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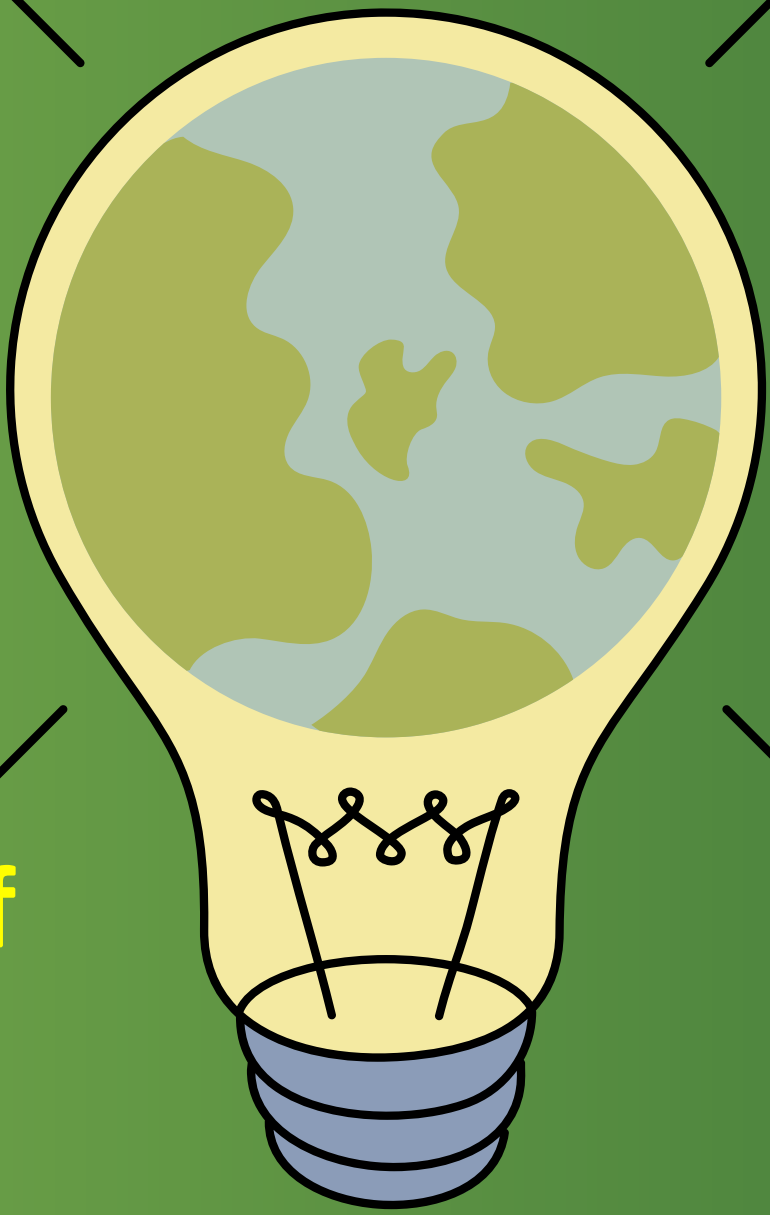

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When disaster strikes

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When it comes to data centre outages, an internet search can find numerous horror stories. Take the events at Amazon Web Services (AWS) last year, when downtime, which was attributed to application programming interface (API) and console issues, affected AWS' US-EAST-1 data centre in North Virginia. Earlier this year Interxion suffered a four hour power outage at one of its London data centres. A number of customers were affected and electronic trading at the London Metal Exchange (LME) was prevented for around five hours.

So is data centre downtime simply bad luck, or is enough being done to identify the measures that should be taken to avoid this type of event happening and ensure that facilities maintain their expected levels of service? That's the subject our chosen experts examine in this month's Question Time and they suggest how any preventative measures should be incorporated into a data centre's operational activities.

Also in this issue we have a feature on UPS and power distribution. Jon Barker of Chatsworth Products (CPI) explains why effective power monitoring requires the integration of intelligent power distribution units (PDUs) and data centre infrastructure management (DCIM) software, while Michael Akinla of Panduit explains the critical factors for UPS success.

They are joined in our second feature on wireless networking, where Nick Henley of Cordless Consultants examines the interplay between wireless technology and smart buildings. He's followed by Gary Newbold of CommScope, who explains how venue and campus experiences are being enhanced through wireless networks.

With lots more besides, I hope you enjoy this issue of Inside_Networks and if you'd like to comment on any of these subjects, or anything else, I'd be delighted to hear from you.

Rob Shepherd
Editor

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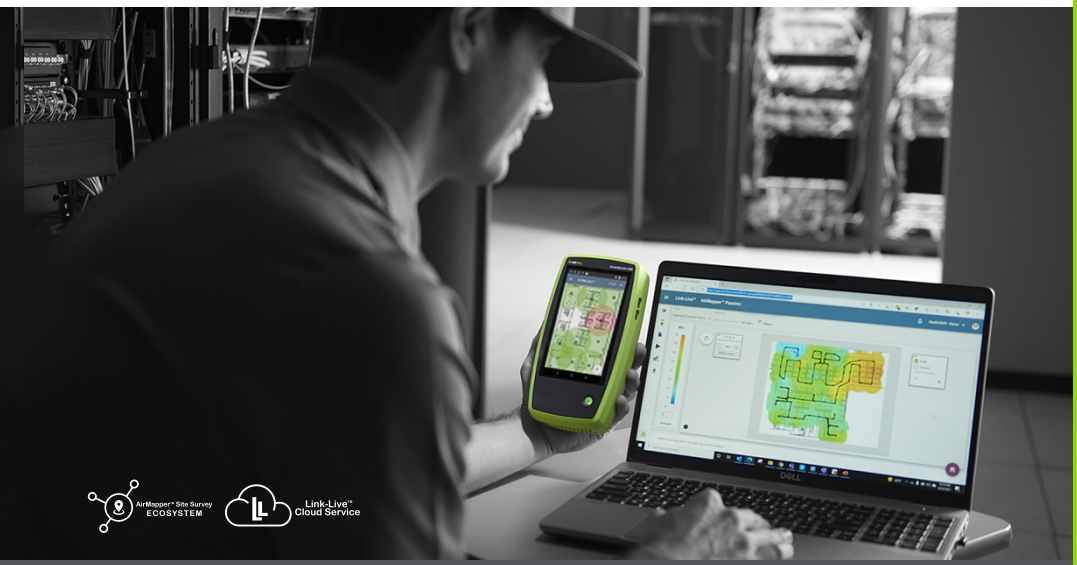

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52 per cent of women believe their gender is limiting their careers in the tech industry


Ruta Cizinauskaite

According to data presented by Atlas VPN, 52 per cent of women believe their gender is limiting their career in tech, and one-fifth of women are thinking about leaving their current positions. Women see a lack of promotion opportunities as the most significant barrier to their career advancement in the tech industry.

For 35 per cent of women, a lack of confidence is one of the core impediments of career continuation in tech. Meanwhile, 33 per cent find a lack of relatable senior role models and senior sponsorship a problem. Other tech career barriers for women include difficulty balancing work and other responsibilities (31 per cent), and sexism and gender bias (29 per cent). Women currently take up less than one-fourth of technical roles in big tech companies.

Ruta Cizinauskaite, cybersecurity researcher and writer at Atlas VPN, said, 'The lack of women representation in tech is an issue that has been ignored for far too long. To begin with, we should acknowledge the barriers that prevent women from continuing to pursue careers in tech and work to remove them. Only by working together can we make a difference.'

Barriers to cloud adoption remain but security is no longer the biggest inhibitor


Alex Hilton

The Cloud Industry Forum (CIF) has found that 32 per cent of business and IT decision makers believe security concerns are holding their organisation back from fully advancing technology usage. While security remains a key hurdle, it is no longer the main inhibitor to tech adoption, ranking behind lack of budget (34 per cent) and legacy integration issues (44 per cent).

The data also underlined the integral role that cloud continues to play in the ongoing transformation of businesses. Almost all respondents (96 per cent) said cloud has saved their organisation money, while 61 per cent said their company is more secure thanks to cloud technology. Despite this, 37 per cent said that it is easier to source capital expenditure budget than operational expenditure.

Alex Hilton, CEO at the CIF, said, 'It is hugely encouraging to see that after 12 years of CIF reports, security is no longer the biggest issue standing in the way of cloud adoption. The fact that respondents almost universally recognise the ability of cloud to save the organisation money also bodes well for the future.'

Open Compute Project Foundation welcomes new CEO

The Open Compute Project Foundation (OCP) has appointed George Tchaparian as its chief executive officer (CEO). Tchaparian is a seasoned technology executive with more than 30 years of industry experience at all corporate levels and functions. Most recently, he was a corporate executive focusing on transformative next generation strategies for the Accton Group


George Tchaparian

'I am honoured and incredibly excited to be assuming the role of the CEO for OCP,' commented Tchaparian. 'As an active member, contributor and volunteer leader for most of OCP's history, my passion continues to be fuelled by enabling OCP members and its industry ecosystem to accelerate innovation to meet the long-term opportunities of both technology and business challenges of our community. OCP has a bright future ahead and I look forward to working to execute our next generation strategies and broadly apply OCP leadership to deliver greater value.'

UKTIN aims to make UK a world leading centre for telecoms innovation

The UK aims to be a world leader in telecoms research and development (R&D) under plans for a new government funded organisation dedicated to boosting innovation in the country's telecoms supply chain. The UK Telecoms Innovation Network (UKTIN) will act as an information point for telecoms companies looking to access funding or testing facilities for R&D, and opportunities to collaborate on developing new and improved technologies for mobile and broadband networks.


Julia Lopez

The UKTIN will be run by a consortium of organisations with telecoms expertise and will support knowledge sharing and collaboration on open and interoperable network technologies such as Open RAN, which allows telecoms companies to mix and match telecoms equipment rather than having to rely on a single supplier when building or maintaining networks. The technology is considered crucial to the government's £250m strategy to lower barriers for firms seeking to enter the UK telecoms supply chain.

Minister of state at the Department for Digital, Culture, Media & Sport, Julia Lopez, said, 'The UKTIN will be the first port of call for any telecoms company looking to access R&D funding and a matchmaker for firms looking to join forces on cutting edge projects. Ultimately, this is about making the UK the best place in the world to develop rapid and seamless new technology for the digital networks that will power our economy well into the 21st century.'

Skills shortages remain the top barrier to industrial IoT adoption

Inmarsat has found that skills shortages hindering internet of things (IoT) innovation, inhibiting adoption and the effectiveness of IoT deployments across businesses. According to its research, based on interviews with 450 global respondents, organisations don't always have the skills they need to fully utilise their IoT projects.

A lack of in-house skills remains the top barrier to IoT deployment for 37 per cent of all respondents in the study. Underlining the importance of having a strategic approach to IoT at leadership level and the right policies in place to support this, the research shows those organisations with a formal IoT strategy have far more strategic support for IoT at board level – 47 per cent, compared to only 19 per cent of those without one.


Mike Carter

Mike Carter, president of Inmarsat Enterprise, said, 'It is particularly concerning to note that, amongst those organisations lacking specific knowledge, almost half are missing security, data science and connectivity technology skills. More businesses need to develop formal IoT strategies to prioritise IoT at the boardroom level and to develop better relationships with IoT service providers.'

Equinix expands into Chile and Peru with $705m acquisition of Entel data centres

Equinix is expanding into Chile and Peru through its intended acquisition of four data centres from Empresa Nacional De Telecomunicaciones (Entel) for approximately $705m. The acquisition is expected to close in Q2 of 2022 and includes three data centres in Chile and may also include one data centre in Peru, pending finalisation of a definitive agreement.

According to IDC, enterprise edge spending in Latin America is expected to reach $8.573bn by 2024, and in Chile it is anticipated to grow by double digits in the same period. Furthermore, between 2020 and 2024, IDC anticipates that cloud spending in Chile will increase 34.6 per cent.


Charles Meyers

Charles Meyers, president and CEO at Equinix, commented, 'Latin America holds enormous potential and our commitment to the region has grown exponentially since we entered back in 2011. Chilean, Peruvian and multinational companies are thirsting for the digital infrastructure required to thrive in today's economy and we're broadening digital access and accelerating digital transformation across Latin America.'

One in five employees involved in data security breaches at work

One in five employees in the UK have been involved in a security breach or loss of sensitive data, according to research from Impero Software. The research, based on a survey of 2,000 employees, reveals that more than half (56 per cent) use personal devices to access company data and systems, on average, three times a week.


Justin Reilly

The results also show that 91 per cent of employees who have been involved in a security incident use personal devices to access sensitive data while at work, with half of this group (51 per cent) doing so without adhering to a robust device security policy. 42 per cent say their organisation does not enforce a security policy to control how personal devices can interact with sensitive information.

Justin Reilly, CEO at Impero Software, said, 'Many employees feel their employers are not equipping them with the knowledge and tools they need to work securely. Employees shouldn't need to be worried or threatened by the prospect of security breaches – their employers should provide the tools and training they need to feel secure.'

NEWS IN BRIEF

North American data centre leasing reached record levels in 2021, according to CBRE. There was 493.4MW of net absorption in the seven primary US data centre markets during the year – a 31 per cent increase over 2019's then record level, and up 50 per cent from 2020. Despite a 17 per cent year over year increase in primary market inventory, vacancy fell to just 7.2 per cent.

Due to the ongoing conflict, Trend Networks is no longer supplying cable and network test equipment and products to Russia or Belarus. There will also be no sales, technical support and spares or parts shipped to the region. In addition, Trend Networks will not be purchasing any products or components from Russia or Belarus.

Belden has acquired Macmon Secure. The acquisition brings proven network access control (NAC) and secure defined perimeter (SDP) software to protect networks and cloud resources into Belden's portfolio of solutions.

i3 Solutions Group has appointed Luke Neville as managing director of the company's UK operations. His main areas of expertise lie in critical systems and mechanical cooling design and he has extensive knowledge of providing innovative, resilient, flexible and energy efficient data centre design solutions.

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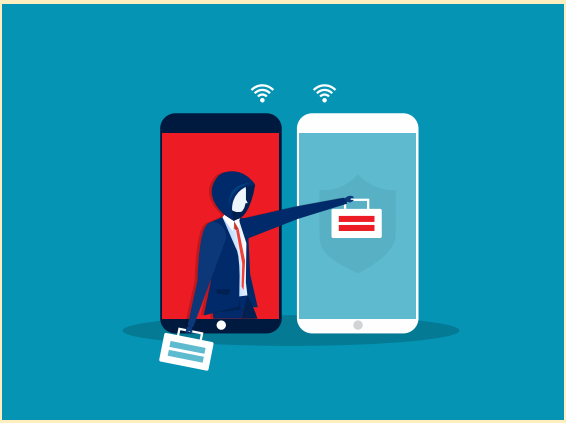
The times they are a-c

Hi Rob

The rise of self-directed work since the coronavirus pandemic will see many corporate teams become boss-less for an era where business agility requires team empowerment and autonomy. Networking and IT professionals are gaining independence and responsibility and it'll be essential to separate 'management' from the traditional 'manager' role to reap the benefits of business agility and hybrid work.

IT is shifting its focus from keeping systems running to connecting with business strategy and objectives. This rumbling industry discussion will finally kick in more earnestly, according to IDC, which predicts that 'by 2023, mid-sized to large enterprises will transition 50 per cent of IT staff, driving connectedness from tactical legacy network support operations towards strategic business outcomes, technology innovation and service delivery'.



At the same time, hackers are 'homing in' with multiple approaches to gain access to the corporate network. We're seeing autonomous remote workers on less secure personal networks. New breach attempts will be harsh and rife, sparing no industry. With workers complacent, personal devices below corporate grade security are fair game. Remote IT support poses an additional risk, with hackers using social engineering to finagle credentials from unsuspecting workers.

With remote working now the norm, rapid and robust connectivity is table stakes, which includes bandwidth on tap for the ultimate videoconferencing experience. IT will be continually pushed by remote workers' new connectivity demands, as the office becomes a distant past. In their attempts to damage the network, hackers will go for network kit, assume control and paralyse business operations. Cyberattacks will be persistent for the network and all elements within it. And if they commandeer network devices, they're in charge.

Tech teams know to adopt a minimum zero trust policy, which allows access on a must need basis. Segmentation and even micro-segmentation is necessary to safeguard systems from ransomware attacks – protecting everything is key.

Network outages will increase, so network resilience is everything. Outages can also mean longer-term reputation damaging situations. The increasing intelligence of hackers has seen even Microsoft and Amazon Web Services fall victim – there's just no such thing as being too secure.

hangin'

Application experience matters and is worth fighting for. With availability now a given, organisations are upping their game in end user experience. It's worth vendors watching their product performance too, as it's becoming less and less of a hassle for end users to switch to a competitor if they're having a poor experience.

Finally, in times of increased social awareness and political agenda, organisations need to know how their employees use their network and what they're doing on it. Workers can't always be trusted to toe the political line and anything that goes viral needs instant action. Forewarned is forearmed on issues around environmentalism and diversity to protect customer and stakeholder relationships.

Mark Towler
Progress

Editor's comment

Mark covers a lot of ground here and it's clear that there will be considerable challenges during the rest of 2022 and beyond. The fact that network outages are on the increase should be setting alarm bells ringing and robust business continuity strategies need to be put in place. 'There's just no such thing as being too secure' – wise words indeed.

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Better safe than sorry

The financial consequences of data centre downtime are well documented and any interruption to business continuity must be avoided at all costs. Preventing downtime is usually easier said than done though, so Inside_Networks has assembled a panel of industry experts to identify the measures that should be taken to avoid it happening

Network downtime is enough to make the most experienced data centre owner, manager and/or end user break into a sweat and the subsequent cost of this happening can be enormous. 99.999 per cent service uptime is generally considered the benchmark for data centre reliability, which equates to 5.26 minutes downtime per year or 6.05 seconds per week.

While human error is the basis of a significant number of problems, many are caused by failure of the automated failover mechanisms. For example, in January Interxion suffered a power outage at its LON1 facility. It was reported that despite redundant power feeds being in place, electronic switchgear designed to change the power over to an on-site generator also failed.

In order to provide some advice on what can be done to reduce a data centre's vulnerability, Inside_Networks has assembled a panel of experts to offer their advice on the preventative measures that can be put in place to ensure high levels of business continuity.

Don't forget, if you have a question that you would like answered **CLICK HERE** and we'll do our best to feature it.

CARRIE GOETZ

PRINCIPAL AND CHIEF TECHNOLOGY OFFICER AT STRATEGITCOM

Downtime is not always an avoidable occurrence. The trick is to have the right resiliency protections in place and the right processes for the inevitable 'what if'.

For a long time in this industry we have downplayed resiliency in IT equipment and software in favour of power and cooling redundancy. However, downtime comes in a variety of flavours. Sometimes the flavour is a brand new one! You can't engineer for the unknown in the same way you engineer for known culprits. Companies are looking at solutions that can ride over the top of providers' protections.

Redundancy carries a price. The risk to reward calculations are being updated across many enterprises as we speak. It's funny how things change. Cloud was supposed to be the answer to so many IT problems but we have learned that the cloud also goes down.

Companies hit by malware, if they survived, are heavily investing in vaults to isolate data stores, office environments and systems against bad actors, while providing near instant restorations. Companies that were hit by cloud outages are now implementing multi-cloud strategies for critical applications or bringing some of their critical compute back in house. The number of resiliency/redundancy options are factorial.

Root cause analysis (RCA) exercises, when done correctly, are a great way to ascertain causal information to assure a particular incident is thoroughly addressed. It's easy to just make assumptions or take a quick action, but there should be a process to do an actual triage of what went wrong.

RCA must have top-down support and all participants should be free to speak without fear. In fact, an agreement to participate in RCA activities should be part of any contract with outside providers. It simply isn't feasible to do any post-mortem RCA exercise without input from all parties.

Once the cause is determined, it's time to try solution(s). You should not expect this to be a once and done solution. Sometimes you must try solutions to see if they are, in fact, the best remedy. Gather, iterate, test, repeat and document.

'FOR A LONG TIME IN THIS INDUSTRY WE HAVE DOWNPLAYED RESILIENCY IN IT EQUIPMENT AND SOFTWARE IN FAVOUR OF POWER AND COOLING REDUNDANCY. HOWEVER, DOWNTIME COMES IN A VARIETY OF FLAVOURS. SOMETIMES THE FLAVOUR IS A BRAND NEW ONE!'

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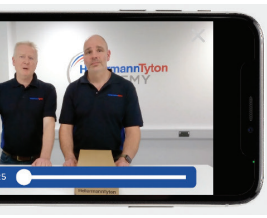

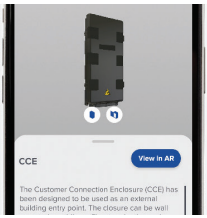

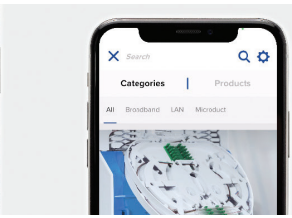

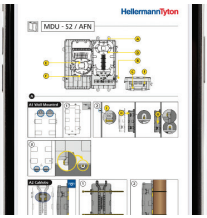

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KEVIN SHIEBER

VICE PRESIDENT OPERATIONS & TECHNOLOGY AT COLT DCS

In implementing measures to minimise the likelihood of a data centre outage, there are three key areas to consider.

Firstly, at the building stage, single points of failure should be avoided and all key elements of operations must be resilient – whether that is generators to mitigate a power outage or multiple duct routes into the site to protect the supply of network and utility services. Not only does this ensure a data centre is robust and resilient, having secure reserve options allows essential maintenance to be carried out on equipment with no impact on availability of service to customers.

The geographical location of a building is also crucial to minimise environmental risk to operations. For example, Colt DCS recently built the Osaka Keihanna data centre in Osaka, Japan, rather than Tokyo where other data centres are located. In a country where seismic activity is high, the two cities sit on different tectonic plates and do not experience the same earthquakes at the same time. This provides opportunities for customers to distribute their loads across multiple sites in geographically and geologically separated regions.

The third area of risk is employees. The people working in the data centres are at the centre of operations and can be the cause of outages. With technology operating with a high degree of resilience and reliability, human error has been at the root of many outages.

It is vital that every employee is not only sufficiently trained in day to day operations, but also the handling of crisis scenarios. Strong communication and change management controls are essential in ensuring, for example, that teams do not simultaneously, and unknowingly, carry out actions creating single points of failure, which then combine to result in failure.

In achieving a strong business continuity strategy, nothing can be left to chance and all scenarios must be planned for.

‘IT IS VITAL THAT EVERY EMPLOYEE IS NOT ONLY SUFFICIENTLY TRAINED IN DAY TO DAY OPERATIONS, BUT ALSO THE HANDLING OF CRISIS SCENARIOS. STRONG COMMUNICATION AND CHANGE MANAGEMENT CONTROLS ARE ESSENTIAL IN ENSURING, FOR EXAMPLE, THAT TEAMS DO NOT SIMULTANEOUSLY, AND UNKNOWINGLY, CARRY OUT ACTIONS CREATING SINGLE POINTS OF FAILURE.’

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ALFONSO ARANDA ARIAS

VICE PRESIDENT SITE OPERATIONS EMEA AT VANTAGE DATA CENTERS

Outages, and downtime in general, are a result of the materialisation of various risks and the inability of the infrastructure and operations personnel to respond fast enough, control the impact and minimise the extension of its effects. The risks concerned emanate from the data centre's physical location and exposure to natural and manmade hazards, its inherent design and construction – for instance, single points of failure and fault tolerance – and human error in terms of insufficient knowledge or incorrect execution.

To minimise downtime it is essential to integrate and implement operational measures prior to, as well as during, a data centre's operation. Pre-operational measures should commence with a complete review and understanding of the design, construction and permitting documentation to fully understand the purpose of the infrastructure, its capacity and resilience level. It should also include any operability and maintainability constraints that will be contributing factors of human error – including the level of complexity of the installation.

It is important to formulate the key processes and procedures that will be used during the operational phase of a data centre. For example, staff selection, onboarding, training and certification; alarm response; root cause analysis (RCA); incident, change, maintenance and risk management; closed loop continuous improvement; and checklist based step by step procedural documentation.

In addition, perform a thorough validation of the capacity, redundancy and resilience of the data centre infrastructure – testing the accurate representation of the physical infrastructure in the building management system and the correct functioning of the automation and alarms. Review the normal operating mode of the infrastructure and its main failure modes including the testing of loss of communication with the automation system and other 'unforeseen' failure modes. A further prerequisite is checking for any deviations in the 'as built' documents and the physical infrastructure, ensuring every valve, breaker and cable is correctly labelled.

As the data centre transitions into the operational phase, instil a regime of 'proactive paranoia', which encompasses rigorous change management, infrastructure testing and incident feedback, and adheres strictly to the continuous risk management action plan. Combined with a culture of transparent communication and continuous improvement, rewarding early detection, action, RCA and follow-up, these steps will eliminate, reduce and control the risk of unplanned downtime.

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RUSSELL POOLE

MANAGING DIRECTOR UK AT EQUINIX

As businesses become increasingly reliant on digital infrastructure to function, it is essential that mission critical IT systems remain fully operational at all times. The biggest single cause of data centre failure is a loss of on-site power. The resulting downtime can lead to catastrophic financial losses as digital operations are temporarily paralysed.

The positive spin is that many of these failures caused by a power outage can be prevented by introducing sufficient power redundancy and using best practice to configure a contingency strategy. Most businesses do have access to redundant power supplies, but many are not leveraging their full capabilities.

Data centre builds must now include full uninterruptible power supply (UPS) systems, with N+1 redundancy levels and back-up generator systems in the event of a local utility failure. In this scenario, batteries kick in, shortly followed by on-site generators capable of powering the entire data centre.

Facility designers should also think about how the power loads between redundancy power feeds can be better managed. Many companies are putting more than 50 per cent load on one of the circuits, making it impossible for a single circuit to take on the full load in the event of a UPS or circuit failure. A better method is to equalise the load on each circuit, so that if one fails the other can manage 100 per cent of the power requirement.

In addition, there is far greater use of multisite resiliency to limit the impact of a single site facility outage, as traffic and workloads are diverted elsewhere. However, the loss of one data centre places additional networking demands on other facilities, which may lead to performance issues. In response, colocation providers are going one step further and introducing 2N level facilities to manage their outage risk. This means that if one power source is interrupted, the other is able to accommodate the full load requirement for that data centre.

The threat of a sudden power failure can be mitigated by investment in redundancy systems, monitoring, diagnostics and recovery solutions. This initial outlay ensures that companies are better protected against these highly disruptive events and can minimise the negative impact to their services and customers.

‘THE BIGGEST SINGLE CAUSE OF DATA CENTRE FAILURE IS A LOSS OF ON-SITE POWER. THE RESULTING DOWNTIME CAN LEAD TO CATASTROPHIC FINANCIAL LOSSES AS DIGITAL OPERATIONS ARE TEMPORARILY PARALYSED.’

CHRIS CROSBY
CEO AT COMPASS DATACENTERS

The scale of digital infrastructure has grown in ways that were inconceivable when I entered the data centre field. And that infrastructure now powers the operations of companies across every sector of the economy, in every corner of the globe.

That has changed, but the importance of uptime has not. Utility level reliability and availability is a prerequisite for infrastructure as critical as data centres, and the outages you refer to are a wake-up call for our industry. It's also a reminder of something that has been a constant from the earliest days of data centres – the number one cause of downtime, by far, is human error.

People make mistakes, and even small errors can have major consequences. Having processes that help people perform at their best is therefore indispensable for increasing uptime. That is particularly true as the scale of data centre infrastructure continues to expand at warp speed.

Data centres cannot operate without data centre professionals, and our industry has been on a hiring spree to expand the workforce. We need an educated, highly trained workforce, which is why degrees in data centre science are so important. Pioneering schools like SMU are helping train the new generation of data centre professionals with the skills and experience to minimise these outages.

Data centres need to be built in ways that account for the human factor. My team has a continuous improvement philosophy that regularly revises our design strategy to help data centre operators pre-empt human error. That should be a guiding principle for every builder of digital infrastructure.

Another critical step toward increasing uptime is augmenting the performance of data centre professionals with tools like virtual checklists that prevent steps from being skipped, and mobile virtual reality apps that ensure operational and maintenance processes are closely followed. Involving those professionals in continuous improvement initiatives is equally important because no one knows these facilities better than they do.

Our industry should empower employees to identify areas for improvement that will increase uptime and remove areas where human error can intrude. These kinds of changes are more important than ever as our workforce expands so rapidly to meet the massive demand for data centre facilities.

'UTILITY LEVEL RELIABILITY AND AVAILABILITY IS A PREREQUISITE FOR INFRASTRUCTURE THAT IS AS CRITICAL AS DATA CENTRES, AND THE OUTAGES YOU REFER TO ARE A WAKE-UP CALL FOR OUR INDUSTRY.'

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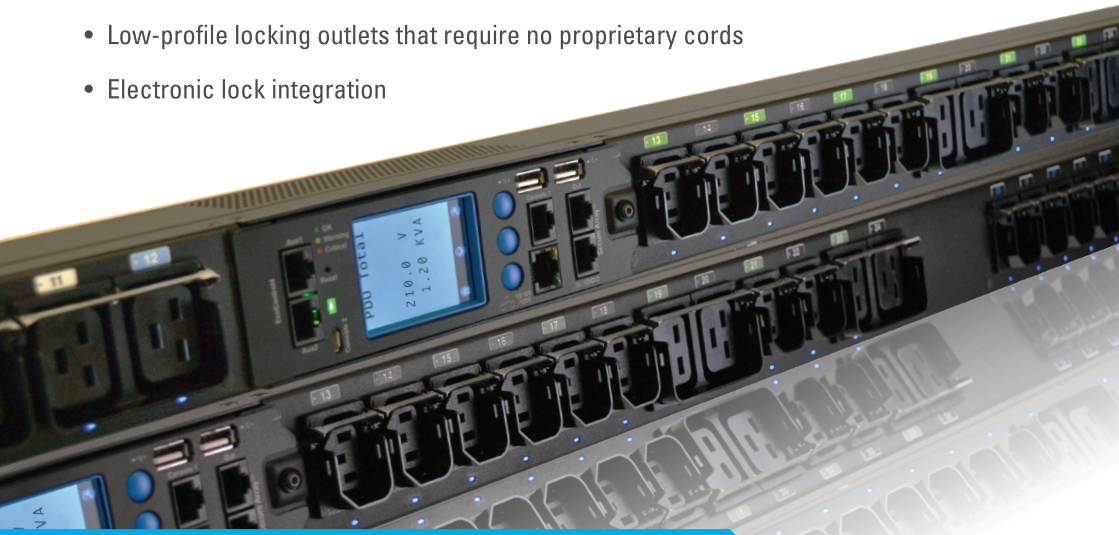
CHATSWORTH PRODUCTS

After more than 20 years of powering your IT investments, Chatsworth Products' (CPI) introduces the next generation of eConnect® power distribution units (PDUs). Its high-performance features are designed with your availability and efficiency goals in mind:

- Redundancy pack with one black and one white PDU for easy identification of side A and B
- Market-leading temperature ratings of up to 149°F (65°C) for high-density applications
- Field-replaceable controller module for simple serviceability
- Secure Array® allows the use of a single IP address for up to 32 connected PDUs
- Phase-balance outlets
- Low-profile locking outlets that require no proprietary cords
- Electronic lock integration



Visit **chatsworth.com/power**

to see the next generation of eConnect PDUs.

STEPHEN BOWES-PHIPPS

SENIOR DIGITAL INFRASTRUCTURE CONSULTANT AT PTS CONSULTING

Studies have shown that a vast majority of events in the data centre are attributed to human error. This is a good thing from a facilities management perspective. After all, if the major cause was technical failure, it would call into question the design philosophy, poor product choice and/or inadequate maintenance. However, unplanned outages of any sort are not acceptable to clients and can be fatal to a data centre brand, as well as the stress levels of those who work there.

Excellent operational activity doesn't happen by chance. It is about understanding the risk profile of your operation and the data centre itself. This frame of reference is what you use to develop, maintain and execute policies, processes and procedures. Only by reviewing your current risk environment and mapping those risks back to your business impacts – people, financial, brand/reputation, legal/regulatory and customers – can you prioritise effectively to work towards a mature, highly available operating environment.

The Deming Cycle – or Plan-Do-Check-Act (PDCA) – is a four step iterative technique used to solve problems and improve organisational processes. PDCA is a must have tool for all operational managers and is especially relevant for the data centre, where critical facilities meet technology and health and safety.

The key part of this technique is the review stage – this is where susceptibility to downtime and greatest risks can be uncovered and assessed. Every data centre should have a centralised risk register, regularly reviewed by the senior team.

Roles and responsibilities for every function in the data centre must be understood by everyone and the best facilities will undertake regular scenario testing, both as desktop reviews and as dry runs. When was the last time you checked that, in an emergency, the fuel company can deliver to you within the service level agreement? Prior to the coronavirus pandemic, how many data centres considered how they would cope if a lot of staff were off sick or unable to travel into the office?

Considering and planning for all risk scenarios, no matter how unlikely, and understanding how you and your staff will react in an emergency situation is key to creating a safe and happy working environment, keeping costs down and delighting clients!

'EXCELLENT OPERATIONAL ACTIVITY DOESN'T HAPPEN BY CHANCE. IT IS ABOUT UNDERSTANDING THE RISK PROFILE OF YOUR OPERATION AND THE DATA CENTRE ITSELF.'

Ready, willing and

The Uptime Institute has approved a new range of innovative Tier III ready modular data centre designs from Cannon Technologies and its partners including Centiel

A range of innovative Tier III ready data centre designs has now been fully approved by the Uptime Institute. The team at Cannon Technologies, working in conjunction with several original equipment manufacturers (OEMs) including Centiel, has spent more than three years developing a pre-certified set of solutions, which are now available in ratings of 100kW, 250kW, 500kW and 1MW.

Working together

Mark Awdas, engineering director at Cannon Technologies, explained, 'The first 100kW data centre solution, using a 2N design configuration, was completed and approved in 2019 and since then we have worked closely with our industry partners to make various Tier III data centre designs available for facilities requiring different sized systems. Uptime Institute approval means our customers now have fact based evidence that their final build will more easily obtain their final Tier certification.'

He added, 'We now have four Tier III ready modular data centre designs described as concurrently maintainable, which ensures that any component can be taken out of service without affecting production. It's been a long and detailed process, but now clients can purchase a Tier III ready data centre solution to match their needs. This will dramatically speed up their time to market, reduce the associated design and engineering costs, and also remove the risk and cost associated with alternative options.'

Tried and tested

Centiel's leading three phase, true modular CumulusPower uninterruptible power supply (UPS) solution and technical support

d able

centiel
continuous power availability

CANNON TECHNOLOGIES GROUP

was chosen to be incorporated into the designs. The technology offers the highest levels of resilience, is flexible, robust and has been tried and tested in many scenarios.

Louis McGarry, sales and marketing director at Centiel UK, confirmed, 'We have worked closely with Cannon Technologies to help with the design and implementation of our industry leading CumulusPower true modular UPS technology for the Tier III ready data centre design. CumulusPower offers the highest level of uptime available, and the extensive range of frame sizes means that modules can easily scale to ensure capacity in each system.'

He added, 'It's been great working with the Cannon Technologies team and harnessing our combined technical expertise to overcome the various challenges to create a certified Tier III data centre. It offers a rapid and convenient answer to implementing a fully inclusive and certified solution.'

Bigger picture

The CumulusPower UPS is only one element of the whole approved set of Tier III data centre solutions that have been developed. Cannon Technologies has also collaborated with other partners to provide a complete solution that includes generators, switchgear, cooling and cabling, so the entire design can be offered as an approved product.

Mark Awdas concluded, 'The result is that any organisation now looking to implement a Tier III data centre can purchase a pre-approved design and all the equipment for what is essentially a fixed price. We just need to reassess the figures for the environmental element depending on the location of the installation. Customers can push forwards with confidence, safe in the knowledge the configuration is already Uptime Institute certified.'

To find out more **CLICK HERE.**

www.centiel.co.uk

www.cannontech.co.uk

TIER-Ready Uptime Institute® III

Manufacturer: Cannon Technologies, Ltd

Model: Cannon Data Center Campus TRCHW1000KW CDCC 1,000-kW Basis of Design

Expires January 2023

Supply and demand

Michael Akinla of Panduit explains the critical factors for uninterruptible power supply (UPS) success

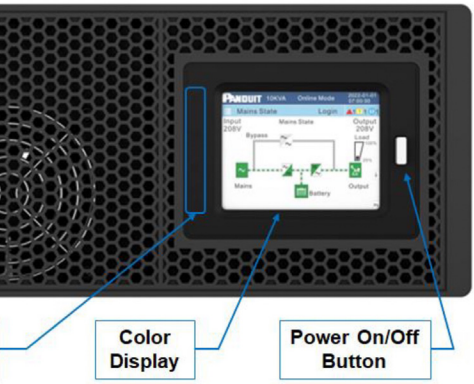
The UPS is one of the key components in any environment where continuous electrical power to IT equipment is mission critical. By 2025 the UPS market is set to expand to $13bn. Unprecedented demand, coupled with a failure to invest in transmission grid infrastructure and the growing reliance on renewable energy, have led to increased pressure on the network to support the growth in data centres and other power hungry applications. Even in the UK, which has a highly secure energy grid, we experience a major grid failure at least once a decade, as well as multiple smaller outages.

BEAR WITNESS

As we have witnessed from various data centre failures, when the power goes off unexpectedly and the back-up processes also fail the result can be catastrophic. Understanding a data centre's key variables and specific goals in individual situations will provide a clear decision making process.

On-site back-up electrical generation or storage systems such as diesel generators and battery UPSs are the bridge to a successful rollover of power and operational continuity. UPS capability provides power to essential systems to ensure processes can continue, while the generator sets power up to offer a longer-term energy supply to a facility.

The period between utility power failure and the IT load transitioning to the UPS is critical – milliseconds (ms) count in these situations. Any power interruption longer than 20ms will probably result in an IT system crash – extend that power delay to up to 60 seconds and the outage will result in an extended IT equipment restart process that will seriously affect data centre operations and customer applications. A lengthy outage may also incur financial penalties from customers and reputational damage. In a fairly conservative and cost conscious



A Front Panel

industry, it is still better to be safe than sorry.

FACTS AND FIGURES

Uptime Institute's Annual Outage Analysis 2021 stated that 44 per cent of data centre operators, and 59 per cent of suppliers/vendors, think that concern about resiliency of data centre/mission critical IT has increased in the past 12 months.

UPS technology and components are evolving. Rapid development of higher speed processors and storage at the server is also changing back-up energy requirements. IT applications that are being supported and the customers' risk tolerance, together with the application resilience, will dictate the capabilities of a UPS. Therefore, the data centre or customer must clearly recognise their needs before selecting the UPS to support this.

EVERY SECOND COUNTS

Hyperscale data centre applications are designed so that only 1-2 minutes of battery runtime is needed, and colocation sites typically require five minutes of runtime. In the financial market, where data is mission critical and even a small number of dropped trades could cost hundreds of thousands of pounds, it is typical to see 10-15 minutes as the UPS runtime. As one would expect, the longer the runtime required the larger the investment in UPS in both initial cost and operational expense.

In enterprise or edge computing environments where generators are unavailable, more time to safely and securely shutdown servers and other equipment may be a critical requirement and will be a deciding factor. However, overprovision of UPS with extended runtimes, where back-up generators are available, could be an unnecessary capital cost and additional ongoing expense that reduces overall profitability.

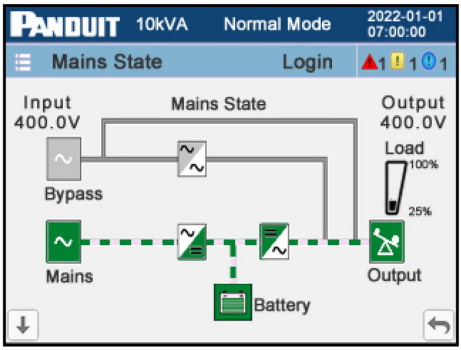
'Uptime Institute's Annual Outage Analysis 2021 stated that 44 per cent of data centre operators, and 59 per cent of suppliers/vendors, think that concern about resiliency of data centre/mission critical IT has increased in the past 12 months.'

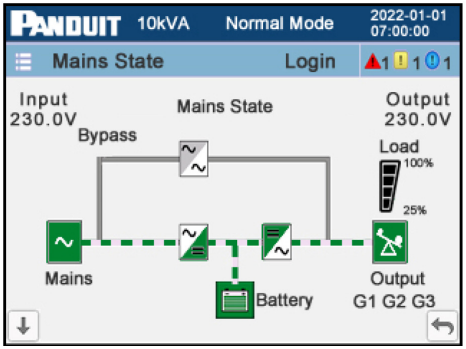
SELECTION PROCEDURE

It is essential to select UPSs that are suitable for the IT load they are supporting. IT running critical loads is a definite, and for higher speed processors generating more heat at the server, UPS for cooling systems targeting those servers is a critical load.

With that in mind, another key factor in the process is the UPS unity power factor. The latest UPS have a unity power factor of 1.0. For example, with today's modular capabilities a customer's 100kW IT load could be supported by five 20kVA, or a single 100kVA UPS, dependent on preferred configuration. However, what must be known is if the UPS's unity power factor is <1.0 and how that impacts the total UPS requirement for the critical load supported.

Modular UPS components are a solution when combining legacy UPS products in an environment that is upgrading to higher power rated IT equipment racks. The modular capability of these systems allows for the additional UPS kVA to match the upgraded rack kW, reducing costs and improving energy efficiency. The three stage charging method matching the most optimum power curve, together with temperature compensation using advanced algorithms, prolongs battery life.





DELIVERING THE GOODS

Lithium-ion (Li-ion) batteries now deliver more capabilities to the users as the technology becomes embedded within the key applications. Compared to lead acid, Li-ion batteries offer longer lifecycles, reduced weight, compact footprint and lower cooling

requirements, highlighting their potential in small data centres and edge environments. Their capacity for higher amounts of energy in smaller devices, with twice the life and cooler running, reduces the requirement for specific cooling systems. This offers the possibility of eliminating the need for separate battery rooms.

As the technology becomes more advanced, numerous management and safety features are being implemented to ensure far more granular data is available on battery health and connectivity. Reduction in size and weight will make it possible to integrate a Li-ion UPS into preconfigured data centres, allowing customers to order a complete critical system and for it to be delivered to any location, installed and connected to power and be operational in minutes. Intelligent power distribution units provide the backbone to these extended capabilities, with data management, connectivity and ease of maintenance.

The latest UPSs deliver increased efficiency, reliable power protection and back-up power for computer IT and other critical equipment. Modular systems allow for hot swapping, providing the platform for faster maintenance, and removal old or faulty individual units, when required, to ensure optimum capacity and immediate power when needed.

BRIGHT SPARKS

To continually meet the growing power demands of data centre, enterprise, and edge IT equipment, the latest Li-ion UPSs provide excellent electrical performance, intelligent battery management, enhanced intelligent monitoring, secure networking functions and long lifespan. Integration with cloud based data centre infrastructure management (DCIM) solutions provide support for monitoring, control and alerting across the wider environment including power chain, environmental, cooling, security, IT asset (physical and logical) and connectivity infrastructure. Changing technology invariably creates challenges to reduce outages, so UPSs remain a critical element in data centre best practice. ■

MICHAEL AKINLA

Michael Akinla leads sales in the UK and Ireland for Panduit's network infrastructure products. He brings 20 years' experience in the deployment of Panduit's most complex solutions and he has extensive experience in working with a number of large global accounts to bring about significant improvements in terms of higher bandwidth deployments, reduced Power Usage Effectiveness (PUE) and reduced total cost of ownership (TCO).

Salicru UK

Salicru is a well-established, market leading UPS and power electronics manufacturer. It now operates in the UK with its supported subsidiary, Salicru UK.

Since 1965 Salicru has been supplying UPS, variable speed drives, voltage stabilisers, DC systems and transformers to become the number one market leader in Spain. The Salicru brand is now supported and stocked in the UK, where the brand is rapidly growing due to its high quality products and wide range of power solutions.

The UPS product offering ranges from 500VA up to 1.5MW in a variety of technologies. The compact Online SLC TWIN RT2 range is proving to be extremely popular, as it's a 2U rack mounted UPS with powerful runtime potential. This range is available from 1kVA to 10kVA, single phase and is available with lithium-ion batteries.

CLICK HERE to get in touch with Salicru UK, call 0191 3077070 or **CLICK HERE** to send an email.

www.salicru.com

Vertiv

Managing mission critical IT sites can often be a major challenge. Take the complexity out of your deployments with hassle free and cost effective solutions from Vertiv.

With a market leading line-up of hardware, software and service solutions from the Avocent, Geist and Liebert brands, which are designed for rapid deployment and quick and easy start-up, building a robust solution under one roof has never been easier.

Whether it's network reliability, dealing with power outages or managing multiple IT sites, Vertiv's edge ready solutions are the perfect choice for you to manage, protect and power your distributed IT environments.

For more information **CLICK HERE.**

vertiv.com

EDP Europe

EDP Europe's custom built intelligent PDUs (iPDUs) are designed, manufactured and supported in the UK, providing a comprehensive and cost effective solution for the monitoring and management of rack power – either locally or remotely.

Because they are custom built, EDP Europe's iPDUs can be configured to meet specific requirements, with the features you need now or want for the future. They can be either single or three phase and rated up to 63A, with the outlet configuration you need – be it C13, C19, UK plug or Schuko. Access is available via web browser, SNMP or RS485 Modbus, while monitoring of the entire iPDU, individual outlet or remote outlet switching is available.

EDP Europe's iREM provides all the electrical measuring capabilities of an iPDU, but for little more than the cost of a passive meter. iREM will support collation of all readings into the PDU Agent DCIM and most other management platforms.

CLICK HERE to find out more, call our sales team on 01376 501337 or CLICK HERE to send an email.

www.edpeurope.com

Comtec

Comtec, part of ETC Group, is a main distribution partner for Salicru in the UK, stocking its UPS solutions in Huntingdon and Glasgow to support projects and customers throughout the UK. The UPS range encompasses solutions for computers and peripherals through to data centres, providing optimum levels of efficiency and reliability for critical devices. The Salicru range features:

- High quality, reliable single and three phase solutions
- Multi-socket solutions and space saving compact tower and rack formats
- Swivel mount LCD displays
- Management software and integrated smart slot (SNMP)
- SLC Greenergy solutions encompassing highly energy efficient devices built with more than 80 per cent recyclable materials and incorporating 'ecomode' and prioritised output function

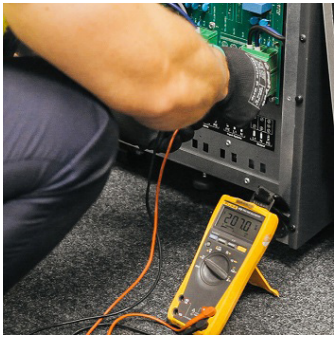
The range is supported with battery extension modules, maintenance bypass switches and network management cards to monitor activity and communications.

See the range in person at Comtec's free to attend Technology Open Day on 27th April 2022, where Salicru will present its data centre solutions alongside other key Comtec partners. To register to attend **CLICK HERE.**

www.comtecdirect.co.uk

Secure Power

Monitoring the environmental conditions for UPS solutions is becoming increasingly challenging and climate control procedures are having to work much harder to maintain optimum atmospheres.



Preventative UPS maintenance is absolutely critical to managing back-up power environments and ensuring UPS performance. Routine UPS service visits will not only analyse external environmental conditions but also pay particular attention to the condition of the UPS system, its internal components and UPS batteries. As UPS batteries are central to functionality, extra care should be taken to adopt specialist methods such as temperature compensated UPS battery charging, where UPS battery life can be significantly extended.

Maintaining an optimum environment for UPS systems where temperatures are kept between 20-25°C, with good airflow and no foreign dust particles will also contribute to prolonging UPS lifespan.

For more information **CLICK HERE.**

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You can't manage wha you can't measure

Jon Barker of Chatsworth Products (CPI) explains why effective power monitoring requires the integration of intelligent power distribution units (PDUs) and data centre infrastructure management (DCIM) software

As data centre managers and operators work to keep pace with rising compute demand around the world, and with rack densities within the data centre increasing to an average of 8-10kW, power distribution into the cabinet or rack now requires a more robust PDU alongside more stringent monitoring and measurement for efficient power management.

MONITOR AND MANAGE

Rackmount PDUs are an established solution for distributing power into equipment racks. And in today's remote working reality, intelligent PDUs with monitoring and switching capabilities have become essential. Additionally, advanced power hungry equipment now requires robust PDU functionalities that allow monitoring and control of power down to the outlet level, helping IT professionals maximise efficiency. In fact, PDUs can be used in high density cabinets full of 1U or 2U rack servers, a few server chassis or networking switches.

As rack density exceeds 8kW, the ideal scenario is now to distribute three-phase power to racks and reduce the number of PDUs needed to power equipment. Powering equipment evenly across the three power phases, also known as load balancing, has become even more critical as higher data demand results in greater reliance on the resources needed to support today's 'always on' world.

By extending power monitoring closer to the equipment, a data centre operator can acquire more precise information on power demands at either the rack level or input

at

level. It is therefore recommended that IT professionals follow a two pronged strategy that includes the integration of intelligent PDUs and DCIM software.

INTELLIGENT DESIGN

Power management in the white space, particularly inside a cabinet, is critical to ensure availability of all IT applications, as well as to minimise the overall energy footprint of the data centre.

Additionally, with efficient power management it is possible to boost operational efficiency by managing and monitoring power at the rack and device level. Here are a few recommended best practices for achieving this:

• Equipment utilisation

Monitoring of voltage, power and current down to the outlet level provides visibility into the total power consumption for each piece of IT equipment, so data centre managers can see exactly from where power is being drawn.

• Understand the operating conditions of equipment

Hotspots within cabinets are a common cause of equipment downtime. Temperature levels within the white space have a strong correlation to overall energy consumption within the data centre. Having the ability to measure and track inlet and outlet temperature levels at the rack level can help identify servers running ineffectively, aiding load balance and keeping costs in line.

• Get real time results

It is important to be able to quickly identify an issue when it arises within a server cabinet or rack.

• Minimise power consumption

Remote outlet control allows unused outlets to be turned off and power to be cycled to hung equipment to better manage at rack level. There are several types of relays used within PDUs to control outlet state. Bi-stable latching relays recycle power to outlets, helping to maintain PDU efficiency levels. They also allow outlets to maintain state after a power event, while ensuring basic power distribution to an outlet is not compromised.

• Ensure enterprise authentication and secure communication

It is hard to protect data from being compromised if you simply don't know where to put the protective prevention measures in place.

EVALUATING DCIM

DCIM software provides an easy way to aggregate sensor measurements, power consumption, environmental monitoring and security management, as well as visualise data over a room floorplan in trendlines and reports. This makes it easier to report on rack power usage by device, rack, row, bay, room, site or even to recognise the correlations between system events.

Once intelligent PDUs that monitor power at the outlet level are in place, it is beneficial to centralise monitoring and

automate reporting with DCIM software too. Be sure to consider a DCIM software solution that centrally manages and controls PDUs and intelligent assets, monitors overall health and offers:

• Active power by month and device
Use data to prevent power issues and maximise uptime. Also identify power consumption by server.

• Data charting
By visualising trends and occurrences, you can identify problems and optimise site capacity utilisation and security.

• Power capacity trends and analysis
Monitoring trending power capacity over time can help forecast power consumption more accurately.

• Power charge back reporting
Control consumption expenses with DCIM software that unifies equipment data in a simple report.

• Failover testing
Test failover capability without having to shut down the power chain. Select a solution that proactively provides information to confirm whether or not failover capability within any cabinet is being compromised.

• Searchable database and easy integration
DCIM software provides excellent preconfigured dashboard and reporting tools, but access to the data that DCIM software collects and stores is also important. Additional insights are possible when combining data from the facility (DCIM) with data from the network and servers, or from other asset management tools.

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Basic DCIM software should provide power monitoring and management, environmental management, capture and storage of data, monitor and alarm thresholds, trend power and environmental conditions, simplify administration of user access rights and log each access attempt. It should also provide more robust asset management, power chain and connectivity mapping, as well as change and workflow management.

PLAN OF ACTION

Outside of primary data centres, there is a growing need to place more compute on enterprise sites. As sensor costs come down, the use of the internet of things (IoT) to capture data to improvise operations is increasing. Enterprises will need to evaluate if they will send local data to the cloud or process it locally.

In many instances the cost of processing data locally makes sense, creating the need to place compute back into enterprise

sites. Here, the use of rackmount uninterruptible power supplies (UPS) is ideal. And newer battery technologies like Lithium-ion may be a good choice. Although more expensive than traditional lead acid solutions, these batteries will often provide longer life battery power, recharge faster and need less maintenance.

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POWER RANGER

There are three complementary technologies that impact UPS selection – Wi-Fi 6, 5G and 60W-100W power over Ethernet (PoE). Both Wi-Fi 6 and 5G radios require higher power and future generations will also further drive the need for upgrades in PoE. Upgrades in PoE require review of the UPS to ensure battery power for critical systems in the event of a power outage. Furthermore, now that 60W PoE is standards based, there are more end devices that can be powered over Ethernet, including building systems for lights and displays.

Finally, the racks that hold all this equipment are often an afterthought. But as rack densities increase, so do the loads within the racks. The combined weight of equipment and UPS is increasing. In fact, new designs have increased load capacities well above 1000kg per rack. Along with rack density, the weight of equipment is increasing with the average 2U, four socket server weighing around 36kg, and the average 2U UPS weighing around 60kg.

STRATEGIC DECISION

Ultimately, a solid power management strategy that takes into consideration the many practices, pitfalls and possibilities shared here should help ensure that data centre managers and operators are better prepared to face the constantly evolving future of technology and the demands that come from it. The work starts now. ■

JON BARKER

Jon Barker is CPI's technical manager for Europe. He has over 25 years' experience in the engineering industry, with 15 years specialising in data centre infrastructure. As technical manager, Barker serves as a technical contact, accountable for resolving pre- and post-sales support questions and issues, and provides support to CPI's sales team by delivering product and technology based presentations to customers, channel partners and industry event audiences.

AMS Helix expands into the Netherlands

AMS Helix is expanding into the Netherlands and has announced the opening of its new European office in Amsterdam. This expansion allows the company to further its reach and capitalise on the growing opportunities across Europe.


Bas Henneman

The growth also extends to the AMS Helix team, with the appointment of experienced senior project manager, Bas Henneman, who is based in Amsterdam. Henneman heads up project and programme management services, delivering data centre, edge and telecommunications projects with quality and safety as top priorities.

Martin Murphy, partner at AMS Helix, said, 'As AMS Helix drives into the next phase of its growth strategy, we're pleased to be experiencing strong demand throughout Europe. It was inevitable that we would need to expand into this area and Amsterdam seems a natural choice for our business. We are excited to welcome Bas to the team to strengthen our European capability.'

Delphix appoints Robert Stevenson as vice president of its Japan operations

Delphix has appointed Robert Stevenson as vice president of its Japan operations. Stevenson will be tasked with leading Delphix's next phase of growth in Japan and building a team to accelerate business in the world's third largest economy.


Robert Stevenson

Stevenson brings more than three decades of entrepreneurial and leadership roles in technology organisations to the Delphix business in Japan, with experience in both scale-ups and established technology players. He has served in various leadership positions within the Japanese market at BEA, EMC-Dell, Lenovo and Avaya, and spearheaded the growth of start-ups such as Documentum, Tanium and Sumo Logic.

'Delphix is already growing in the Japan market, and we're only scratching the surface of opportunities to use data to fuel true digital transformation,' said Stevenson. 'I'm excited to combine my experience in the Japanese market with Delphix's mission to unlock the data potential for companies. We want to help every company transform into a data company.'

i3 Solutions Group appointed to lead engineering design at Kao Data's Slough facility

i3 Solutions Group has been appointed principal consultant by Kao Data to lead design engineering work at its 16MW carrier neutral data centre in Slough.

Acting as lead consultant in a multidisciplinary capacity, i3 supports clients throughout the design process from initial concepts to detailed co-ordinated data centre design projects. It routinely uses building information modelling (BIM), reliability modelling and computational fluid dynamics (CFD) to scientifically establish performance and the effects of change upon infrastructure design and IT load.

L-R: Gerard Thibault of Kao Data, Ed Ansett of i3 Solutions Group, Paul Finch of Kao Data and Michael Harratt of i3 Solutions Group

Founder and chairman of i3 Solutions Group, Ed Ansett, said, 'We're naturally delighted to have been appointed for this project by Kao Data – a company which, like i3, takes very seriously the need for greater sustainability throughout the data centre lifecycle. This can be seen in both the cooling design and the use of hydrotreated vegetable oil (HVO) to fuel standby power generation at its Harlow campus. We believe that our shared values will make this a successful partnership.'

CHANNEL UPDATE IN BRIEF

Elea Digital and Vertiv have formed a partnership to deliver edge data centre services in Brazil.

Nokia has extended its partnership with T-Mobile Polska to include the modernisation of the operator's existing radio network infrastructure and rollout of 5G services. The move will support T-Mobile Polska's strategy of maintaining technology leadership in the country and delivering best in class services to its customers.

Every organisation must be prepared to manage critical events including operational disruptions, infrastructure outages, natural disasters and pandemics. BlackBerry and Samsung have partnered to address these needs by delivering the BlackBerry comprehensive Critical Event Management solution using Samsung Galaxy devices.

Rackspace Technology has achieved Snowflake's Premier Partnership Level. Snowflake has chosen Rackspace Technology for this partnership to assist with their growth by leveraging data services experience and skills, and ability to accelerate value for customers.

DigiCert has named Christophe Bodin as the company's chief revenue officer.

The building blocks of success

Joe DePalo was instrumental in building the underlying cloud infrastructure for some of the earliest websites that are now household names. Rob Shepherd recently caught up with him to find out more about his life and career, and how his experience is now helping to shape the future of internet security

RS: Tell us a bit about yourself – who are you and what do you do?

JDP: I am in charge of platform engineering at Netskope. My goal is to understand the gaps that exist for our customers when using any internet or cloud service – things like traffic on-ramps and access, network fit, service resilience, latency, as well as security – and to ensure our platform addresses those issues. While most of my career has been spent building infrastructure to deliver specific products, I am now able to build something that better serves the way organisations use the internet more broadly – acknowledging that they need to traverse in and out of services quickly and securely.

> 'It is very exciting to help shape the evolution of the internet and go after what was previously left unimagined. I am able to remedy one of the remaining flaws I see in the existing infrastructure and tackle one of the last hurdles in the evolution of the internet, namely security.'

RS: How and why did you decide to embark on a career in IT?

JDP: Often people like to tell an origin story that makes them look prescient, but my reality was as a computer science college student who was trying to become a bit more serious to impress his girlfriend (now wife). I moved from bartending in the evenings to working the swing shift at the network operations centre (NOC) for Genuity, one of the first web hosting providers.

This was 1996, the very early days of the internet as we know it now, and it just happened that Genuity and I were both in Phoenix, Arizona. I was fortunate enough to be part of the team that launched the first web hosting colocation environment, as well as playing a key role in building the core infrastructure for early iterations of the internet.

As my career progressed, I went on to build the underlying cloud infrastructure for some of the earliest websites that

would go on to become pillars of the internet that we all know and love today including Facebook, YouTube and Netflix among others. Before joining Netskope I was global head of internet services at Amazon Web Services (AWS).

Now, I'm combining all these lessons from the past 25 years into my role at Netskope to create a new kind of infrastructure that weaves security into all the ways we rely on the internet. It's not enough to optimise security and experience within an individual service or application, so we are building secure on-ramps for users to (and between) internet applications and services, as well as on-premise applications an enterprise might still be hosting in its data centre, for efficient traffic processing and optimised access to the applications, content and data that matter.

RS: What excites you about the sector at present?

JDP: What excites me today is the same thing that has excited me my whole career – the way the internet has evolved alongside business

and infrastructure requirements to address the needs of the present day. The internet wasn't designed and built in a ready for use form. It has always been evolving, changing and adapting.

When the first iterations of the internet were available, it was mostly text, simple images and maybe, if you got lucky, an animation. It then progressed to rich media including high definition images, streaming video, large file downloads and network sensitive services like voice over IP. Throughout this process security has been left up to the businesses and often put on the backburner.

However, just like the internet evolved over time, we are evolving and implementing the right infrastructure that delivers on the security mission. It is very exciting to help shape the evolution of the internet and go after what was previously left unimagined. I am able to remedy one of the remaining flaws I see in the existing infrastructure and tackle one of the last hurdles in the evolution of the internet, namely security.

RS: What challenges did your work in rolling out AWS present and what did you learn from the experience?

JDP: For cloud providers like Amazon, the infrastructure is designed and optimised for high availability of their services and products. It doesn't need to be designed to allow cloud services to get in and out of the network quickly or easily. But that's exactly what we are doing, serving as a fast highway or essentially internet overlay between users and where they want to go – whether the web, a software as a service (SaaS) app, apps on-premise or hosted in the cloud. There is huge customer demand around what's going on at the edge and I am in a position to optimise that.

> 'Whenever I have found myself repeatedly hitting barriers and roadblocks, I try to look for new opportunities and solutions, thinking outside the box and embracing a new exciting approach, rather than struggling to force success by doing it the same old way over and over again.'

RS: What are your thoughts about executing security inline at the edge and is this taken seriously enough?

JDP: By far the best way to secure access and protect data is by not allowing segmentation of traffic. You can think of it like securing a building – if there are two doors and one door has a metal detector and the other door hasn't, then issues will always exist with the door that lacks security. It becomes a blindspot.

For the best security, infrastructure needs to be built in such a way that everything is inline, scanned and reviewed. Everything goes through the metal detector – quickly and transparently. It is not that security is not being taken seriously and companies aren't doing their very best in this area, but the harsh reality is that when faced with the predicament of deciding between speed and security, companies take shortcuts because they

don't have the infrastructure to deliver both, or don't want queues to form at their proverbial enterprise metal detectors. We are, however, starting to see a shift as we're now able to offer the best of both worlds.

RS: What is peering and why is it so important to network performance and the user experience in the cloud?

JDP: Peering, or network adjacency, is a direct connection with other service providers – in our case it's with the carriers, cloud and SaaS providers. Peering and network connectedness also factors into our decisions around transit providers and plugging into 'eyeball' internet services provider networks to get as close to the end users as possible.

Without peering it would not be possible to on-ramp user traffic as fast as we do, perform the real time inline traffic processing required for security and data protection purposes, then speed user access to the web, cloud or SaaS apps that they need to do their job. All of this is ultimately important for avoiding performance trade-offs when delivering security and data protection, guarding against internet and cloud based security threats, as well as embracing a zero trust approach.

RS: Is the battle for energy efficient IT being won?

JDP: Just as there are opportunities to correct the security faults in the internet's infrastructure, there are also numerous opportunities to incorporate greener and more efficient technologies across the network. This will be a gradual but necessary process as individual elements are optimised to be more efficient, new technology approaches make this possible, and regulations move the industry at large forward.

RS: What key lessons have you learned from the coronavirus pandemic and how has it impacted your working activities?

JDP: The pandemic has had a huge impact, ultimately accelerating the interest that was already growing for cloud and edge based security. As a security challenge, it is no longer just a case of managing a minority of remote traffic.

Now we're managing a disparate network of users accessing from home or hotspots all over the world, on top of the usual headquarters and branch traffic. The result is that businesses are exploring new solutions like Secure Access Service Edge (SASE) and a Secure Service Edge (SSE) as a way of delivering security inline, embracing the logical data flows that optimise user experience, application performance and network efficiencies.

RS: What's the most useful piece of advice you've been given and how has it helped you during your career?

JDP: Besides listening to your college sweetheart when she is telling you to get a real job, I would pass on the advice I received from my uncle – pursue the opportunities that energise you. When I was at college I was looking at marketing, business and computer science and I found my real passion in network engineering.

Whenever I have found myself repeatedly hitting barriers and roadblocks, I try to look for new opportunities and solutions, thinking outside the box and embracing a new exciting approach, rather than struggling to force success by doing it the same old way over and over again. If you are open to these new opportunities and reimagining how to solve problems, you might find that luck or fate takes you down a path that you may not have expected. This can ultimately be very rewarding. ■

Quick clicks

Your one click guide to the very best industry events, webinars, electronic literature, white papers, blogs and videos

Best Practices For Assuring Successful PoE Device Deployment is a blog by **AEM.** **CLICK HERE** to read it.

Are You Positive It's Negative? is a blog by Mark Mullins of **Fluke Networks.** **CLICK HERE** to read it.

Guidelines For Providing Structured Cabling To Wireless Access Points is a white paper from **Excel Networking Solutions.** **CLICK HERE** to download a copy.

Wi-Fi Connectivity Problems? Here Is Why... is a blog from **NetAlly.** **CLICK HERE** to read it.

The Transformational Impact Of Cloud is a white paper from the **Cloud Industry Forum (CIF).** **CLICK HERE** to download a copy.

Why Shop Around For Servicing? is a blog by Graham Murray of **Centiel.** **CLICK HERE** to read it.

A Brief History Of CO_2 Emissions is a video from the **Potsdam Institute for Climate Impact Research PIK.** **CLICK HERE** to watch it.

Intelligence te

Nick Henley of Cordless Consultants examines the interplay between wireless technology and smart buildings

Smart is a word used to describe many things including wireless networks – but any technology not designed or applied correctly is far from smart. The ability of wireless networks to undertake tasks on the edge of smart has been there for some time, with location based services through radios connecting a particular appliance to 2.4GHz networks such as Zigbee, allowing for smart devices to connect. Yet the proliferation of applied solutions into business has remained low.

DRIVE TIME

The coronavirus pandemic has driven the design of smart networks and technologies, and we have seen the first solutions being commissioned and brought to practical completion. Typical adopters are those planning new buildings or refurbishments where this can be deployed during disruptive works.

From a capability perspective, we've had a lag between new standards capable of supporting smart tech and its deployment. The AX standard of Wi-Fi 6 was released in 2019 and, despite some early adopters, it has taken time to progress.

We designed our first deployment as AX was released and it went live in April 2020. At that time there was resistance to the new design techniques of more densely populated Wi-Fi and the need to use wider frequency spectrums to achieve greater data transmission speeds. Resistance to change and slow uptake of laptop devices capable of transmitting using Wi-Fi 6 (6GHz) means that three years later it is still questioned whether a design should take this step. This isn't the case with smart tech, however, which presents its own valid use case aside from greater speed and lower latency for users.

FORM AND FUNCTION

A key design principle is that a building should function when empty but still report on status, environment and be ready to accept visitors. The primary role of wireless is to continue to act as the transmission layer for devices such as sensors, monitoring and forward communication to cloud based analytics. To facilitate this, manufacturers have been busy adapting the software in devices to allow for greater integration between smart tech and wireless networks and remove duplication. For example:

- Embedding software for third-party providers into access points
- Allowing smart gateways to be paired directly to access points using USB gateways
- Deploying Wi-Fi 6E to allow for greater channel frequencies and lower latency

Wireless devices haven't changed significantly but the operating software

deployed is constantly being updated and licensed in different ways. However, deploying strong Wi-Fi and having good coverage is not enough and we constantly see poorly planned Wi-Fi with the aim of providing coverage and nothing else. In construction terms, it has to go further.

SUPPORT STRUCTURE

It's no longer enough to cover a building in a thin layer of Wi-Fi. With 2.4GHz reducing in effective use, the aim should be to deploy at 5GHz and allow Wi-Fi 6 and Wi-Fi 6E to take over.

So, what should we be doing? Designers must think differently. Capable products are available but carry features that are never used with equipment which is mis-designed or mis-deployed. Having features isn't enough on its own, so it takes vision to match business use cases with the correct environment and apply the best technology. Importantly, knowing what not to deploy is just as critical, so a design remains simple to implement.

From a technology perspective it's unlikely there will be a refresh of devices in the near future, so a focus on using what

‘Don’t deploy technology for technology’s sake – understand the use cases for the building and focus on why, what and where before how.’

is available is important. In most cases this is more than most will ever deploy, so innovation is needed in terms of how smart products and Wi-Fi are designed. Don’t deploy technology for technology’s sake – understand the use cases for the building and focus on why, what and where before how.

THE APPLIANCE OF SCIENCE

Wireless manufacturers have been working on adopting applications into their devices. Location services, which were once rudimentary and based on the amount of radios accessing a particular access point, are now conduits for other applications that handle smart buildings.

Aruba, for instance, allows USB connections within its access point for EnOcean dongles to connect instead of using an additional gateway device connected over wireless or on a wired network. The next logical step would be to produce a software agnostic product that can accept such devices as applications only and provide this functionality without a dongle.

Cisco has launched its DNA Spaces product, creating a portal for analytical data on what a building is doing, who is consuming what and where they are going, to allow for qualified decisions to be made on what to deploy for a smart building. Linking into systems such as SAP, this provides information on what is happening within the building but still relies on vision to decide what the building will do when presented with this.

TWICE AS NICE

There are traditionally two product offerings in respect of technological advances – proprietary or open source – and manufacturers and software companies are moving towards open source more rapidly. It uses the Amazon Web Services approach of embedding software into

multiple platforms a consumer already owns allows for quicker penetration into the marketplace. And it is happening in wireless. With market leaders deploying and expanding application programming interfaces (APIs) into software that talk natively to other applications already in a consumer's technology stack, the barrier to investment typical of a proprietary 'conquer all' approach is reduced.

In terms of new technology, there is much available, but consider what is truly viable. Advances we see that will provide the greatest support for use cases are mobile and security. Support for radio access networks (RAN) for the delivery of 5G is the most obvious but least known benefit of the new AX standards. Whilst Wi-Fi calling has been available in limited format for some time, the ability for a company's access points to be used to hand off mobile calls to mobile providers is a big step.

We'll also see greater security embedded into access points, building on the ability of each access point to host wireless LAN (WLAN) control capability and reduce the security risk of having an outlying device that can be targeted without any inherent security deployed on the device. With smart networks embedding software at the edge, this is an important step. Finally, on the horizon is Wi-Fi 7, with talk of this being released in 2024. However, this is likely to be 2027 before this takes hold, so shouldn't affect decisions within the lifetime of current projects.

BENEFIT CHECK

It's unlikely Wi-Fi will perform all the functions of a smart network, as the reach of smart networks has to extend to far more areas and with greater granularity. But with the proliferation of Wi-Fi 6E and denser networks, coupled with greater harmonisation of applications, it will become closer. The benefit? Lower cost of deployment and integration, plus greater analytics without the need for multiple systems. The rub will be that cost will transfer to licensing of software and APIs, and companies will need to be aware of costs for operating networks as providers seek to capitalise. Smart procurement can ensure technology gains are not eroded by unsustainable business models. ■

NICK HENLEY

Nick Henley is networking and unified communications specialist at Cordless Consultants. He has over 20 years of experience in designing, procuring and delivering large scale projects with blue chip organisations and the public sector. For the past 10 years Henley has specialised in new workplace environments, ensuring that the network and unified communications are embedded into the fabric of buildings.

Zyxel

Zyxel's NWA90AX is the right choice for small to medium sized enterprises (SMEs) looking to upgrade to Wi-Fi 6 access points without an expensive price tag. It provides superior speeds and expanded range by utilising the latest Wi-Fi 6 standard.

The NWA90AX supports NebulaFlex, which not only allows you to set-up the device in minutes from the Nebula app, but also gives you the flexibility to manage the device. Additionally, with the support of a captive portal, the NWA90AX not only offers SME users the enterprise level security to protect their business networks, but also the flexible opportunity to customise wireless network usage login for marketing and business recognition.

To find out more **CLICK HERE.**
www.zyxel.com

CNet Training

CNet Training's Certified Wireless Infrastructure Technician (CWIT) program focuses on a broad range of common wireless technologies that coexist to create a complete wireless networking solution and deliver a seamless mobility experience.

When most people think of wireless networks they think of mobile technology and Wi-Fi. In reality wireless networking comprises these as well as Bluetooth, satellite, microwave, line of sight optics etc. CNet Training identified a potential area in the industry where a gap in skills and knowledge could arise, so created the CWIT program.

The CWIT program has been developed for experienced digital infrastructure technicians wishing to take their professional credentials to the next level. It expands knowledge with a focus on mobile architecture, Wi-Fi solutions and in-building wireless (IBW) systems including distributed antenna systems (DAS), license exempt (OFCOM approved) cellular extension, Wi-Fi mesh and wireless LAN (WLAN) featuring prominently.

The CWIT program provides a platform for learners to explore the challenges of wireless network implementation, analyse problems and identify technical solutions.

To find out more **CLICK HERE.**
www.cnet-training.com

NetAlly

The NetAlly EtherScope nXG is the first Android based Wi-Fi and 10 Gigabit Ethernet network analyser. This multi-technology, all in one handheld instrument is ideal for network validation and troubleshooting, eliminating the need to purchase multiple tools.

The EtherScope features the AirMapper Site Survey app, which quickly and easily gathers location based Wi-Fi and Bluetooth/ Bluetooth Low Energy (BLE) measurements and creates visual heatmaps of key performance metrics in NetAlly's free Link-Live Cloud Service. Simple to use, the AirMapper app is ideal for quick site surveys of new deployments, validation change and performance verification.

NetAlly is the first to provide a complete site survey and wired/ wireless analysis solution in a handheld instrument, allowing Wi-Fi network professionals (and even non-experts) to perform a site survey without the need to carry around a laptop, use dongles or tethered devices.

For more information **CLICK HERE.**
www.netally.com

WatchGuard Technologies

WatchGuard Technologies' AP327X is a cloud managed outdoor Wi-Fi access point with ruggedised enclosure and external antenna connectors for use in extreme conditions, or locations that require flexible antenna pattern coverage. It delivers secure outdoor Wi-Fi for university campuses, warehouses, manufacturing sites, shopping centres, public hotspots and municipal facilities.

The AP327X adds four N-Type connectors for flexible antenna pattern coverage capabilities and is IP67 rated for harsh conditions including rain, snow and dust. The AP327X is an 802.11ac 2x2 MU-MIMO access point with dual concurrent 5GHz and 2.4GHz band radios and data rates up to 867GHz and 400Mb/s respectively.

To find out more **CLICK HERE.**
www.watchguard.com

Making a difference

Gary Newbold of Comm
explains how venue and
experiences are being en
through wireless networ

Remote learning, working from home and the remote viewing of special events all made network infrastructure more important over the last couple of years – a trend that will continue as companies, schools and public venues compete for peoples' time, energy and money. There is a new emphasis on enhancing the user experience for students, workers and visitors, and this relies on robust network access and connectivity. So, let's look at how this trend of enhancing experience through digital capabilities and wireless networks is impacting educational facilities, offices, hotels and other public venues.

LEARNING CURVE

The sweeping transition toward digital learning in schools was accelerated by the coronavirus pandemic, but the real implementation of hybrid classrooms, distance learning and digital curriculum is only just beginning to grow. The situation forced many organisations to move to some of these technologies before they were ready for it, either academically or technically, and the experience was subpar. Now, educational institutions are moving to catch up and optimise the experience for those that use their buildings.

The ideal vision is for every classroom and lecture hall to accommodate hybrid learning environments. Classrooms must be fitted with microphones, cameras and video screens to support this mode of learning, and every student will have a digital device. Although the set-up is possible, the challenge is to build up the network infrastructure to support that vision.

Inside each facility, we see a movement toward converged networks, as digital learning networks, in building cellular, switching and cabling plant, and internet of things (IoT) systems all come together and force information and operational technology (IT/OT) departments to collaborate as never before. Building automation systems for heating and cooling, lighting, smoke/vape detectors and electronic locks are moving on to IP networks, which is forcing convergence. Some facilities will decide to converge networks for higher efficiency, while others will continue to maintain separate

networks for control. Networking vendors must support both models.

MONEY MATTERS

Of critical importance in this whole trend toward increased digital learning is the question of how to pay for it. Home learning is on the rise and addressing digital equity issues will become a bigger factor. In fact, the experience of students and their families influences where those families send their children for education. This societal shift directly impacts some schools because their funding is based on average daily attendance, and with attendance dropping it's harder to afford remote learning technologies.

To help bridge the digital divide stimulus funding will continue to play a role, as will other monetary sources. But schools aren't necessarily experts at obtaining such funding, and, facing stiff competition for

money, they need help to find and win grants. Vendors will distinguish themselves by offering advice and assistance in identifying and helping obtain funding for their customers' infrastructure projects.

'The sweeping transition toward digital learning in schools was accelerated by the coronavirus pandemic, but the real implementation of hybrid classrooms, distance learning and digital curriculum is only just beginning to grow.'

VISITOR ATTRACTION

For public venues, the challenge is to increase activations – the number of times a facility is activated for non-sports events like concerts and shows. With the average TV getting bigger and couches ever more comfortable, public venues need to enrich the on-site experience. Some venues are expanding their scope of mixed use facilities, for example, the Honda Centre in Orange County, California, is adding an experience centre with restaurants, shopping and activities for kids surrounding its stadium.

Venues will strive to enrich visitor experiences by enhancing convenience through touchless ticketing and concessions, providing online information on congestion at concession stands or bathrooms, and performing automated temperature screening for visitor safety. Venues will constantly share information with their visitors, as well as stream video to remote fans.

Of course, network connectivity underlies all of this. Venues will look harder at self-funded networking options like Wi-Fi 6. For years the trend was to let mobile operators or neutral hosts deploy systems that enhanced mobile coverage, but with applications expanding, we'll see a lot more Wi-Fi networks in stadiums and arenas. Vendors can help in this transition by advising venue owners about funding and operational models. Many venues won't deploy new networking equipment unless they can

clearly understand how it will be funded and operated.

BE MY GUEST

Remote work has diminished business travel, so hotels are looking at new ways to make their facilities more attractive to guests. They're also competing with public venues for meetings. To win business, hotels are deploying faster and more pervasive Wi-Fi systems, subsidising connectivity and adding digital assets like large screen TVs to lure events.

In addition, hotels are working to become more efficient through digital technology. Electronic door locks are now commonplace, and larger properties have IP telephone systems that offer online room service ordering, concierge services and other amenities. Guest internet and back of the house systems are converging on to IP networks for greater efficiency, as hotels move to the cloud for services and applications. There's also a heightened interest in security, with hotels adopting software defined wide area networks (SD-WAN) to help prevent hacking.

All of this helps large hotel ownership companies compete for brand loyalty and protect their investments over time. As for infrastructure, hotels are looking to mobile operators to scale their macro networks while they leverage Wi-Fi for in-building connectivity. Many larger hotels are already looking ahead to Wi-Fi 7.

SPEED AND STRENGTH

Educational institutions, public venues, offices and hotels will all need faster, more robust wired and wireless networks to support their various initiatives. We should expect to see real progress toward revamping networks in the coming year and it will be exciting to watch the various benefits this will have for a range of sectors take full effect. ■

GARY NEWBOLD

Gary Newbold is vice president Ruckus Wireless and Cloud EMEA at CommScope. He has a proven track record of delivering business objectives and has successfully driven growth across diverse market segments, cultures and geographies. He is an advocate of customer success and transforming customer experience to grow share and loyalty.

Vertiv supports supercomputers battling COVID-19

The fight against COVID-19 is being waged in a data centre in Bologna, Italy. There, a consortium of dozens of Italian universities, research centres and government ministries called Cineca houses one of the most powerful supercomputers in the world – the Marconi100. Cineca researchers are using the Marconi100 to simulate the behaviour of proteins that allow the coronavirus to replicate.

The Vertiv power and cooling systems protecting the Marconi100 and the other supercomputers on the Cineca campus are among the most robust, sophisticated and reliable solutions in the world. Liebert XD, Liebert CRV and Liebert PDX thermal management systems, along with Liebert HPC-M free cooling chillers, maintain the precise environmental conditions needed in the data centres.

The modular Liebert Trinergy Cube uninterruptible power supply (UPS) cleans and conditions the power feeding the facilities and protects against spikes, surges or any unplanned outages that might compromise potentially lifesaving research. Finally, Vertiv provides another layer of protection with preventive monitoring and remote diagnostics through its Vertiv LIFE Services.

Kohler Uninterruptible Power protects critical research equipment at The University of Warwick

The University of Warwick's (UoW) new Interdisciplinary Biomedical Research Building (IBRB) brings together 300 biomedical researchers from across the School of Life Sciences and Warwick Medical School to fight human diseases. Its focus is on understanding the origins and mechanistic basis of diseases of the body and brain.

If the protected equipment housed in the IBRB were exposed to a power failure, it would result in months of research being lost, key results invalidated and crucial samples destroyed. Ultimately, this would lead to a significant delay in the research of diseases for the general public.

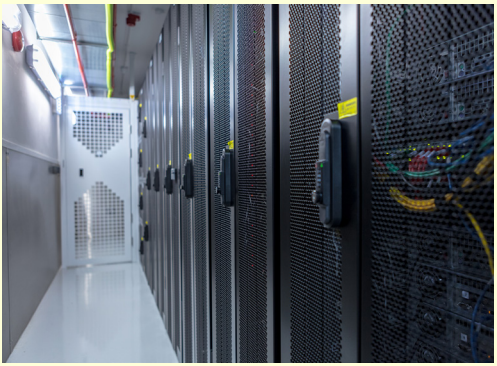
A Kohler Uninterruptible Power PowerWAVE 8000DPA 100kVA has been installed in the IBRB's new services room to support a network of critical power outlets throughout the building. These are used for designated equipment that must continuously function throughout a power disturbance including analytical and monitoring systems that form part of critical experimental equipment.

Kao Data expands Harlow Campus with construction of 10MW data centre

Kao Data has announced the expansion of its Harlow data centre campus, with construction now underway on its second 10MW facility, underpinning infrastructure in the UK Innovation Corridor. The new facility, named KLON-02, will build upon the company's high performance infrastructure, energy efficiency and sustainability capabilities – providing customers with a reduced carbon footprint and low total cost of ownership.

KLON-02 will offer up to 10MW of capacity and provide an energy efficient home for almost 1,800 racks of IT equipment across 3,400m² of technical space and via four technology suites. Once operational, the facility will be NVIDIA DGX-Ready data centre certified and OCP-Ready, enabling high performance computing (HPC), artificial intelligence (AI), and enterprise computing users to scale quickly and efficiently by deploying pre-populated OCP Accepted racks, or bespoke high density architectures within its hyperscale inspired design.

Custodian supports Vitanium growth with a cost effective and sustainable data centre platform



Vitanium began as an email filtering and cloud hosting services provider. As demand for cloud services quickly evolved, and the value of data grew, its customers began requesting data protection, disaster recovery and back-up services, alongside email archiving and file storage services.

After experiencing a series of outages, cost increases and infrastructure challenges, Vitanium needed to migrate its mission critical hardware outside of London and identify new operators to work with. Vitanium's research led to Custodian Data Centres, which offered an energy efficient, mission critical infrastructure platform that would perfectly accommodate its needs.

The partnership with Custodian has delivered significant advantages for Vitanium and the data centre operator has been able to directly support its growth, which has surged by 400 per cent. Custodian's technical team has also played a key role in helping Vitanium modernise and consolidate its storage infrastructure.

Quantum Switch invests in local workforce with training and certification programmes from CNet Training

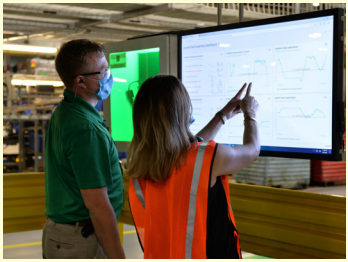
Quantum Switch has partnered with CNet Training to deliver industry approved technical education to local staff across its portfolio in the Middle East. This year it will educate 28 local staff in technical and data centre management skills in a programme worth over $100,000. Over the next five years it is estimated that 100 or more individuals will undergo education programmes by the company, as it invests worth well over $250,000 in local skills development.

Managers and technicians will be automatically enrolled on one of two programmes created and delivered by CNet Training – the Certified Data Centre Management Professional (CDCMP) and the Certified Data Centre Technician Professional (CDCTP). The first is a comprehensive programme that develops an understanding of all elements of a data centre facility, and the relationships and dependencies between them. The second focuses on subjects essential to data centre technicians in maintaining zero downtime facilities.

On successful completion of the programmes, including various assessments, participants will be awarded industry recognised certifications and internationally recognised qualifications that confirm their excellence in these highly complex environments.

NTT and Schneider Electric join forces to power IoT environments with private wireless network trial

NTT and Schneider Electric are collaborating to deliver Private 5G (P5G) – an on-premise private network solution and digitisation enabling platform that can dramatically advance digital solutions in the manufacturing environment. The announcement builds on existing joint strategic innovations that help clients achieve efficiency and sustainability goals with advanced digital processes within the Industry X sectors.



The P5G platform will be piloted at Schneider's Lexington Smart Factory, the first of Schneider Electric's US plants to become a showcase site leveraging internet of things (IoT) connectivity, edge and predictive analytics to drive energy efficiency and further sustainability goals. The P5G will power key use cases that solve challenges around equipment availability, machine performance and product quality. For example, the companies will integrate 'machine vision' capabilities – industrial cameras with specialised optics – into existing factory and warehouse automation systems to identify faults, as well as wear and tear, for incident root cause in near real time.

PROJECTS & CONTRACTS IN BRIEF

The NFL has set a record of data and Wi-Fi network usage throughout the 2021-2022 season and at Super Bowl LVI. Wi-Fi usage during 2021 NFL games demonstrated the most digitally engaged fanbase to date, with an average of 6.21TB of data transferred per game – a 34 per cent increase over the 2019-2020 season. ExtremeAnalytics from Extreme Networks captured valuable insights around how fans embraced connectivity.

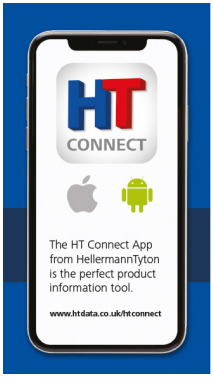
In cooperation with its partners, Orange has demonstrated multi-vendor interoperability of 400Gb/s optical fibre modules over several network segments.

Banco de la Nación del Perú has gone live with Temenos. In the first phase of the implementation, Temenos Banking Cloud supported the opening of two million new digital accounts called Cuentas DNI. With Temenos' scalable open platform the bank plans to expand to 24 million accounts.

Work to bring full fibre connectivity to homes and businesses across Glasgow has taken another step forward. The latest construction phase of the £270m full fibre network is now underway in Bishopbriggs and is being delivered by GCU UK on behalf of CityFibre.

Vantage Data Centers has announced continued major investments in Canada with a new third Montreal campus and expansion on its existing campuses. This brings the company to a total of nine North American campuses including a mega campus under development in Phoenix.

HellermannTyton



The HT Connect app from HellermannTyton has been designed to bring products to life in a live environment. Using augmented reality (AR) through a mobile phone or tablet, you can see a wide range of products on your desk, on a wall or even out on-site.

Using HT Connect, it's possible to take a closer look at HellermannTyton's products, with many of the selected models having moving parts such as opening doors, removing covers or lifting trays. You can use your touchscreen to rotate the products and zoom in up to 500 per cent.

HT Connect also provides additional product information including datasheets, installation guides and videos where available. This gives installers and engineers in the field everything they need at their fingertips when it comes to optical fibre network installation.

The HT Connect app is available to download from both Apple and Google Play. To find out more **CLICK HERE.**
www.htdata.co.uk

Siemon

Siemon has produced a new application and product guide to provide data centre professionals with information for selecting, designing and deploying business critical IT infrastructure in data centres.

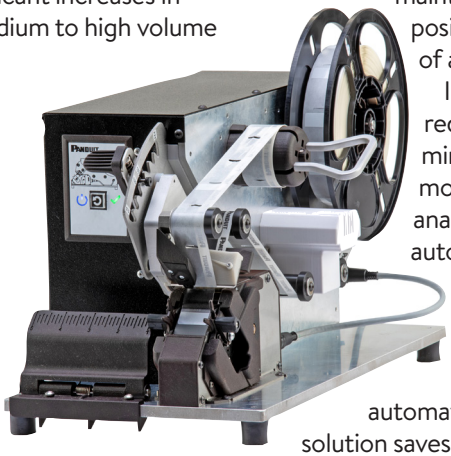
Data centre interconnect (DCI) technology, distributed cloud and full mesh switch fabric architectures in highly virtualised environments result in the need for higher density and more complex optical fibre links. Siemon's guide highlights a range of specialised fibre solutions including high density fibre enclosures and smaller diameter cables and assemblies that help manage these critical connections in tight data centre spaces.

As transmission speeds migrate to 400/800 Gigabit Ethernet, the guide also highlights recommendations on how to migrate to high density fibre channels utilising existing infrastructure. Also showcased within the guide is Siemon's portfolio of data centre infrastructure solutions including Category 6A shielded copper cabling, pre-terminated and high density fibre patching solutions, and automated infrastructure management (AIM) for remote monitoring.

To find out more **CLICK HERE.**
www.siemon.com

Panduit

Panduit's compact semi-automatic, PLA-100/E WrapID automatic labelling system offers significant increases in productivity for medium to high volume label applications.



Users can benefit from turnaround times that are up to three times faster than traditional manual installation and twice as fast as leading competing systems. The winding head of the compact system is easy to reach, so that labels can be attached to the line or cable within 12.7mm of the connectors or terminals. In addition, the label head has a modular design and can be replaced easily and inexpensively during maintenance, with the label position realigned at the push of a button.

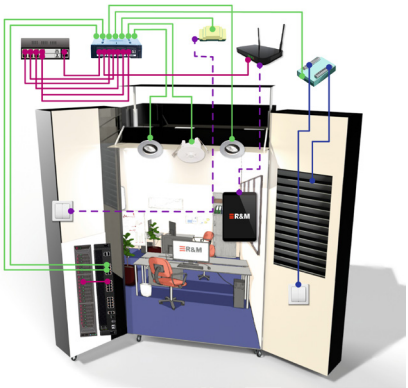
Improved ergonomics reduce operator fatigue and minimise the risk of repetitive motion injuries. Panduit's analysis between manual and automated systems shows that the WrapID saves approximately 170 labour hours per 100,000 labels. Compared to competitor automated systems, Panduit's solution saves approximately 80 manhours per 100,000 labels.

To find out more **CLICK HERE.**
www.panduit.com

R&M

Structured cabling is increasingly used to network building automation systems with internet protocol (IP) as a common language. R&M is committed to providing more information on these building digitalisation fundamentals. Architects, electrical planning engineers and installers can gain expertise and learn how R&M's ALL-IP solutions can be implemented in buildings thanks to videos, webinars, live presentations and smart mobile building demonstrators.

'ALL-IP cabling replaces the usual separation of IT and fieldbus components,' commented Matthias Gerber, R&M's market manager office cabling. 'This simplifies planning, installation, system integration and maintenance.'



As more and more networked devices are equipped with their own IP addresses they can communicate with each other and with the building management system in real time. Devices are accessible via the internet, which simplifies building management. ALL-IP can also integrate or replace the fieldbus networks used in building services engineering and digital ceiling solutions can effectively support ALL-IP convergence in the building automation.

To find out more **CLICK HERE.**
www.rdm.com

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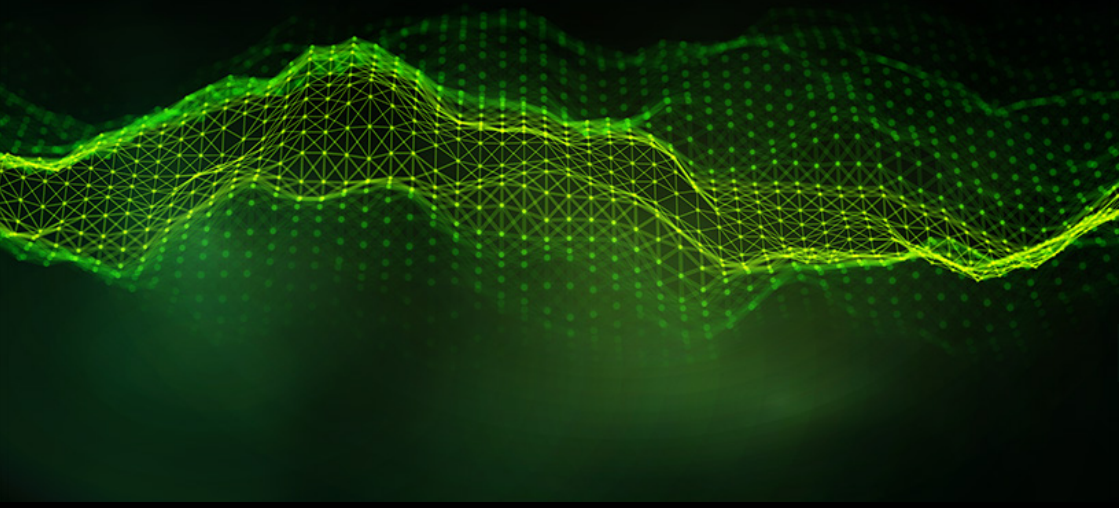
Production lines

Jason Chester of InfinityQS examines the role manufacturers play in enabling a green approach to digital transformation



Following the 26th United Nations Climate Change Conference of the Parties (COP26), which took place in November 2021, it is abundantly clear that the actions needed to mitigate climate change are now becoming a serious priority among world leaders. While the event made climate change headlines around the world, we must not lose sight of other environmental imperatives such as the growing impatience towards waste, ecological damage and the overuse of precious natural resources caused by consumerism and industrialisation.

STOP, LOOK AND LISTEN

The images of swathes of decimated forests, polluted rivers and burgeoning piles of plastic waste demonstrate that society is heading rapidly towards catastrophe and industry is going to be squarely in the firing line. Manufacturers should now be acutely aware that the spotlight will increasingly turn on them.

Blame will be directed at them not only through the lenses of governments but also by consumers and society at large, as well as by their customers. Now should be the time that every manufacturer – from global brand icons to small single plant operations – recognises that sustainable manufacturing operations are critical to their future success and brand reputation.

UNCERTAIN TIMES

The past two years have seen manufacturers experience a period of uncertainty, with the coronavirus pandemic

‘The drive towards optimising manufacturing efficiency and productivity should no longer centre solely around performance and profit but equally revolve around the environment, with sustainable practices being at the forefront of any manufacturer’s digital transformation strategy.’

and Brexit revealing widespread supply and demand chain fragility. With inflation beginning to rise sharply, more uncertainty and volatility is surely yet to come.

It’s undeniable that coverage on climate change has been dominating our TV screens and newspaper front pages in recent times. This has resulted in both consumers and brands paying more attention to the environmental impact of products and services.

The rise of social media has made it easier for consumers to express their concerns about those industries and companies deemed guilty of environmental irresponsibility, with some activists even organising boycotts against organisations in extreme circumstances. This pressure towards responsible and sustainable manufacturing is only going

to grow, and thereby it will become increasingly important for organisations to be transparent in their responses.

MORE THAN MEETS THE EYE

Having an efficient production system has always been an important aspect of manufacturing operations, with the aim being to secure profits, growth and stakeholder value. Yet, if a product does not meet the correct specification it goes to scrap, waste or for rework. While many manufacturers recognise that this has a negative impact on performance, the unused resources that go into making that product in the first place are also wasted – whether human resource, machinery or tool wear, energy and natural resources or raw materials.

While this approach to quality is important in ensuring organisations continue operating well and keep their customers happy, the mindset must evolve to also understand how that waste is impacting the overall environment footprint of their operations. Efficiency and productivity in manufacturing is now quite simply becoming more about corporate, social and environmental responsibility than just business performance.

ACT NOW

With global leaders having discussions and setting goals on how to reduce their impact on the environment, the same cannot be said within the manufacturing industry. In fact, a recent survey revealed that two-fifths of UK manufacturers are operating without a sustainability policy. Often manufacturers have quoted cost and time to be a barrier to achieve a more sustainable operation but with the right technology it is possible.

For manufactures to truly make an impact they must rethink not only how they design their products but also how they manage and monitor their end to end production processes. But they also must not overlook how optimising their production processes to minimise waste and maximise efficiency and productivity will also contribute significantly to the mitigation of any negative environmental repercussions.

TAKING ADVANTAGE

There is potential opportunity for manufacturers to use technology to their advantage. For instance, during the pandemic, factories across many countries were closed or at reduced capacity due to

lockdown restrictions. This provided time for manufacturers to invest in their digital transformation initiatives.

Those that chose to invest did so because they knew it would enhance operations and increase efficiency, which in the long run would increase profits. This same technology can, and should, now be used to make sustainable operational decisions. Utilising new technologies, in turn, will allow manufacturers to unravel the complexity in their processes and give them sufficient visibility to ensure they can make decisions comfortably at every level within their operations.

Digital transformation has become a major theme in manufacturing, especially within shopfloor operations where outdated and legacy processes continue to dominate. The drive towards optimising manufacturing efficiency and productivity should no longer centre solely around performance and profit but equally revolve around the environment, with sustainable practices being at the forefront of any manufacturer's digital transformation strategy.

TIME FOR CHANGE

The topics of climate change and environmental responsibility are not going to fade away, instead they will become more prevalent and more urgent. The most important step for manufacturers is to take real action and change the way they operate. Reframing how digitalisation and smart manufacturing are perceived through the lens of sustainability is, in my view, one of those critical steps. ■

JASON CHESTER

Jason Chester is director of global channel programs at InfinityQS, where he is responsible for the implementation, management and overall success of the InfinityQS global channel partner program. With over 25 years of experience working directly within the enterprise IT industry, Chester has gained a deep understanding of how IT capabilities can deliver significant and sustainable business value to end user organisations.

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