the necessity for a smart, modular, and flexible design, ensuring the data centre remains relevant and valuable well into the future, potentially up to 2038 and beyond."

The importance of agility cannot be understated. Jason Koffler, CEO & Founder, Critical Power Supplies, reports that the pace of technological change means infrastructure must support rapid scalability without compromising reliability or security.

"Flexibility in design - whether through modular elements, adaptable power solutions, or flexible cooling systems - allows data centres to evolve alongside emerging tech demands and deliver consistently high performance to end-users. A future-ready design is, at its core, an adaptable one," notes Koffler.

"Being future-ready demands adaptability, particularly ensuring that data centre operations are fully optimised and run efficiently in a risk-free manner," agrees Stu Redshaw, Chief Technology & Innovation Officer, EkkoSense. "We

need to recognise that, as our industry undergoes significant change, we're not in a steady state anymore!'

What's missing?

Amongst the infrastructure, regulations, power, connectivity, and the challenges of incorporating next-gen technologies, some aspects of data centre design - like redundancy and resilience - don't get the attention they deserve.

"Resilience is often the underappreciated element of data centre design, particularly in power and cooling infrastructure, opines Koffler. "As operational demands increase, these systems need a robustness that can endure both peak loads and

<u> Stu Redshaw - EkkoSense</u>

the unexpected. Redundancy, battery backup, and proactive maintenance are essential to avoiding costly downtime. Investing in scalable power systems from the outset can save millions in the long run, while ensuring a consistently high standard of service."

Smart building systems, too, are oft overlooked in data centre design. According to Andy Putnam, Services Director (Data Centres), SKANSKA, however, this is changing.

"These systems can have a huge impact on increasing the operational and energy efficiency of a facility. Designing and building them in from the start gives clients access to live operational information from day one," shares Putnam. "This means they can operate as efficiently as possible, including configuring a digital twin to enhance the operational efficiencies in both white and grey space. Meanwhile, having the ability to take this to a central headend creates the backdrop for the use of AI to maximise potential of all the systems and look for energy saving opportunities across multiple sites."

What concerns me is that so many data centres still rely on building management system (BMS) levels of sensing to monitor the environmental performance of what now are clearly key strategic assets," says Redshaw. "Less than 1% of data centres have gone to rack-level telemetry, indeed some rooms were originally specified just to have tens of sensors. This introduces levels of generalisation in terms of telemetry that simply can't keep pace with evolving IT requirements. We're now operating in a space where we should be relying on hundreds if not thousands of sensors per room - otherwise you're exposing yourself to significant risk.

"Looking further ahead, the automation of data centre operations, combined with autonomous energy efficiency control optimisation, is expected to become more prevalent," adds de Kruijf. "These advancements enable a high-security regime with minimal personnel presence near valuable data, ensuring 24/7/365 operational focus and uptime. Developing a strategic vision on these topics and translating them into data centre design principles is crucial but not yet widely adopted."

Accommodating Al

"We expect the rise in AI to be the biggest single factor to influence the design of future-ready data centres," warns Putnam.

AI demands higher processing power and a level of flexibility in power distribution and cooling that is much greater than conventional systems.

"AI processing could result in a seven or eight-fold increase on current levels of loads," explains Putnam. "We used to discuss rack loads of 3-4kWatts, this has now increased to 20-30kWatts per rack, and even higher with high-performance computing (HPC). Designing for AI significantly changes both the power and cooling requirements of a data centre. So, they will need to be designed to potentially accommodate much greater power capacity while also incorporating the most effective, and efficient, cooling systems, including DLC and immersion cooling."

"Use advanced cooling technologies and energy-efficient hardware," recommends Rajesh Sennik, a partner at KPMG UK. "Also, think about how excess heat can be recycled for other means; for example, can it be used for heating a building?"

Notably, de Kruijf highlights that one of the most pressing issues is the sheer weight of AI hardware: "liquid cooling systems, essential for managing the intense heat generated by AI workloads, can significantly increase the weight of individual racks. Traditional data centre designs, often based on standardised wardrobe-style racks, may struggle to support these heavier loads, leading to structural concerns and potential risks."

Standards driven innovation

Data centre standards are more important than ever before, particularly with larger and medium-sized data centres now having to collect and report on all the data necessary to be compliant with increasing ESG regulations.

"Regulatory and operational standards play a foundational role in data centre design by shaping best practices and ensuring resilience, safety, and security," comments Koffler. "Standards like ISO 27001 for information security or ISO 14001 for environmental management are essential, not just as compliance measures, but as benchmarks that enhance operational trust and efficiency."

"Recent regulations, such as the Building Safety Act 2022 and the Higher-Risk Building Regulations 2023 in the UK, have set foundational standards for data centre design," adds de Kruijf. "While these regulations have not drastically altered design practices, they underscore the importance of safety and risk management."

However, the evolving regulatory environment, driven by government targets for sustainability and net-zero emissions, is poised to introduce more demanding requirements.

The need for accurate, real-time reporting has become critical, says Redshaw: "this means not only being able to track key metrics like PUE, CUE, WUE and CER, but also automating the process where possible to reduce reporting burdens. Tracking ESG performance is critical for data centres, but we simply can't afford to resource large teams of specialists to manually analyse out-of-date reporting spreadsheet. That's why you need an automated reporting framework."

In September, the UK's data centres were classified as critical national infrastructure (CNI), joining the emergency services, finance and healthcare systems, and energy and water supplies.

"Greater regulatory oversight may follow, so the role of standards is likely to increase," warns Putnam.

"Now that data centres are classified as CNI, they are required to be resilient to physical disruptions, such as from extreme weather events or disruptions from potential protests. As such, the design of these facilities will have to be even more secure to prevent any outages," adds Sennik.

"The CNI status not only recognises the importance of data centres but also imposes a responsibility to adhere to higher standards," agrees de Kruijf. "It ensures that data centres are resilient, secure, and capable of supporting essential services. However, it also raises questions about what qualifies as CNI. For instance, data centres dedicated to bitcoin mining may not meet the criteria, and this distinction needs careful consideration."

Keeping it green

8

New legislation and a global effort to enhance sustainability

is placing increased pressure on data centre operators.

"The increasing demand for power which, coupled with the requirements on operators to report on energy use, is driving the need for renewable energy sources, like the use of small modular reactors (SMRs)," reports Putnam. "It's important that sustainability and carbon reduction strategies are in place through the whole lifecycle - from design, through construction to operational management."

"Operating the still 'young' data centre infrastructure on 100% renewable power, preferably in combination with time matching, is the biggest contribution companies have within their domain," asserts de Kruijf. "With strategic positioning of energy efficient data centres and blending the data centres into communities (e.g. with heat delivery), data centres can make a difference."

Koffler believes that a combination of efficient design, renewable energy sourcing, and state-of-the-art cooling technologies are required to make a truly sustainable data centre.

"Leveraging renewable energy sources can dramatically reduce a centre's carbon footprint, while advanced cooling options — such as free cooling or heat reuse further reduce environmental impact. Sustainability isn't just a target; it's a necessary operational standard that offers long-term savings and aligns with the increasingly eco-conscious expectations of clients and stakeholders," says Koffler.

Sennik, too, recommends "a structured approach to decarbonising data centre projects. This involves creating a baseline of current carbon emissions, determining a targeted future state, and developing a comprehensive implementation plan to achieve sustainability goals."

"In addition to these strategies, considering the lifecycle impact of data centre components is crucial. This involves evaluating the environmental footprint of materials from production through to disposal, which includes operational and embodied carbon," shares de Kruijf."

One thing's for sure - "organisations need to get smarter at optimising their data centre performance - there's nothing worse than an unloaded data centre - it's like a bus with no people on it!" outlines Redshaw. "Accommodating workload is everything - the more you can bring in, the more you can do, the more efficient you are. This requires true real-time visibility of data centre performance so you know when you've brought in as much load as you can safely handle and have optimised it. Getting data centres to a level where they are as efficient as they can practically be is the key to balancing increases in workload demands with sustainability requirements."

Modern network management with Al-driven OSS and BSS

Oskar Wierchowicz, Managing Director, Comarch UK

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AI-supported OSS for RAN

The demand for mobile private networks is steadily increasing across diverse industries seeking secure, highperformance connectivity. Integrating Al into operational support systems (OSS) for the Radio Access Network (RAN) domain tackles network management issues that static algorithms cannot, such as inaccurate data interpretation and limited predictive capabilities. Al-driven OSS can provide:

- Dynamic network optimisation: Al algorithms analyse traffic patterns, user behaviours, and network conditions to adjust configurations and allocate resources automatically.
- Predictive maintenance: By examining historical data and detecting anomalies, Al allows us to anticipate potential equipment failures.

 Intelligent security management: Al enhances network security by identifying unusual activities and potential threats in real time, facilitating proactive responses.

Next-generation inventory management

Efficient inventory management is another critical challenge for telcos and fibre service providers dealing with a complex mix of active and passive network components. Al-powered OSS systems enable a more intelligent approach to inventory management by leveraging data analytics, machine learning, and automation. Key benefits include:

- Smart asset tracking: Al enables realtime monitoring of network assets, automatically updating inventory records and providing insights into the lifecycle of each component.
- Automated stock predictions: Al algorithms predict inventory needs using usage patterns and historical data, ensuring optimal stock levels and reducing waste.
- Optimised service deployment: With Aldriven analytics, providers can prioritise service deployments based on demand forecasts and network conditions, accelerating service activation and reducing deployment delays.

For smaller businesses, Al-enhanced inventory management solutions, such as those offered by Comarch, provide a competitive edge by reducing costs and improving the ability to respond to market needs quickly and efficiently.

The demand for mobile private networks is steadily increasing across diverse industries seeking secure, high-performance connectivity. Integrating AI into OSS for the RAN domain tackles network management issues that static algorithms cannot, such as inaccurate data interpretation and limited predictive capabilities.

Enhanced order management and product catalogue optimisation

Similarly to operators, wholesale fibre infrastructure providers are pressured to deliver faster and more flexible services. Ensuring both these things requires a reliable business support system (BSS) capable of streamlining order handling, invoice matching, and managing the entire product catalogue to identify underperforming services and create new offers.

Here is where Al steps in. With data analysis being its speciality, it becomes an invaluable tool in daily data-intensive operations. These specialised algorithms can identify patterns, detect invoice anomalies, simulate the impact of new offers on network load, and oversee the entire service fulfilment process for infrastructure providers.

Al revolutionises these processes in several ways: it can automate order processing based on resource availability, assist in crafting and customising new offers, or suggest product adjustments according to customer preferences and market trends. It can also analyse customer data to anticipate demand and uncover emerging trends.

For a consortium of wholesale providers, Al-driven BSS solutions enable better service delivery, improved customer satisfaction, and a future-ready approach to managing fibre infrastructure services.

Smarter solutions for telcos

Al-driven OSS and BSS technologies are more than just tools; they spark innovation and growth in telecom operations. Embracing Al-supported solutions for Mobile Private Networks, inventory management, and order management empowers small to mediumsized telcos and fibre service providers to stand out and easily adapt. Thanks to immense automation features, businesses can become more customer-focused, opening doors to a more connected future.

Leveraging data is the key to success. Combining the latest technologies with agile and scalable OSS and BSS systems allows operators to build profitable and attractive networks.

Are cities smarter than people?

With cities becoming smarter on a near-daily basis, are the UK's networks up to the challenge of supporting mass digitalisation?

s cities become increasingly congested, attention has shifted towards building more efficient infrastructure and service offerings with Internet of Things (IoT) technologies. Smart energy and water systems are creating a more reliable and cost-effective ecosystem for consumers and government alike, while waste, traffic, lighting and heating management are becoming more sustainable.

According to Statista, the UK's projected revenue in the smart cities market is expected to grow at a compound annual growth rate of 11.59% over 2024-2029 to reach US\$2.63 billion. A great opportunity for sure to make the UK greener and more efficient - but does the UK really need bins more intelligent than (some) people?

Smart city living

Apparently so: "the benefits of smart cities are becoming increasingly evident as both the government and local authorities follow through on the investment necessary to deliver digital transformation across the UK," says Matt Rees, Chief Technology & Operator Officer at Neos Networks. "One of the most universal benefits they bring is the wealth of data they can unlock via increased connectivity. Some smart cities have already demonstrated this by implementing the IoT for several use

cases such as public transport where it can be used to provide real-time updates benefitting both local authorities and citizens alike."

According to Jason Legget, Public Sector and Enterprise Solutions lead at Connexin, "smart cities, or 'smarter places' as we refer to them, have the potential to significantly benefit governments, the economy, and citizens if designed and implemented effectively."

"Alongside this is the boost to the economy through increased productivity and tourism," says Tom Hayden, Head of Engineering at Ontix. "The population increasingly rely on technology from cashless payments and route finding with

online mapping tools, whilst councils and governments are increasingly moving to technology solutions for their citizen engagement. Moving to an online economy and engagement model will provide a step change to the way people and councils/ governments interact with each other."

Networks: ready, steady... go?

Reliable networks featuring a combination of technologies are required to provide the foundations for the UK's smart cities. And, while the country has made strides in developing digital infrastructure,

smart cities

several gaps remain.

"While fibre FTTP access is improving, some areas still lack reliable connectivity which means that they can't handle the increased bandwidth demands and low latency necessary for applications like IoT devices, real-time analytics, and autonomous systems," confirms Rees.

Hayden believes that too much focus historically has been given to coverage: "the issue in cities today is not 'will I have coverage,' but more 'will I be able to use the service in the way I expect.' The expected user experience, especially for the data services that a smart city will rely on. outstrip the delivered service - especially at peak user times. Focus needs to be given to densification and capacity infill to ensure the required user experience is met - autonomous taxis can't only work at off peak times when the network loads are low enough to support."

Recent years have seen 5G deployments accelerated, and a clear digital strategy that includes fostering innovation in AI, IoT, and other technologies critical for smart city growth. However, rural areas and smaller cities still lack comprehensive coverage, and aging infrastructure in older cities limits the implementation of smart technologies. Moreover, budget constraints at local government levels are delaying implementation of large-scale projects.

Holistic, coordinated efforts and publicprivate partnerships are needed to ensure the UK's networks and infrastructure can fully support the cities of the future. Legget recommends that local authorities look to low power wide area networks (LPWAN) industry best practice to create effective and consistent approaches to smarter infrastructure.

"The widespread deployment of smart city infrastructure requires the economic installation and management of millions of small, energy-efficient devices that can wirelessly transmit data to gateway devices," outlines Legget. "4/5G cellular connectivity works in some cases, but at scale, it becomes cost-prohibitive, so LPWAN are the ideal solution."

Neutral host infrastructure will also help unlock smart city development, opines Hayden, providing cheaper, more cost-effective solutions for both coverage and capacity infill solutions.

"Multi operator neutral host deployments in targeted high foot fall areas allows all networks to have the best possible coverage and capacity and reduces the clutter at street level, removing the need for four deployments for the same area." says Hayden. "This becomes even more important as redevelopments change the look and feel of our high streets and public spaces. Councils working with neutral hosts can implement day 1 multi-operator coverage solutions that meet the demands of the city planning departments, reduce clutter and provide to the mobile network operators (MNOs) the capacity and coverage that their customers demand."

A smarter future

With millions of connected devices coming into play for smart city projects, data generation is booming.

"Data is the lifeblood of a smarter place, enabling real-time decision-making and optimising urban services, while evidencing service innovation," says Legget. "Without a data strategy, it is practically impossible to effectively deploy smarter solutions ensuring they monitor and manage the public infrastructure and services more efficiently.

Looking ahead, the UK's smart cities will need sophisticated. AI-driven management solutions and robust cloud infrastructure to handle demands. Indeed. AI is set to have a transformative impact on smarter city developments, driving city-wide automation, real-time decisionmaking, and personalised services across public services, transportation, energy and healthcare.

"AI is having a significant impact everywhere, and smart cities are no different," asserts Rees. "Whether smart cities are using machine learning (ML) algorithms to analyse data or automating public services with AI, increased data centre capacity and connectivity are essential."

"To maximise AI's potential, data processing needs to occur closer to the source, necessitating local and regional data centres to reduce latency," adds Legget. "Currently, the UK faces challenges in scaling data centre capacity to meet growing demand, particularly with the expansion of cloud computing and at high bandwidths is essential to handle edge processing. Investment in energy- the demands of AI and meet the required efficient data infrastructure will be key data transfer speeds," warns Rees.

"The UK's smart cities will need sophisticated, AI-driven management solutions and robust cloud infrastructure to handle demands. Indeed, AI is set to have a transformative impact on smarter city developments, driving city-wide automation, real-time decisionmaking, and personalised services across public services, transportation, energy and healthcare."

to supporting the future growth of AIdriven smart cities."

However, "with sites dispersed widely across the country, increased connectivity

"Capacity is a challenge that the UK has overcome but increased investment may be required to ensure that connectivity is not the next challenge..."

Transform your business's Internet experience with one of DrayTek's award winning 5G routers, designed for seamless mobile broadband connectivity. Equipped with a Category 19 5G module, this router leverages advanced technology to deliver exceptional performance, ensuring optimal user experience for both Internet access and VPN applications.

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Harbottle & Lewis secure the remote network

arbottle & Lewis is a London, UKbased law firm serving media, entertainment, and technology clients for over 60 years. With more than 200 employees, their IT strategy needs to support a remote work structure to ensure secure access and reliable connectivity for employees, regardless of where they are.

The COVID-19 impact

What was once a traditional, officebased environment quickly changed for Harbottle & Lewis in 2020, when workers needed to work remotely for the

foreseeable future.

'We had zero visibility - we went from one office to 200 remote worker offices," said Charlie Laing, Head of Information Technology, Harbottle & Lewis.

After undertaking a transformation to the cloud, the organisation needed to focus on the end user experience of employees. Its legacy VPN client solution was unreliable. Users needed to manually connect and oftentimes didn't realise they weren't connected, resulting in decreased productivity and in some cases, lost billable hours

Network visibility was also an issue for Harbottle & Lewis' IT team. After

pivoting to a remote work structure, many workers experienced network connectivity issues, but the legacy IT approach didn't have the level of visibility and insight required to adequately diagnose network issues outside their corporate network.

Self-healing networking

Appurity, Harbottle & Lewis' valued technology partner, introduced the firm to Absolute Secure Access, a solution which could assure a reliable and resilient connection, provide visibility into various networks, and overall improve the experience for remote workers.

"We knew Absolute Secure Access could give us the visibility we needed to improve the remote work experience and provide better support," said Laing.

Absolute Secure Access delivers capabilities typically only found in separate offerings that make up the modern Secure Access Service Edge (SASE) or Security Service Edge paradigm (e.g., secure tunnel, ZTNA, SWG, CASB, DEM). With Absolute Secure Access, enterprises can make the remote access solution resilient to external factors, leveraging a selfhealing Secure Access client for Windows; quickly and easily expand access to networks, the internet, cloud services, and private applications; make applications invisible to unauthorised users, which reduces the attack surface; conduct realtime risk assessments, threat detection and prevention; assure a secure browsing experience for all - desk, mobile, or hybrid users; and improve helpdesk effectiveness

by proactively diagnosing and correcting poorly performing networks.

After a successful pilot of Absolute Secure Access, Harbottle & Lewis decided to move forward, replacing the older VPN solution with Absolute's solution. The decision was also influenced by the level of support Absolute could provide for a smaller law firm.

Once implemented, Harbottle & Lewis was able to gain the visibility needed to adequately troubleshoot and diagnose remote workforce issues, including poor connectivity. This improved the overall experience for remote workers, who could carry on without worrying about being disconnected from the network.

With Absolute Secure Access, Harbottle & Lewis could ensure a reliable, resilient network access for their anywhere workforce while actively improving the end user experience. Reduced connectionrelated support calls and trouble tickets to IT were required, resulting in fewer lost hours for IT teams and end users The new system also provides a robust remote work solution that can support ever-changing IT environments and transformations to the cloud, as well as secure connections on every network, no matter where the end user is located, allowing a secure, optimised experience. Overall, Harbottle & Lewis benefitted from improved network visibility, allowing IT to proactively troubleshoot, diagnose, and resolve remote working issues with various reports.

Now that the 'work-from-anywhere' concept is here to stay, many law firms are looking to optimise their IT strategy to support and protect their remote workers.

DAC Beachcroft goes global with MPLS

AC Beachcroft is a leading international legal business with more than 2,600 people in locations across the UK, Europe, Asia-Pacific and Latin America. It takes a partnership approach with its clients, providing tailored commercial, transactional, claims, risk and advisory legal services, to help them achieve sustainable growth and to defend their business and reputation.

Going global

With the international side of its business continuing to expand and increased pressures being placed upon network infrastructure, DAC Beachcroft needed to put in place a global network that could provide the performance and resilience the organisation needed to maintain operations across a wider geographical area.

"We're becoming a much more internationally-focused business, and we needed to move away from our reliance on our mostly UK network and our onsite infrastructure," said David Aird, IT Director at DAC Beachcroft. "We decided to look for a network partner with a worldwide reach that could support us across the globe and could scale with us as we grew internationally."

Following a tender process, DAC Beachcroft chose a flexible, global MPLS network solution from Colt.

"Colt offered a robust solution that represented good value, and had the network reach to provide the services our business increasingly needs across the globe," said Aird. "I believe that people buy from people and that was certainly the case here. We liked the Colt team and they seem to be a good fit culturally."

Resilience and reliability

Colt provides a global MPLS network to around 20 sites around the world, including all of DAC Beachcroft's main locations across South America and EMEA. Colt's multi-meshed MPLS network connects fibre on-net, DSL, Ethernet-First-Mile, and partner covered sites integrating underlying technologies into homogenous Virtual Private Networks.

By teaming up with Colt, DAC Beachcroft was able to connect its locations, people and data with a flexible, resilient network that can adapt quickly to changes in the business.

"With Colt, we have a reliable and truly global network now," said Aird. "Colt was extremely thorough in providing a much greater level of resiliency to each of our

offices and making sure we have greater diversity and no single points of failure."

This makes sure that DAC Beachcroft's business can always continue operating, protecting its revenue and reputation. Supporting the legal company's ambitions, The Colt network supports DAC Beachcroft's business goals by helping it to expand into new areas.

Given the recent focus upon expanding the international business, alongside the company's rapid growth, DAC Beachcroft continues to explore new opportunities.

"Working with Colt makes it easier to

resolve problems and to manage change, because the team is really responsive and professional," explained Aird. "Whenever we need support with new offices, or moves, adds and changes, it's really easy to get things done and they happen quickly. During the COVID-19 pandemic, for example, we needed more capacity rapidly and Colt responded extremely quickly. Their attitude was focused on enabling our business, rather than admin and processes creating an unnecessary barrier – a single phone call meant that within a day or two we had the extra capacity installed."

Moreover, a recent technical workshop explored the potential benefits of moving to an SD WAN model in the future to accommodate DAC Beachcroft's rapidly progressing cloud strategy. According to Aird, as the company moves towards cloud, it's looking forward to working with the Colt team on agilely making changes to the current infrastructure and the technologies in use.

"Colt's willingness to be flexible and to be led by our changing needs, rather than being commercially rigid, is something we really appreciate," added Aird.

in 🕅 (Register for Networking + -)jim king criticalImage: Complex need to protect criticalThe complex need to protect critical aviation networks

Martin Smillie, SVP for Communications and Data Exchange (CDE), SITA

he airline industry is undergoing an unprecedented transformation driven by digital technologies. Airports and airlines are adopting a variety of technological innovations to improve operational efficiency, passenger experience and flight safety.

However, this growing reliance on technology also brings with it significant challenges, especially in terms of information security at airlines and airports.

Our everyday lives and security are constantly being threatened, with cyber-security one of the most pressing challenges for most of us. For the aviation industry that threat increases exponentially, given the myriads of systems that keep airports operating effectively and aircraft moving safely through our skies.

Air travel is one of the most complex, systems-rich industries. But as we implement new efficiencies for managing passenger flows and cargo throughput in our airports, and for the 9,000-plus commercial aircraft that are operating on air routes globally at any moment, we are adding new and even more complicated technologies to deliver efficiencies and sustainability. These systems present an increased surface area for IT security threats.

Equally, the global and interconnected nature of aviation supply chains present vulnerabilities for cyberattacks at multiple points. With ransomware said to have surged by 600% in supply chain in 2022, and compounded still further in the past two years, the threat of disruption to operations is real and ever-present. Add to this, the geopolitical tensions that prompt hacktivist groups to

threaten critical infrastructure, together with the increase in digitalisation post-Covid and initiatives to meet sustainability goals, so you can begin to understand the clear and present risk to aviation.

Keeping our industry's estimated 40-plus million passenger flights safely in the air in 2024 requires a rigorous approach to cybersecurity assessments; operational practices, standards and systems; and enhanced sharing of information among key stakeholders. A successful cyber-attack can have devastating consequences, from the loss of passengers' personal data to the disruption of air traffic control systems. Therefore, the implementation of robust cybersecurity measures is necessary protect both passengers and critical aviation infrastructure.

To combat the growing number of IT threats to security we must deliver a multi-layered approach to each system in the air, within and also off-airport premises, to locations that are remote from our core aviation infrastructure.

Solutions based on controlling the access to the network, also called Network Access Control, can now safeguard mission-critical infrastructure at airports and for airlines, addressing the growing demand for secure and reliable access for end users and assets, applying a holistic approach to secure people, applications and environment.

Research has shown that using a Network Access Control (NAC) solution can help businesses to reduce the security impact from breaches by 55%. Thanks to its automatization and intelligence, IT costs can also be reduced up to 33%, while employee productivity can be send automatic responses to incidents. improved by more than 20%.

With increasing threats to digital infrastructure, particularly in complex environments like airports or applying 'bring your own device' (BYOD) policies, NAC offers unparalleled protection for Local Area Network (LAN) and Wireless LAN communications with additional layers of identification checks, threat analysis and network segmentation. This ensures that airports and airlines comply with industry security standards while maintaining operational efficiencv and protecting passenger systems. ISO 27001 certification is a fundamental international standard in this regard, as it establishes the requirements for information security management.

stringent The solution aligns with recommendations cybersecurity from authorities like the US Transportation Security Agency (TSA) and the Airports Council International (ACI), providing granular control over network access and detailed logging capabilities. It also has the ability to quarantine non-compliant devices and assures geographic availability, while also helping airports and airlines enhance their cybersecurity posture and ensure regulatory compliance.

The benefits that network access control can bring to businesses are, among others, control of those users entering the network, as well as access to resources and business' applications; it can limit access to specific resources for partners and guests; segment employees into groups according to their role using RBAC (role-based access control); and

When designed to integrate seamlessly with an existing LAN & WLAN-managed service, NAC enhances network management by offering identity-based access control and policy enforcement. Utilizing a Zero Trust security model, every access request is authenticated, authorized, and continuously validated. ensuring only verified users and devices can connect to the network. This significantly reduces the risk of unauthorized access and potential breaches such as rogue access points.

In order to implement a NAC solution, it can be done using a dedicated appliance or run as a Virtual Machine (VM), sized and designed depending on the user and network requirements, with flexibility to adapt to different security levels ranging from the toughest, with Certificates and Multifactor Authentication, to the simplest, for IoT devices that do not even have a keyboard. This kind of solution is already being deployed by leading airports worldwide.

Demand for secure and reliable network access controls is higher than ever, particularly in airports where traffic and device segregation are paramount in different areas of airport infrastructure and security zones. As external threats to digital infrastructure escalate, we require solutions that will ensure that essential communication systems keep ahead, with built-in safeguards at access points and switches, with complete visibility and control over communication networks. Only this will ensure that key stakeholders can monitor who is accessing what, how, when, and from where.

The easiest to use **Enterprise Monitoring tool** according to G2 reviewers.

Network monitoring equipment – what matters most?

Peter Savereux, Marketing Manager, Highlight 🖿

nvesting in network monitoring equipment Prioritise data usability is a critical decision that can impact the efficiency and effectiveness of an organisation's IT operations. Choosing the right solution requires careful consideration of current needs, future goals, and the primary purpose of the monitoring system. Here are some key factors to consider:

Define the purpose

The success of a network monitoring solution hinges on a well-defined purpose. Businesses must clearly identify what challenges the tool will address and how it will contribute to operational improvements. With a defined purpose, decision-makers will then be able to evaluate vendor claims and focus on solutions that can deliver measurable results.

The starting point is to understand the technologies that need to be monitored such as hardware, applications, and services critical to your operations.

Beyond the present, also consider your future needs. Do you expect your network to expand? Are you planning to adopt new technologies like cloud services or IoT? The chosen solution should be able to meet both current requirements and those of an evolving IT landscape.

PRODUCTS

NinjaOne's network monitoring solution is custom-built into the RMM, delivering easy-to-use monitoring with single-pane visibility across all SNMP devices - routers, switches, firewalls, printers, IoT devices and more.

Combined with the remote monitoring and management (RMM) platform, NinjaOne provides 2 centralized and actionable dashboard for the entire IT organization.

NinjaOne's innovative SNMP monitoring and management capabilities include realtime polling and monitoring; hardware performance data; discovery wizard; netflow traffic data; and SNMP v1, v2, v3 support.

With NinjaOne, IT teams can get complete visibility into the health and performance of SNMP-enabled devices with custom OID monitoring. Ninja network monitoring includes 50+ OID templates for common device types including Dell iDRAC, HP iLO. Synology NAS, and APC UPS devices. The user also gains full control to monitor any OID and alert on monitor results for more proactive management.

Issues with SNMP devices can be uncovered through hundreds of alerting conditions built into NinjaOne Network Management.

NinjaOne polls SNMP devices constantly to look for abnormalities. With results instantaneously available on the dashboard. Alerts can be customised by type, severity, and priority be alerted and through e-mail or SMS.

Monitoring solutions can provide vast amounts of data, but their true value lies in how that data is utilised. Before selecting a solution, establish clear processes for using the data to enhance your business operations.

Look at who will benefit from access to the information. Will the users be engineers, support teams, customer account teams or management? Different audiences require the data to be presented in formats tailored to their needs. If the audience goes beyond technical engineering teams, a solution that simplifies the data into a visual presentation that can be understood by non-technical stakeholders will significantly enhance adoption and deliver a return on investment.

Match the solution to your business format

When evaluating a system, consider whether its focus aligns with your organisation's goals, technical requirements, and size. Different network monitoring tools cater to varying organisational structures and priorities.

Network monitoring and observability have distinct purposes but are complimentary tools. Traditional monitoring emphasises specific hardware metrics, ideal for engineering teams

cardonet's 24/7 Network Monitoring

Service helps ensure high availability

of critical systems, providing alerts for

performance issues and helping manage

faults in physical, virtual, hybrid, and

Constantly scanning IT Infrastructure

and creating alerts for any issues allows cardonet to respond before they

become business affecting. The network

monitoring service covers server and

database monitoring; backup and data

laptops and mobile devices; network

infrastructure and bandwidth; security

infrastructure monitoring; and software

AKIPS' Network Device Monitoring

network, ensuring no blind spots from

tabs on half a million flows per second.

making it easy to detect anomalies and

patterns. Teams can configure alerts to

match needs, avoiding alert fatigue and

focus on what truly matters. Moreover,

as the network grows, AKIPS grows with

it, ensuring monitoring capabilities are

offers efficient configuration and control.

The efficient crawling mechanism rapidly

gathers device data across the network,

with a version-control system that

simplifies revisions and compliance; this

Paessler's new multi-platform probe

for Paessler PRTG means that for the

first time, PRTG network monitoring

capabilities can be deployed to a variety of subnetwork types and non-Windows

environments, including Linux and ARM

Customers stand to gain unparalleled

flexibility and a consistent monitoring

experience across diverse platforms and

environments that run on Debian, Ubuntu,

RedHat, ARM platforms including

Raspberry Pi, and NAS systems.

AKIPS' Network Device Monitoring

With AKIPS, organisations can keep

provides clear insights into

workstations,

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infrastructure;

storage

core to periphery.

never outpaced.

infrastructures.

cloud infrastructure environments.

diagnosing system issues. Observability, an emerging trend, emphasises a holistic approach to network monitoring that focuses on user experience and overall business impact, alongside more specific hardware metrics. Understanding vour organisational focus will ensure vou can maximise the full benefits from both systems.

Evaluate setup and maintenance

Ease of setup and ongoing maintenance are also vital considerations. Some systems offer plugand-play functionality with minimal configuration. while others demand extensive customisation and setup time. If the effort required to integrate a solution into your network to too time consuming or complex, it may damage its overall value.

Some solutions offer a streamlined deployment process and automatically capture data from applications, underlay connectivity, overlay MPLS or SD-WAN, switch or Wi-Fi LAN infrastructure and then format the data for clarity and usability. Conversely, more technicallyfocused solutions, while powerful, require a more intricate setup and the data presentation is tailored to engineering needs.

Analyse total cost of ownership

Price is another multifaceted consideration. The initial licensing or purchase cost is only one part

application monitoring.

application monitoring; network traffic cost-effective, network monitoring; complete, multi-vendor device support both event noise (99%) and mean-timeusing standard protocols; agent-less to-repair (44%). operation, reducing rollout, and ongoing management efforts; 'live' network map of Software[™] include: the entire IT Infrastructure; ability to scale to monitor thousands of network devices; fully managed, 24/7 monitoring from cardonet's experienced technology team.

means less time tweaking settings and more time advancing network capabilities.

Designed for modern networks, AKIPS offers intelligently adjusted polling based on data flow, and ensures optimal without overwhelming performance infrastructure. Alerting is fine-tuned to offer critical insights, empowering the team to maintain peak network efficiency and reliability.

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Paessler PRTG has long had the ability to monitor multiple device types. applications, and databases. However, probes - which sit between the PRTG core server and the sensors - have, until now, required the presence of a Windows machine to run. The multi-platform probe for PRTG changes this, allowing customers to leverage different hardware and operating systems for their network deployments, without compromising monitoring performance across on complex networks.

of the equation. Factor in setup, maintenance, training, and the potential cost of integrating the system with existing infrastructure. Also calculate the potential savings or revenue generated by resolving issues like downtime or inefficiency. Tools with token-based pricing models can lead to unpredictable costs as monitoring requirements increase. In contrast, others will charge based on the number of devices monitored, providing a more predictable pricing structure.

Embrace innovation and futureproofing

Modern network monitoring solutions are evolving to incorporate cloud capabilities, vendor APIs, and Al-driven analytics. When assessing options, inquire about the vendor's innovation roadmap. Will the system leverage cutting-edge technologies, and are upcoming features relevant to your organisation's needs?

Selecting the right network monitoring equipment is more than a purchase; it's a strategic investment in your organisation's infrastructure and future. By aligning your choice with your current needs, future ambitions, and broader goals, you can ensure that your chosen solution delivers maximum value, driving both operational efficiency

■ Entuity Software[™] empowers ITOps 24/7 Network Monitoring Service teams with the tools and insights needed features include network performance to maintain and enhance infrastructure monitoring and management; server and performance, fostering a more efficient, and adaptable IT analyser for utilisation and bandwidth infrastructure. Entuity supports thousands configuration of devices, from hundreds of OEMs. management to help with compliance; out of the box and significantly reduces

The primary benefits of using Entuity

Enhanced efficiency: Entuity significantly streamlines asset management, allowing ITOps teams to focus on critical tasks without being bogged down by event noise and lengthy repair times.

Improved visibility: With features like SurePath Application Path Monitoring and live topology mapping, teams gain real-time insights into network performance, making it easier to identify and resolve issues promptly.

Auto Reduced operational costs: discovery, asset management, and configuration management functions help in reducing manual efforts, lowering operational expenses, and ensuring network resources are optimally utilized.

Scalability and flexibility: Entuity can easily scale with growing network demands and adapt to evolving technological landscapes.

bility and performance: software's robust monitoring Reliability The capabilities ensure high network uptime and performance, which is crucial for maintaining seamless business operations.

and business growth.

NOVEMBER/DECEMBER 2024

Please meet...

Mark Grindey, CEO of Zeus Cloud

Who was your hero when you were growing up?

Field Marshall Montgomery has always been my hero since my formative years. I've always admired his leadership qualities and strategic brilliance, all of which has had a big impact on my life up until this point. For those who don't know, Field Marshal Law Montgomery was one of the most prominent and successful British commanders of the Second World War (1939-45). Affectionately known as 'Monty,' he commanded the Allies in North Africa and in the subsequent invasions of Italy and Normandy.

What was your big career break?

My significant career break was when I first secured the NHS as a client for a software system. It's never easy to break into the NHS, due to the fact that there are a lot of hoops you have to jump through. However, I managed to succeed and this deal not only elevated my professional trajectory, but also allowed me to help contribute to the healthcare sector.

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

When I was younger, like most young boys, I aspired to join either the military or the police force. And I was lucky enough to achieve my dream of serving in the military. Unfortunately though, I sustained an injury and was medically discharged, which altered my career path. However, soon after I found myself a role training police officers in intensive driving, which allowed me to combine my passion for the service with the opportunity to train and support others. It was also a lot of fun!

If you could dine with any famous person, past or present, who would you choose?

There are so many people I can think of for this. Choosing between Michael Caine, Victoria Wood, and Julie Walters for dinner would be a tough call. Every one of them is brilliant in their own right, and their respective fields fascinate me, so, I simply can't decide. I would have them all over if I could... I think they'd probably all get on quite well too.

What's the greatest technological advancement in your lifetime?

There have been so many amazing advancements in technology during my lifetime. Artificial Intelligence, Virtual Reality and Smartphones are just a few examples of tech that have transformed or are transforming our day to day lives from the last couple of decades alone. However, the greatest technological advancement in my lifetime has been the transition from dial-up to broadband. The transformative impact that this advancement has had on communication and the ability to access information simply cannot be beaten, and it's opened up so much more room for even more innovation as a result.

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

Out of all the great quotes out there, my grandpa, who has been a significant person in my life, taught me my favourite. He once told me, "Don't count your chickens before you have them." I love this advice, because it's a nice down-to-earth reminder of the importance of staying focused on the present and has proven to be great advice in both my personal and professional life.

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

I love my current job and would not want to swap what I do at the moment for anything, but If I had to transition to a different industry at this stage of life, property development would be my first choice. The idea and prospect of being able to create spaces and contribute to urban development has always intrigued me. It seems like an interesting field to work in too. The idea of being able to put my own stamp on a property and creating a home to suit someone's needs is also really exciting. Imagine how great it would feel to finish a job, sit back and think, 'I did that.'

Where would you live if money was no object?

If I had to choose and money really was no object, I would want to live somewhere like Ypres in Belgium. Not only is it a beautiful part of the world, but it holds a special place in my heart because of the historical significance it had in WW1, as well as the serene atmosphere it has. To me, it is a delightfully ideal place to reside.

The Rolling Stones or the Beatles?

Those are two great bands there. I enjoy the Rolling Stones. However, when it comes to comparing them to The Beatles, obviously, there is no contest for me. The Beatles win, hands down. My favorite album of theirs is Abbey Road, it's got some great songs in there. What I love most about The Beatles was that they weren't afraid to take risks with their music – and this ability to experiment, for me, is the reason they were so ahead of their time when it came to the songs they produced.

What would you do with £1 million?

To be open with you, if I was handed £1 million, I would invest it in open-source tech start-ups. Being able to support innovation and foster collaborations would be a fantastic way to invest the money. Doing something like this would also align with my vision for the future as well as Zeus Cloud's company ethos; "Compassion, Protect, Innovate." ■

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THE MOST IMPORTANT TECHNOLOGY EVENT FOR BUSINESS IN THE UK