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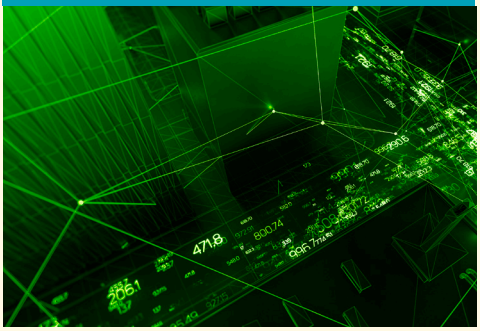

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Knowledge is power

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One of the most significant problems that any organisation faces when embarking on an enterprise or data centre network infrastructure project is that 'they only know what they know'. Very few organisations carry out such projects on a regular basis – therefore, the knowledge that exists within an organisation is often out of date or siloed within its industry sector.

Consultants perform a valuable role by bringing up to date technical knowledge and the ability to ensure that the right decisions are made, as well as a delivery methodology that ensures efficient and effective completion of a project. However, not all consultants are the same and there are some good, some bad, and some very ugly, as anyone can set up a business and use this designation to describe what they do. This issue's Question Time has asked a panel of industry experts to discuss whether there's any real benefit in employing a consultant and what to look for if you do.

This issue also contains a special feature dedicated to the subject of pre-terminated copper and optical fibre solutions. Nick Edwards of HellermannTyton charts the evolution of pre-terminated cabling systems, while Mayflex's Richard Cann discusses how they can save time, resources and produce a higher quality product.

We also look at UPS and power management, with Aaron Oddy of Centiel examining why eliminating single points of failure should be a central focus of a power protection plan. He's followed by Marc Garner of Schneider Electric, who explains why resilience and efficiency are essential in the face of the energy crisis.

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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Half of young tech workers have had negative industry experiences

Businesses must prioritise an inclusive company culture in order to improve the professional experiences of young tech workers from underrepresented groups, research has found. The data, which has been published in Wiley Edge's second annual Diversity in Tech report, revealed that only 24 per cent of UK tech workers aged 18-24 would describe their experience in the industry so far as 'entirely positive' and another 26 per cent as 'mostly positive'.


Tom Seymour

30 per cent said they have had a mixture of positive and negative experiences, 11 per cent mostly negative, while one in 10 said they have not enjoyed their experience so far at all. When asked what had made their experience positive, 28 per cent said they have enjoyed the work and another 28 per cent have found the work interesting.

Tom Seymour, senior human resources director at Wiley Edge, commented, 'Our findings seem to indicate that it's not the nature of the work itself that is an issue for most unhappy young tech employees. Instead, the research suggests that many businesses are still struggling to establish an inclusive and welcoming environment, which is having a negative impact on the wellbeing of their tech teams.'

BT helps customers accelerate towards a circular economy

BT has introduced a programme aimed at reducing business customers' e-waste by recycling end of life equipment and helping them achieve their targets for a circular economy. The new programme comes as organisations around the world are transforming their network and IT infrastructure to support the latest multi-cloud deployments.


Hriday Ravindranath

Replaced or decommissioned electronic equipment from a customer's network will be shipped back to Cisco to be responsibly reused or recycled through its takeback and reuse programme. Up to 99.9 per cent of what is returned will be reused or recycled. BT has Cisco certified environmental specialists in the UK, US, Italy, Ireland, Switzerland and Singapore to manage the process, and further countries will be added by end of 2022.

'E-waste is a growing concern and, according to the World Economic Forum (WEF), now the fastest growing waste stream in the world,' said Hriday Ravindranath, chief product and digital officer at BT's Global Unit. 'Creating a more sustainable, circular economy, where we prioritise dematerialisation and avoid equipment going to landfill, is vital.'

UK faces science and tech drain

According to research by Ridge and Partners, the UK risks an exodus of some of its most promising science and technology businesses, according to a new research report. 16 per cent have firm plans to relocate overseas over the next three years and 88 per cent have considered it.


Liz Sparrow

The 103 science and technology companies studied for the report also cite problems at a local level, raising issues for local authorities, city planners and science parks. A fifth complain their current premises are not accessible by public transport, while a further 16 per cent say wider transport links aren't good enough to attract the talent they need.

Liz Sparrow, science and tech lead at Ridge and Partners, commented, 'There's no lack of ambition or opportunity for growth within the science and tech communities. Indeed, the companies we studied expect to grow by 52 per cent over the next three years. But they need to be in the right environments to grow in this way – that means places with the right infrastructure, transport links, housing and premises to attract the partners, suppliers and talent they need.'

Data centre sector feels the crunch of escalating costs

Data centre construction is facing record breaking inflation amid delays to materials deliveries and competition for skilled labour from large scale advanced manufacturing projects, according to research from Turner & Townsend. The research analysed construction input costs – including labour and materials – across 45 key markets, alongside industry sentiment and insight from a survey of 250 data centre professionals.


Lisa Duignan

The average cost to build data centres has increased by 15 per cent on average across global markets. 95 per cent of those surveyed agreed that global materials shortages have impacted construction timescales, with most citing delays of over 12 weeks. Meanwhile, 92 per cent of respondents reported that they are struggling to meet construction demand due to a shortfall of experienced site teams.

Lisa Duignan, head of European data centres at Turner & Townsend, said, 'Developers are facing a perfect storm of currency fluctuations, a race for talent from other advanced technology sectors, and materials delays and shortages. The sector has been adapting to this challenging environment over the past 12 months. It's becoming increasingly vital for clients to prioritise a programmatic, collaborative approach to procurement, project delivery and project controls.'

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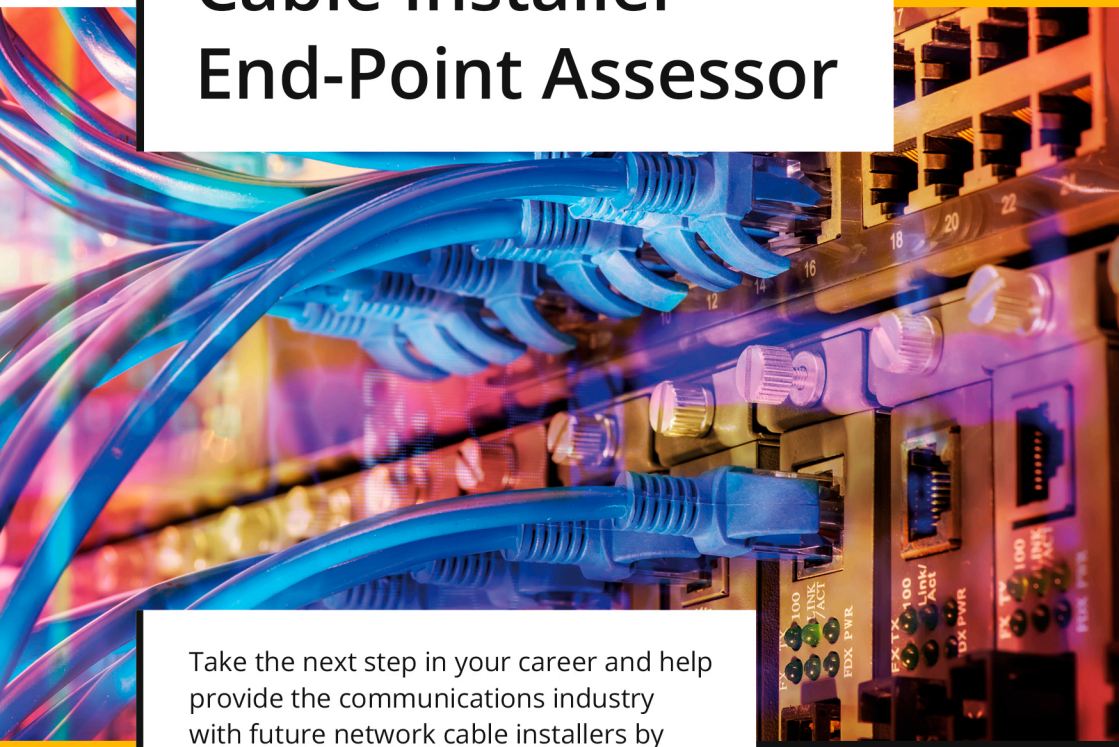

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Public cloud adoption stagnating as preference for hybrid cloud grows

Research from Fujitsu UK – in conjunction with the Cloud Industry Forum (CIF) – has revealed that 60 per cent of organisations have a hybrid cloud strategy in place, ahead of the 36 per cent that embrace a cloud-first arrangement. This underlines how the appetite for public cloud is decreasing as more businesses opt for the convenience and flexibility of hybrid.

The research also found that 58 per cent of respondents said their company struggles to keep up with new cloud technology, while 57 per cent said cloud has introduced more complexity to their organisation. The prime concern on the minds of leaders is that new technology will fail to integrate with legacy technology, which was mentioned by 44 per cent.

Graham Bromham, head of regional sales and service providers at Fujitsu UK, said, 'Cloud continues to offer great potential in helping companies transform their approach to IT and deal with future challenges, providing they receive support to make these projects a long-term success. It is clear from the research that many businesses still need assistance in making this happen, particularly when it comes to integrating legacy applications as cloud based approaches become increasingly common.'


Graham Bromham

Telehouse sets out to achieve a 461 tonnes reduction in carbon emissions with EkkoSense

Telehouse International Corporation of Europe has announced a collaboration with EkkoSense, enabling it to achieve an anticipated 461 tonnes reduction in CO2 carbon emissions at its Telehouse North site by the end of the 2022 financial year.

Following an initial trial at Telehouse North that was implemented at the end of 2021, a 10 per cent cooling power reduction has been achieved, leading to reduced carbon emissions. Its success means that the technology is now being rolled out to other data centres at the Telehouse London Docklands campus. The technology has also proven to be especially valuable for Telehouse at a time of record breaking temperatures in the UK. During July and August, the software enabled the organisation to successfully monitor and protect equipment and maintain uptime.

'The initial results achieved with Telehouse have proved promising, but this is just the beginning,' said Dean Boyle, CEO at EkkoSense.


Dean Boyle

Equinix expands into Indonesia with $74m data centre investment

Equinix has announced its expansion to Indonesia, with plans for a $74m International Business Exchange (IBX) data centre in the heart of Jakarta. Through this expansion, Equinix will allow Indonesian businesses, as well as multinationals with a presence in Indonesia, to leverage its platform.


Jeremy Deutsch

Indonesia has emerged as a significant digital economy in value, and is expected to be a key hub of interconnection in the region. With major cloud service providers such as Google Cloud, Amazon Web Services (AWS), Microsoft Azure and Alibaba Cloud launching cloud regions in Indonesia, the country is forecast to become the second largest public cloud market in Southeast Asia.

Jeremy Deutsch, president Asia-Pacific at Equinix, said, 'Having a presence in Indonesia allows Equinix to provide digital infrastructure that enables local businesses to tap growth opportunities abroad and support global organisations looking to access the expanding Indonesian digital economy. We look forward to working closely with local authorities, network providers and the broader industry ecosystem players to help unleash Indonesia's digital potential.'

Colt Group secures platinum EcoVadis rating for outstanding ESG performance

Colt Group has been awarded a platinum rating from EcoVadis for its environment, social and governance (ESG) performance. The highest possible rating builds on Colt's achievement of gold status less than 12 months ago and recognises its deep commitment to policies, action and results around sustainability.


Keri Gilder

EcoVadis partners with more than 100,000 companies from over 200 industries across 175 countries to deliver the world's most credible, trusted sustainability ratings. The latest ranking positions Colt in the 98th percentile with a score of 75 out of 100, taking into account ratings for action and commitment in four key categories – environment, labour and human rights, ethics and sustainable procurement.

Keri Gilder, CEO at Colt Technology Services, said, 'We're incredibly excited to join the top one per cent of EcoVadis partners awarded platinum status. It's a fantastic endorsement of the work we're doing to drive meaningful, long-lasting change for our people and our planet.'

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Alternatives to Increasing Throughput

More and more devices that require bandwidth are showing up in schools, offices, and factories every day. In schools, children are using Chromebooks to access research sites, each one requiring access and bandwidth. In offices, there is the bring your own device phenomenon, each one requiring a connection. Sensors are being widely deployed on the factory floor, each one needing a connection to factory automation software. The common requirement with all of these devices: bandwidth.

There are many hurdles one has to overcome to increase the bandwidth of an existing fibre backbone. Although it sounds easy when one says, "Just replace the old multimode fibre with new singlemode fibre", it is rarely that easy. Replacing the fibre can be intrusive, disrupting the normal operations in the office or factory floor. The dust that is generated would certainly be a problem in some vertical markets, e.g., hospitals. The fibre replacement project could span over several days, or worse, if the installer runs into unforeseen problems. While all of this is going on, the existing links are brought down which means all of the devices requiring bandwidth are rendered useless. In addition to all of this, replacing existing fibre backbone is an expensive proposition.

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Businesses expanded more in the last five quarters than in the past five years

The Global Interconnection Index (GXI) 2023 by Equinix found that globally the most ecosystem connected businesses – those directly interconnecting with partners to provide their own digital services – have expanded their digital operations more in the past five quarters than in the previous five years. On average, organisations around the world are connecting to three times as many business ecosystem partners and metros, consuming more than twice the amount of interconnection bandwidth.


Russell Poole

As businesses reinvent themselves in the aftermath of the global pandemic, ecosystem density has become a catalyst for digital innovation, which continues to fuel the growth of interconnection bandwidth. According to GXI 2023, global interconnection bandwidth is forecast to reach 27,762+Tb/s by 2025, representing a five year compound annual growth rate (CAGR) of 40 per cent.

Russell Poole, managing director UK at Equinix, said, 'The latest GXI reveals that despite supply chain constraints and ongoing geopolitical and economic instabilities, organisations continue to prioritise a digital first strategy. Digital leaders recognise the value in creating agile IT infrastructures interconnected to their entire digital ecosystems to ensure prime performance, accelerate their environmental, social and governance objectives, and develop business opportunities on a global scale.'

NEWS IN BRIEF

James Cunningham, CEO and co-founder of Core to Cloud, has been named as one of the Ones to Watch in The Times' LDC Top 50 Most Ambitious Business Leaders list.

On a live optical fibre route with existing ROADM infrastructure between Hamburg and Copenhagen, Arelion successfully leveraged Acacia Bright 400ZR+ QSFP-DD coherent modules with greater than +1dBm transmit power between Cisco 8000 and NCS 5700 router platforms.

BCS has joined RSBG SE – a foundation with the long-term public purpose to deal with environmental protection.

Nokia will lead the Hexa-X-II project, the second phase of the European 6G flagship initiative. This new phase will expand the Hexa-X partner list to 44 organisations that are tasked with creating the pre-standardised platform and system view that will form the basis for many inputs into future 6G standardisation.

Takayo Takamuro has been promoted to the role of managing director at Telehouse International Corporation of Europe.

Getting optical fibre end testing right

Testing fibre optic cables and troubleshooting problems is crucial and the right to phase of optical fibre end-face testing, says Fluke Networks' technical expert and

• What is optical fibre end-face testing?

Measuring the integrity of fibre optic network installations is critical to enabling the fast transfer of communications data. Fibre optic data communications require networks to operate at minimal downtime and maximum efficiency. One of the most important checks that installers and systems integrators can carry out is an end-face test, which involves checking the section of an optical fibre network that makes an interface with another fibre optic component.

• What end-face testing tools are available?

Technicians can struggle when working with fibres that are either not operating correctly or are simply not operating at all – dark fibres. The FiberLERT from Fluke Networks is the world's first live optical fibre detector, which enables operators to carry out basic tests on fibre to easily identify polarity issues and failed transceivers. The award winning, pocket sized tool detects invisible near infrared (850nm-1625nm) wavelengths.

An ideal solution for common, but traditionally difficult, troubleshooting applications that require the fast identification of cable and port issues, the FiberLERT is designed with simplicity in mind. An audible alarm and an LED light glows when the device is put in front of an active fibre optic port or patch cord. It really is that simple – if it makes a sound or lights up then an active link has been identified.

Even the smallest speck of dust and debris can cause errors or failure on a fibre optic connection. The FI-3000 FiberInspector Ultra Camera is an ideal solution that is designed for simple and efficient testing of trunks, cassettes and array cables used with multi-fibre push-on (MPO) connectors. A 'live view' assessment is available, as is the ability to move from full trunk to individual end-faces in real time using touchscreen gestures.

• What is the fastest way for network technicians to locate faults and verify continuity or polarity issues?

l-face

FLUKE networks

ols need to be selected for each
l training manager, Robert Luijten

Speed is of the essence and Fluke Networks' VisiFault Visual Fault Locator (VFL) displays a continuous or flashing visible light to enable fast identification of activity and faults. Technicians can use the rugged, laser powered device to locate breaks in cables, damaged connectors on patch cords, defective splices and tight fibre bends in and around equipment racks. Compatible with 2.5mm and 1.25mm small form factor connectors, the battery operated VFL speeds up the process of end to end fibre checks and can be used in the field for up to 80 hours.

• What future trends do you see?

As the number of fibre optic networks increases, the need for highly skilled network testing operatives will grow. However, powerful, easy to use network testing equipment will offer a way to both overcome the skills gap and ensure fast and efficient testing. Accurate data will be recorded and shared in real time – crucial in the kinds of markets where fibre optics are required.

At Fluke Networks, we have developed solutions for fibre testing that deliver significant cost and time savings to customers. The ability to identify and locate problems accurately, swiftly and cost effectively, with minimal contamination or damage is a serious game-changer in the world of fibre optic network testing.

www.flukenetworks.com

Getting the facts straigh

Hi Rob

I'm dating myself by saying this, but I can remember a time (a decade or so ago) when a company could make carbon footprint claims based almost entirely on metrics they determined on their own. This is not to say that lies were running rampant. The vast majority were good faith efforts based on the information at hand, but without universal reporting standards their claims were akin to me declaring myself 'the most handsome man in the world' because my mother says so. (Full disclosure: I'm not and she doesn't!)

Today, however, there is a raft of organisations out there positioning carbon accounting metrics. One would assume that the increased availability of options helps keep companies 'honest' by providing reporting frameworks that allow some semblance of apples-to-apples comparison between carbon claims – and it does. But at the same time, the proliferation of players can muddy waters that were just beginning to clear.

So how does a network installer/integrator decipher their partners' carbon credentials? By stripping away the non-essential paid for third-party certifications, obscure audit reports, self-appointed gold stars and getting at the underlying reporting metrics. You'll find that nearly every fully credible carbon message is underpinned by two universally accepted standards.

The Greenhouse Gas (GHG) Protocol

Launched in 2001, the GHG Protocol sets the standard for calculating carbon emissions. I've yet to find a respected global variant that doesn't align with its core methodology. If you ever hear someone talking about Scope 1, 2 or 3 emissions, they're talking about the GHG Protocol.

The Science Based Target initiative (SBTi)

Developed by a host of well-known non-governmental organisations (NGOs) and the United Nations, the SBTi sets the most widely accepted global targets for reducing carbon emissions. Based on the GHG Protocol reporting metrics, the SBTi aims to limit warming to 1.5°C, halve global greenhouse gas emissions by 2030 and achieve net zero emissions by 2050.

When addressing vendor carbon claims,

nt

you should be looking for evidence that their calculations are based on the GHG Protocol. At minimum, they should cover both Scope 1 and Scope 2 emissions, but including full Scope 3 numbers represents next level environmental commitment.

The next step after calculating a GHG Protocol based emissions inventory is setting targets for reducing those emissions. That's where SBTi comes in. Companies publicly committing to SBTi carbon reduction targets are, almost literally, putting their money where their mouth is. SBTi targets are incredibly aggressive, especially for manufacturers, so taking the commitment step signals a true devotion to building a more sustainable world. They're in it for the long haul and are committed to adapting their business model to drive sustainable growth for themselves and their partners.

Brian Duval
Siemon

Editor's comment
Like Brian, I too can remember when companies seemed to be able to make spurious sustainability based claims without being challenged. It's great that things have progressed to the point where the GHG Protocol and SBTi are being recognised and adopted more readily. If we are to successfully address the carbon reduction issue then the clarity that these two standards offer will be invaluable.

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Ask the experts

Consultants occupy a unique position within the enterprise and data centre network infrastructure industry but their exact role can be a difficult one to define. Inside_Networks has assembled a panel of industry experts to look at whether using these industry professionals can offer any real benefits

Opinions of consultants and what they can offer differ wildly. For some they are expert advisors who, through their high levels of organisation and knowledge, can make sure the best quality solutions are installed on time to the highest standards. For others, they simply justify their existence by making everything far more complicated than it needs to be.

Of course, there's the consultant's own view to consider. Put simply, some people are never happy and while the pay might be good, some clients want to make sure that any money is fully earned.

So what qualifies someone to call themselves a consultant? It is a title that comes loaded with meaning but, effectively, anyone can set up a business and use this designation to described what they do. Therefore, being able to differentiate a bona-fide consultant for a chancer with little or no real knowledge or experience could be harder than it looks. In order to get to the bottom of this issue, Inside_Networks has assembled a panel of experts to discuss it.

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

JOHN BOOTH
MANAGING DIRECTOR AT CARBON3IT

The definition of a consultant is a person who provides expert advice professionally, and businesses hire consultants to help them meet business challenges – the perfect match!

Businesses use consultants to provide a view from outside of their organisation and to supplement manpower. This is often because they need specialised skills, or a safe zone, by providing advice on things that may be unpalatable internally due to politics, and the methods to resolve them. So, yes, there is a considerable benefit in employing a consultant on your enterprise or data centre network infrastructure project, depending at what stage he/she is engaged.

He/she should have a professional expert networking accreditation or qualification such as the Cisco Certified Internetwork Expert (CCIE) or similar, as well as a cabling qualification such as the Certified Network Infrastructure Design Professional (CNIDP) – a recognised project management qualification and a verifiable track record. Before engaging your selected person, make sure you get a history of the projects they've worked on and get feedback from their customers.

As with many projects, internal staff may only experience a full network upgrade a few times in their career, and I guarantee that things in the networking space will have moved on since the last time they were involved. A network consultant who does this as a living and moves from project to project for multiple companies will know the basics but also the pitfalls – sometimes through bitter experience – and be able to navigate their way through the project.

A good consultant will be able to write an initial business case, outline the need, adhere to standards, provide knowledge of the latest cabling and networking products, design the actual solution, and work with internal staff to procure and project manage the installation, commissioning etc. Ultimately, the success of a project is in the original brief. He/she will need to have clear goals, outcomes, budget, reporting lines and sufficient internal and external clout in order to get the job done.

'ULTIMATELY, THE SUCCESS OF A PROJECT IS IN THE ORIGINAL BRIEF. HE/SHE WILL NEED TO HAVE CLEAR GOALS, OUTCOMES, BUDGET, REPORTING LINES AND SUFFICIENT INTERNAL AND EXTERNAL CLOUT IN ORDER TO GET THE JOB DONE.'

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ALBERTO ZUCCHINALI

DATA CENTRE SOLUTIONS AND SERVICES MANAGER AT SIEMON

When it comes to an enterprise/intelligent building or a data centre project – either a new build or an upgrade – it is imperative that the infrastructure is designed to ensure performance, reliability, uptime and scalability, while also taking energy consumption and long-term costs into consideration.

A good consultant will know how to best design the infrastructure to support the current and next generation systems in your network. They will have the expertise to optimise energy efficiency and ensure support for future technologies and expansion, while carefully balancing capital and operational expenditure to reduce risk.

Consultants should also know the latest codes and standards that need to be followed throughout the project. This includes complete knowledge of all applicable ISO/IEC and European standards that apply in each of those two environments – enterprise networks see a constant trend to convergence over IP and power over Ethernet (PoE) applications, while speeds in the data centre are growing daily to support a continuous request for bandwidth for either cloud or corporate customers.

A consultant should have several years of experience with equivalent projects and be able to readily offer references that can be contacted for testimonials, or even previous data centre sites that can be visited. Also, look for expertise that best complements the expertise within your own organisation. Certifications, training and professional affiliations are also key qualifications of a consultant. Depending on the types of systems in place, vendor specific certifications and training are also a consideration.

Businesses simply cannot afford an infrastructure design that doesn't take all current and future transmission factors into consideration. Not employing a specialist data centre design services expert or consultant for your next intelligent building or big data centre project could ultimately be a costly mistake. Leading vendors can help end users and consultants define the best design and installation guidelines for their network infrastructure.

> 'A GOOD CONSULTANT WILL KNOW HOW TO BEST DESIGN THE INFRASTRUCTURE TO SUPPORT THE CURRENT AND NEXT GENERATION SYSTEMS IN YOUR NETWORK.'

BARRY ELLIOTT
DIRECTOR AT CAPITOLINE

In my experience the really big boys in the business such as Amazon, Google, Equinix, Digital Realty etc don't have much of a requirement for external consultants. They are so big that they have all the engineering expertise they need in house. But what about the other two thirds of the data centre market – the medium sized colocation and telecommunications companies and the enterprise data centres used by every conceivable commercial and public body?

They certainly do not have the in-house expertise in facilities management issues that they need to improve or expand their operations. This issue is exacerbated by the fact that every enterprise data centre is managed essentially by an IT department that only has a passing knowledge of power supplies, air conditioning, fire safety systems and building management systems.

Over the last 10 years we have seen a great move away from in-house facilities management personnel and towards outsourced companies. There is nothing inherently wrong with this approach – but it must be managed properly. This is a very reactive scenario, in other words the company will ask the facilities management company to organise the maintenance of equipment, air conditioning, generators etc, and they will go and do it, albeit with yet another layer of subcontractors.

This all requires supervision and management oversight from the company to assure the work has been done and documentation has been brought up to date. There is no facility here for improvements, changes or growth – that would be a separate contract – and who would manage that anyway?

This is where independent, external consultants can add value to small/medium sized data centre providers and all enterprise and self-managed data centre operations. Consultants that can see the big picture of data centre facilities management can audit existing facilities to preview designs, root out single points of failure, inefficient operations and health and safety violations. From this a consultant can guide the data centre owner towards new project definitions, procurement specifications, installation oversight and final commissioning services, and help the company accept any new works into their existing facilities management framework.

'CONSULTANTS THAT CAN SEE THE BIG PICTURE OF DATA CENTRE FACILITIES MANAGEMENT CAN AUDIT EXISTING FACILITIES TO PREVIEW DESIGNS, ROOT OUT SINGLE POINTS OF FAILURE, INEFFICIENT OPERATIONS AND HEALTH AND SAFETY VIOLATIONS.'

MICHAEL AKINLA

BUSINESS MANAGER NORTHERN EUROPE AT PANDUIT

In an economically pressured market customers are even more acutely aware that value for money must be gained from every element of their enterprise or data centre network infrastructure project. The systems, equipment and infrastructure are a given and original equipment manufacturers (OEMs) have their technical sales, but they are there to sell a specific solution or range of solutions to match the customer's current and future technology needs.

However, the building, the processes, technology configuration and, to some extent, the physical products, often depend on input from consultants. Infrastructure projects are complex and interconnected on many levels, and they are often subject to numerous changes during the project lifecycle. Each of these variations, whether it is in the building or the infrastructure, can impact what was a harmonised plan. And this is where experienced and proficient consultants demonstrate their value.

Firstly, most are independent from the construction companies and equipment suppliers. Their role is to advise the customer on the most effective processes and, depending on their contracts, to mitigate risk from project start to finish. Consultants provide a wealth of relevant and often specialised expertise that few customer organisations can match, as this may be the customer's first development of this nature.

This experience and hard earned knowledge builds confidence. Regular interaction with the various suppliers, trades and organisations involved creates a level of understanding that can often identify possible problems before they occur.

The technology to plan, monitor and analyse project lifecycles has matured to such an extent that a complete enterprise or data centre environment can be created virtually, and changes made in the digital twin to see the impact across the project. Consultants are often essential to this process as they have an overview of the complete design and plan.

Building information modelling (BIM) allows consultants and customers to populate the virtual design with OEM models. This allows highly detailed renders to be created, moved and changed as required, permitting highly visual imagery and ensuring the customer knows exactly what to expect in the completed project.

Finally is the value of the guidance consultants offer on standards, inspection and testing procedures within the actual deployment. Providing written documentation and processes that set the groundwork for good governance are essential to any project.

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STEPHEN BOWES-PHIPPS

SENIOR DIGITAL INFRASTRUCTURE CONSULTANT AT PTS CONSULTING

There are three main reasons why companies employ consultants:

• Lack of skillset or understanding of a market, product or technology

It is often wiser to bring in the knowledge that is needed rather than try to develop it in house. Consultants can provide those skills that are needed but, crucially, they have often used them elsewhere and so have experience that cannot be replicated in training courses.

• Lack of resource

Business demands can often result in peaks and troughs of resource utilisation. Consultants can fill those resource holes, providing the flexibility that is needed when, say, a large amount of cabling needs to be done for a data centre fitout, without the problems of recruitment.

• A deficiency in internal capability

Ever looked around you and thought, who do we have who can deliver a programme on this scale or a project of this criticality? Senior consultants work across organisational levels and have the experience to go with it. Consultants have the support of their practice colleagues who can bring additional insight into an engagement when needed. A staff member may struggle to find anyone internally who can do the same.

When engaging a consultant, you are placing control of your business and technology risk into their hands. To successfully access the benefits that a consultancy can offer ensure:

• There is a clear understanding of what the consultancy has come in to do.

• There is no distinction between the consultant and staff. This means the consultant can act on the client's behalf, without duplication of effort, and take decisions based on the degree of latitude the client has extended to them but also as though they were the client themselves. This is vitally important when trying to deliver any technology strategy within an organisation, as there are often many attributes, constraints, history and future plans within a client organisation that need to be considered.

• That you avoid consultancies that do not offer a tailored, bespoke solution. 'Cookie cutter' proposals (and deliverables!) that repeat without consideration from one engagement to another overlook the unique needs of each client.

'BUSINESS DEMANDS CAN OFTEN RESULT IN PEAKS AND TROUGHS OF RESOURCE UTILISATION. CONSULTANTS CAN FILL THOSE RESOURCE HOLES, PROVIDING THE FLEXIBILITY THAT IS NEEDED.'

RICHARD CLIFFORD
HEAD OF SOLUTIONS AT KEYSOURCE

Specialist data centre consultants are more valuable to enterprise and data centre projects than ever before. The ability to identify opportunity and confidently make change is key to enabling tactical changes, at pace, and for maximum impact. This can only come from a team that is experienced, focused on the job at hand and empowered to challenge and make change.

We are operating in a world with a rapidly expanding social and economic consumption. This relies on processing, data and transfer to be both secure and sustainable, alongside a skills shortage and severe supply chain issues.

With this growth, pressures on enterprise and data centre teams have never been greater, with success measured on outcomes, and with rewards to those who can move quickest measured in energy reductions, releasing/selling real estate, reduced operational costs, carbon reduction etc. In addition, following a number of high profile cyberattacks, security concerns remain high, with the risk of brand and reputation damage, as well as high financial penalties.

It has never been harder to find skilled people, with the right knowledge and experience. This is with a backdrop of increasing regulation – the Energy Efficiency Directive (EED) brings increased reporting requirements and accountability for operators and providers of digital services. Meanwhile, there are self-regulatory initiatives, such as The Climate Neutral Data Centre Pact (CNDCP). This requires signatories to make a binding commitment to achieve a Power Usage Effectiveness (PUE) rating of between 1.3 and 1.4 in sites built up to 2025.

Finding a specialist consultant that can embed into your team, bringing not just the experience of the individual but wider experience and processes of the consultants' business, can not only plug a skills and knowledge gap but also free up your team to focus on its strengths, increasing your success in delivering key outcomes whilst reducing risk. An external unbiased view will also aid in challenging preconceptions and, in my experience, help to identify opportunities a busy team might have missed through over familiarity or sheer volume of work.

A consultant's role is not purely a technical one – we are highly agile integrators, enabling enterprise and data centre teams to flex and embrace rapid change and growth, quickly becoming part of the team to deliver outcomes and benefits. It is not simply about finding a consultant, but a specialist partner and trusted advisor.

'A CONSULTANT'S ROLE IS NOT PURELY A TECHNICAL ONE – WE ARE HIGHLY AGILE INTEGRATORS, ENABLING ENTERPRISE AND DATA CENTRE TEAMS TO FLEX AND EMBRACE RAPID CHANGE AND GROWTH.'

HellermannTyton

Component Compliant Cat6A/Cat6 Systems

HellermannTyton Connectivity have chosen component level testing for the HTC range of Category 6 and Category 6A products. This outlines the dedication for quality, performance, and reliability of the product solutions. It also guarantees true performance when installed correctly by an authorised installer.

Currently in the UK, HellermannTyton are the only UK manufacturer to have a component compliant Category 6 UTP system where industry standard PCB punch down panels and PCB Punch down Euro / 6C modules are used. In addition, HellermannTyton are currently the only manufacturer to have full Category 6A MPTL verification.

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Pulsant appoints new COO to strengthen service and operational excellence


Ben Cranham

Pulsant has appointed Ben Cranham as its new chief operating officer (COO). Cranham has extensive operational and commercial leadership experience right across the technology sector. In his new role he will focus on ensuring Pulsant delivers excellence for a client base across its national network of 12 interconnected data centres, edge and hybrid cloud platforms.

Cranham said, 'I'll be using all my experience and understanding of the IT sector to ensure excellence is embedded in everything Pulsant does across the entire network of data centres providing market leading colocation, cloud and networking services. Only by ensuring the highest levels of service, flexibility, resilience and security can we help organisations embrace the digital future, achieve their goals and fulfil their potential.'

Vertiv launches enhanced partner programs to reward expert resellers

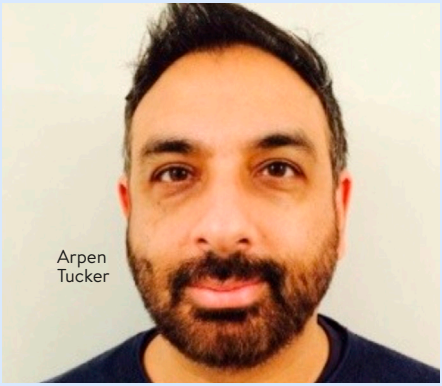

Martin Ryder

Vertiv has made significant enhancements to its Vertiv Partner Program (VPP) and Vertiv Incentive Program (VIP), which focus on rewarding its network of expert distributors and resellers. The VPP and VIP are available to partners in select countries across Europe and the Middle East, including the UK and Ireland.

Central to this is a new and improved partner portal, which brings together all of the resources partners need to engage with the Vertiv team and to earn and redeem valuable rewards. Vertiv distributors and resellers will benefit from an intuitive, user friendly design featuring a personalised dashboard where they can easily view the bonus points they have earned, see the incentives on offer and redeem exciting rewards.

Martin Ryder, channel sales director UK and Ireland at Vertiv, said, 'Our partners, distributors and resellers are vital to Vertiv's business, delivering the services, solutions and expertise our customers need. We're committed to continuing to incentivise and reward our expert partners for the great work they do.'

Vantage Data Centers appoints Arpen Tucker as senior business development manager


Arpen Tucker

Vantage Data Centers has appointed Arpen Tucker as senior business development manager. Based in London, he has responsibility for winning and managing new enterprise business for Vantage, focusing on the UK market and the company's Cardiff hyperscale and colocation campus.

Joining from Global Switch, Tucker has more than 20 years of industry experience, having worked in senior sales/commercial roles for a number of leading technology companies across telecoms, data centres, hosting and cloud services. In addition to Global Switch, these have included Telecity and Globix, Epsilon Telecommunications, Megaport and Lumen.

'I am excited to be joining the Vantage team during a period of continued investment and rapid growth,' said Tucker. With our world class facility in Cardiff, we have a tremendous opportunity to cement our position as a leading provider of colocation services to large scale enterprises in the UK.'

CPI opens its new global headquarters in California


Michael Cluster

Chatsworth Products (CPI) has opened a new global headquarters in Simi Valley, California. Located a short distance from the company's original location and namesake in Chatsworth, the headquarters more than doubles the company's California manufacturing footprint, while continuing to expand overall operational capacity and output at a time when supply chain logistics and workforce recruitment and retention are key to sustained growth and success.

'The official opening of our new global headquarters represents a major milestone for CPI,' said president and chief executive officer, Michael Custer. 'Not only does it unite our California based corporate and production workforces under one roof, but it also stands as a point of pride and growth for the company's history, ingenuity and commitment to employee ownership.'

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All you need to know

CLICK ON THE COVER TO VIEW THE 2023 MEDIA KIT

Canalys and Schneider Electric find 75 per cent of EMEA partners have developed ESG strategies

Schneider Electric and Canalys have published new research exploring the maturity of IT channel sustainability initiatives, and the impact of environmental, social and governance (ESG) on customer purchasing decisions. It sought to understand the readiness of the global IT channel ecosystem in their sustainability journeys and the role of the partner in the wider ecosystem.

120 EMEA partners were surveyed, with three quarters of partners having dedicated ESG resources. However, many channel businesses still struggle to translate this into action. Customers are also increasing the focus on ESG, specifically in terms of environmental considerations, with 69 per cent of partners stating that customer environmental considerations are driving IT investment decisions. The report also found the majority of partners have already identified the benefits of providing takeback and recycling services, with more than 65 per cent of the partners surveyed already offering takeback.

'Now is the time for partners to double down on their sustainability efforts and play a vital role in reducing carbon emissions and waste,' said David Terry, vice president IT channels at Schneider Electric. 'Energy optimisation, energy efficiency and managed power services all present key opportunities for partners to differentiate and drive market share.'

CHANNEL UPDATE IN BRIEF

Gigamon has welcomed Stephen Oliver as general manager north EMEA and Jason Wang as cloud solutions consultant EMEA.

Mark Molyneux has been appointed as chief technology officer for Cohesity in Europe, the Middle East and Africa (EMEA).

Pulsant has achieved Prestige Partner status from Megaport, making it the first company in the UK to achieve the status through organic sales and revenue growth.

Epsilon has appointed Sungjoon Choi as its chief financial officer.

NTT has appointed Eric Clark as the CEO of its Americas division. Reporting to Abhijit Dubey, global chief executive officer, Clark will leverage his deep understanding of the market to drive growth in the Americas and support the launch of new and innovative combined offerings.

MLL Telecom has appointed Liam Sloan and Mark Harrison as client managers.

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To apply to be a partner **CLICK HERE** to complete the application form.

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To make sure you make the most of being a VASP we would recommend that at least one of your engineers attends the Hikvision Certified Security Associate (HCSA) course. This one day free course is held in Manchester, Uxbridge, Glasgow or online – you can check out the upcoming courses by **CLICKING HERE.**

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If you don't already deal with Mayflex, you can easily open an account by **CLICKING HERE** and completing the online application form.

For more information about Mayflex **CLICK HERE**, call our security sales team on 0121 326 2228 or **CLICK HERE** to send an email.

The story so far...

Nick Edwards of HellermannTyton charts the evolution of pre-terminated cabling systems

Pre-terminated cabling systems have been around for decades and their ease of use has given them a robust notoriety in the industry. Yet today their benefits can sometimes be taken for granted, while the evolution of the pre-terminated cabling system as a product is also somewhat undervalued.

HISTORY LESSON

If we look at the history of pre-terminated cabling systems, we will see an uptick in usage when new cabling standards are released. Interestingly, for twisted pair Ethernet cabling it appears typical that the peak usage is short-lived.

Upon release of Category 6A, for example, many installations were carried out using pre-terminated systems. This was driven by an understandable lack of experience in terminating Category 6A on-site. We know that such a system requires careful handling and termination practices to ensure performance is guaranteed, especially where lifetime system performance warranties are required by the end user.

The benefit of having a pre-terminated cabling system that is produced and tested in a factory can help to improve installation practices for those who have little to no experience. However, over time, installer

friendly components have been produced, while training alongside practical skills has improved installation workmanship, making it more beneficial for network installation companies to install on-site using system components. Long-term, whilst there is still a vast array of benefits, this has particularly reduced the use of pre-terminated copper systems.

LIGHT WORK

If we look at optical fibre, we get a very different picture. Again, typical usage of a pre-terminated fibre system can be attributed to its ease of use and a shortage of experience in working with fibre specifically.

But despite the relatively fast demise of on-site polishing in favour of fusion splicing, as an industry we still rely heavily on pre-terminated fibre solutions. If we fast forward and look at today's product offerings, it is extremely clear how well pre-terminated fibre has evolved. We have gone from simple factory terminated fanout distribution cables to more complex higher density configurations using a variety of cable types and modern connectivity.

Most of this has been driven by changes in the market, which has introduced new types of connectors and a larger ecosystem of fibre cable constructions.

Markets such as data centres and, more recently, FTTX have helped to shape the requirement for higher density fibre cabling to enable us to capitalise on available connectivity real estate.

MAKE THE CONNECTION

Most commonly in the data centre market, LC and MTP connectivity are at the forefront of requirements to enable such density. With even smaller footprint connectors on the horizon including the MDC, CN and SN, this has sealed the fate of the fibre optic pre-terminated cabling system as a solution embedded as a standard product offering. This is already in full swing and has been for some time.

With MTP now the backbone of the modern data centre, it has become standard practice to deploy the use of pre-terminated cabling solutions. MTP/LC fan out cables, MTP/LC cassette assemblies and MTP backbone cables are considered standard products today, but they are all pre-terminated cabling products – terminated and tested in a factory environment by the manufacturer. These components require a high degree of knowledge, experience and accuracy when terminating. With the added complexity of polarity, gender and a high fibre count, it simply makes on-site termination completely impractical.

The risk of human error is too great for such high value products. Even in a factory environment, with all the equipment and expertise, it can be challenging. The higher the fibre count the greater the risk of assemblies requiring repair or disposing of

and this can be for the simple reason of a single fibre out of 144 breaking in the link. Imagine trying to remedy this on-site amongst the other challenges.

GROWING CONCERN

We can now begin to see a dynamic adoption of pre-terminated fibre solutions in the FTTX market – as this area grows so do the installation procedures and refinement of practices by the altnets. LC and SC are the preferred connectivity types and although these are simpler to work with when compared to MTP connectivity, there is still a high degree of large fibre counts within a very small footprint.

If we consider telecom exchanges, these now house high capacity optical distribution frame (ODF) systems, typically utilising simplex formats. Similarly, we now see street cabinets that benefit from using pre-terminated cassette based products. This gives rise to a different set of industry specific products, for example, cassette assemblies with factory assembled splitters built-in. This allows telecom engineers to quickly install links and increase the quality of cabinet cable management and identification.

EASY DOES IT

Pre-terminated fibre systems in both the data centre and telecom markets in general are helping to improve the overall quality of installations. With the time saved from a reduced amount of on-site termination, engineers can focus more on general cable handling, routing, identification, inspection and testing.

The one downside with pre-terminated systems is the fact that in many cases the term 'plug and play' can be taken too literally.

Plug and play is a marketing term used to describe the quick ease and use of pre-terminated systems. It is perfectly acceptable to describe them in this way, however, anyone wishing to use a pre-terminated cable would benefit from the following guidelines to achieve best practice:

- Before ordering your assembly, you must understand the lengths required to complete the intended pathway link. This must include any required slack to allow for proper installation and management, as well as possible moves, adds and changes. This is critical, as the manufacturer will be reliant upon this information being correct.

- Cabling routes and access must be reviewed before configurations are considered. Difficult pathways, or ones with reduced access, may benefit from bare end assemblies or staggered connectivity in order to ensure the overall assembly diameter is not too large so that installation becomes impossible or causes damage to the pre-terminated loom.

‘Pre-terminated cabling has evolved very quickly and is now the cornerstone of specific markets. This will only continue as we push the boundaries of density, reduce installation times and improve installation practices.’

- Cable handling is still important. Yes, pre-terminated cables are factory terminated and tested but on-site handling can change a cable’s characteristics and, therefore, final performance. Attention to pathways, cable management, bend radii and applied pulling force are still critical.

- Pre-terminated fibre assemblies require final inspection and cleaning. This is done in the factory post assembly and pre-test. However, installation environments always harbour many more contaminants that will affect overall performance. Fibre inspection and cleaning is one of the most important installation policies to have as it is often overlooked and can solve most performance issues.

- Keep a record of any serial numbers on the assembly and ensure labelling and identification is clear and correct. In the rare event of any product issues, the manufacturer will require confirmation of serial numbers in order to trace the product or component batches. Clear identification in high density areas is key to maintaining a clean and accessible patching environment, reducing the risk of errors. One of the major benefits of a pre-terminated assembly is that bespoke labelling requirements can be done at the factory.

ONWARDS AND UPWARDS

Pre-terminated cabling has evolved very quickly and is now the cornerstone of specific markets. This will only continue as we push the boundaries of density, reduce installation times and improve installation practices. ■

NICK EDWARDS

Nick Edwards is LAN connectivity product manager at HellermannTyton. He has been with the company since 2018 and has over 10 years of product management experience across the network infrastructure sector. At HellermannTyton, Edwards has streamlined and relaunched the LAN connectivity product range, spent time developing the multi-dwelling unit (MDU) product range and plays a key role in delivering installer training for copper connectivity to a wide network of customers.

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Excel Networking Solutions offers a range of Specialist Support Services, ideal for projects with limited installation time on-site or for rapid deployment. We deliver expertly inspected, fully traceable and 100 per cent tested systems. Our range of Specialist Support Services are carried out by a team of trained experts at our Birmingham headquarters.

Pre-terminated copper solutions are available in all categories of copper cable in screened and unscreened constructions. We can supply cables as single or loomed assemblies, fitted with modules, jacks or plugs at either or both ends, or pre-installed into a pre-labelled patch panel.

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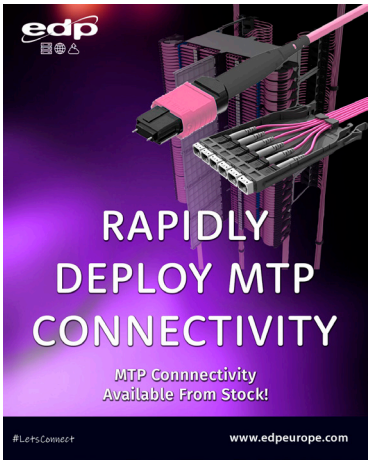
EDP Europe

EDP Europe is a stockholding distributor of fibre optic solutions from Huber+Suhner, enabling our clients to rapidly deploy MTP connectivity to future proof their network infrastructure.

Pre-terminated MTP trunk cables are now available with US Conec MTP Pro connectors. Providing greater flexibility by enabling quick and effective polarity and gender reconfiguration in the field, they help lower expenditure by reducing the number of cables needed to be kept on hand. Used in SR4 40Gb/s and 100Gb/s networking, MTP Pro connectors have a longer insertion and extraction sleeve, reducing the risk of damage to the ferrules and making connector mating easier and safer.



This, coupled with the Huber+Suhner IANOS system, enables a fast, flexible and modular solution that future proofs fibre networks – providing a quick, simple and inevitable upgrade path from 10Gb/s to 100Gb/s and beyond. IANOS provides best in class density, speed of installation, handling and scalability.

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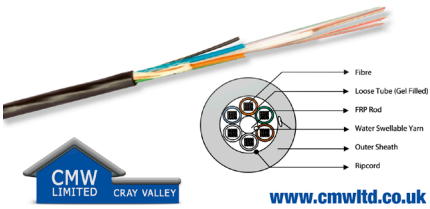
Cable Management Warehouse (CMW)

Recently, there have been some issues for both installers and infrastructure companies when it comes to maintaining a regular supply of high optical fibre count microduct cable, which is not great for project managers and installation projects alike. CMW can provide a consistent supply of PIA/BT approved microduct fibre cables – this includes 12 core, 24 core, 48 core, 96 core, 144 core and 288 core.

These cables are available in 200 and 250 microns. The 200 micron option gives you an incredibly compact overall diameter, with a 20 per cent thinner cladding compared to standard microduct cables available on the market. This allows you to accommodate more fibres in standard size ducting, making these fibre cables perfect for blown fibre installations where capacity is tight, or high density would be beneficial.

With a water blocked core interstice and 24 fibres per tube, our cables are designed for easy installation and long-lasting durability. To find out more and to get expert advice when selecting your fibre optic cabling products, call 01234 848030 or **CLICK HERE** to visit the CMW website.



www.cmwltd.co.uk

One step ahead

Mayflex's Richard Cann discusses the benefits of using pre-terminated systems and how they can save time, resources and produce a higher quality product. He also details the circumstances where pre-terminated systems may not be the best solution

It's a common misconception that installing and terminating copper and optical fibre cable on-site is the easiest and cheapest choice, but have you considered the options and opportunities pre-termination offers? Using pre-terminated fibre or copper cables sourced from a reputable, specialist company is a great way to ensure reliability, save time, be more sustainable and, perhaps more surprisingly, save money.

READY TO GO

Pre-termination is the assembly process by which copper or fibre cable arrives at site ready to go. A specialist team will have assembled, tested, labelled and packaged the product, so when it arrives it's ready to plug and play. Outsourcing to a specialist team might sound expensive, but there are some ways it can save you time and money in the long-term.

It can be difficult to find skilled personnel, especially at the moment, and get people on-site. The demand for on-site labour is outstripping demand and labour rates continue to increase. The more work you need to do on-site, the more people you need.

This means more labour and management, more travel, more dependence on people, more training and skills required, more equipment and personal protective equipment (PPE). Not to mention the costs to cover CSCS and other qualifications, site inductions and toolbox training, which is mandatory for most sites. You also need to consider that working with fibre is a more technical skill than copper, so finding the right people will be even more expensive.

ASK THE EXPERTS

Outsourcing part of this work to a specialist company and using its expertise solves this problem and, at the same time, offers

other advantages. Its team will comprise professionals working in a sterile, clean and comfortable environment, using their skills and tools to do the same job each day, which increases the quality of work and reduces the risk of error. They know the techniques and processes to get things right first time and don't need close supervision – another potential on-site cost.

Sites aren't sterile (and fibre needs to be clean) and they won't usually have all the equipment needed to process the copper and fibre. Equipment such as fibre polishing machines and interferometers for checking the ferrule endface geometry are not at all practical for use on-site. Hand polishing does not produce good results and splicing equipment is expensive and labour intensive. The processes are slow, while areas need to be clean and well lit.

Consumable costs and maintenance/calibration costs also need to be factored in. Other equipment which needs to be used to ensure the best quality termination, such as quality microscopes, are not available or used on-site. If they are used on-site, they are not as effective and can lead to testing failure and wasted products.

TESTING TIMES

Once the specialist team has completed the pre-termination work, it will also do the testing. Bear in mind that re-testing will be required once the installation is complete for warranty purposes, but there will be zero dead on arrival or faulty products. Providing there has been no damage during the installation, the failure rate will be zero.

In pre-terminated fibre, the fibre connectors are attached directly to the cable ends, so no splicing. The resulting product has better performance (lower loss) and is more robust and reliable in the long-term. Often, pre-termination specialist teams will be part of a company

‘It’s estimated that using pre-terminated fibre and copper can reduce installation time by as much as 75 per cent, and turnaround times by pre-termination providers is typically two to three days.’

that offers a warranty, which will provide peace of mind should anything not go to plan.

TICKING ALL THE BOXES

Every organisation I speak with is looking for new ways to save time and costs, and be more sustainable. Using a company to do the pre-termination work is another way to reduce your carbon footprint.

Firstly, it provides less packaging on-site to dispose of (often zero plastic if required), and can be delivered on cable drums that can be collected and reused. The delivered product will contain less packaging than the separate components, usually take up less space and, as a result, require less transportation.

Pre-termination will maximise cable usage by eliminating any damages and make the best use of ‘end of reel’ lengths, which would normally be scrapped, saving on resources. They will also have a defined recycling policy – especially if ISO 14001 certified – to ensure that all the waste packaging and other materials are segregated and recycled appropriately.

TIME IS MONEY

It’s estimated that using pre-terminated fibre and copper can reduce installation time by as much as 75 per cent, and turnaround times by pre-termination providers is typically 2-3 days. Data cabling is one of the last jobs to be carried out on a building project, so outsourcing this part can reduce a four week project into one week and also significantly reduce delays due to other trades and access issues that inevitably squeeze the dates even further towards the end of the timescale.

The assemblies can be delivered in

multiple drops to a pre-agreed schedule and labelled exactly as required to enable quick identification and routing to the allotted area on-site. Fully labelling the assemblies according to your schedule also saves significant time and hassle on-site – it's always the last thing to happen, and the time required if done on-site should not be underestimated.

HOLD TIGHT

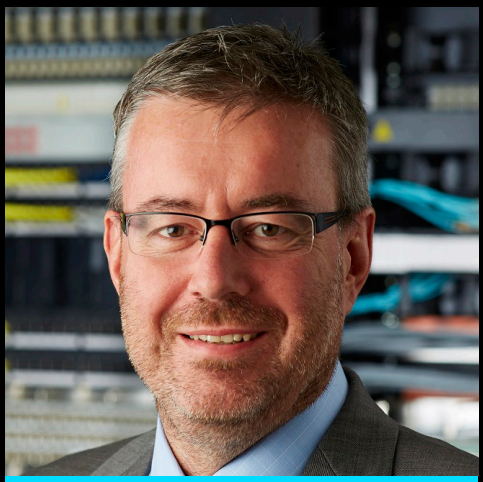
Though pre-termination brings many benefits, it won't be suitable for every project or installation. There are things you need to bear in mind when designing the copper and fibre installation if you decide to use pre-termination.

For example, if your project is in an old building, installing pre-terminated assemblies might pose an added challenge simply because there will be no defined cable routes or containment. However, a brand new data centre or somewhere with raised floors and suspended ceilings is perfect for pre-termination installation. For older buildings, which lack suitable routes and containment, consider a single ended option and half the work will still be done for you.

If you choose a pre-terminated solution, there are things you need to consider that will make installation on the day much easier. When designing, make allowances for a small amount of overlength, just to be sure. It's going to be easier and cheaper to lose some slack – such as above ceilings or below the floor – rather than find that the assemblies are too short and will have to be remade.

BENEFIT CHECK

Pre-termination offers the installer many benefits over traditional methods – quality, time saving, resource, performance, sustainability and cost. If you decide to use a pre-terminated solution, ensure you use a reputable company which is ISO 9001 and ISO 14001 registered, offers factory testing, fully traceable products and a complete warranty. ■



RICHARD CANN

Richard Cann is technical services manager at Mayflex. He joined the company in February 2015 to help strengthen the various technical support, manufacturing, assembly and value added elements of the business. Having graduated in mechanical engineering from the University of Leeds, Cann has worked for a number of manufacturers and installers in related industries, gaining experience in production and product engineering, design, manufacturing, engineering and operations management.

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Flying high

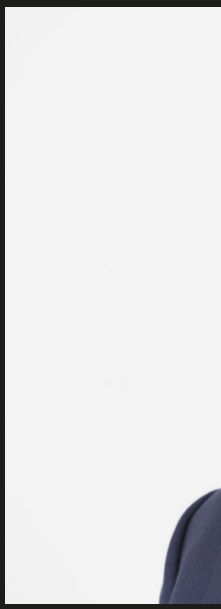
Since owning a Sinclair ZX81 in the 1980s, Darren Watkins has had a lifelong interest in computing. Rob Shepherd recently caught up with him to find out more about his life and career, and his thoughts on some of the big issues affecting the data centre sector

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

DW: I'm managing director of Virtus Data Centres. I've been with the company for over nine years, which is testament to how much I enjoy working in the industry and for the company.

My role interfaces with all aspects of the business because I am predominately responsible for the customer journey – from initial engagement to the solution design, contracting and the partnership beyond delivery. I am charged with driving customer satisfaction through service management.

I joined the data centre industry after a long period working for multiple companies in the optical fibre infrastructure world of telecoms. Before that, I served in the Royal Air Force (RAF) as a communications engineer.



'If data centres didn't exist there would be millions of individual computers distributed around end user offices and buildings, all running very inefficiently at much higher power consumption rates. Data centres allow compute power to be centralised, protected and run as efficiently as possible.'

RS: How and why did you decide to embark on a career in the data centre sector?

DW: Ever since I bought my first IT magazines back in 1980s when they were first published, I have been interested in computers. What fascinated me the most was (and still is) their ability to positively affect our lives – from helping to improve health and fitness to being able to keep up with friends and family.

At the age of 10, I owned and programmed a Sinclair ZX81 computer. Then at 16, I was one of the first to pass an O Level exam in computer science. In those days, in the absence of business problem solving applications, computer science was about Charles Babbage and the analytical machine. My interest in technology was firmly established, and I knew my career had to involve IT.

I went on to study an engineering degree, specialising in communications. I was curious as to how computers could

interact – WANs LANs, Ethernet, x25 and triplex became my second language. I followed my heart into the RAF as an engineer and was able to quickly focus on communications, working mainly on the launch and control of communications satellites for all three services – RAF,

Royal Navy and the Army. On leaving the military, the world of telecommunications opened up for an ex-RAF engineer with transferrable skills and I soon specialised in ultra-low latency fibre solutions to the secretive world of high frequency and quantitative trading.

Armed with a deep knowledge of dark fibre infrastructure companies and the clear parallels of that industry with data centre businesses, I knew I wanted to explore the new world of data centres. Three years after I joined Virtus, the first cloud operators started to deploy at huge scale in the UK. Fast forward to today, as the backbone to all things digital, the data centre industry is an exciting place to be.

RS: What excites you about the sector at present?

DW: What excites me the most is what is yet to come. There are many articles about the internet of things or the internet of everything. We are still a long way off from making full use of it but, combined with artificial intelligence (AI), we will start to see applications and uses that we cannot yet even imagine.

The sheer volume of internet connected devices that are constantly generating data is growing exponentially, and that data needs to be processed to allow interpretation and usefulness. The only place that this can happen is in a data centre.

RS: What differentiates a good data centre from a not so good one?

DW: As with many things, not all data centres are created equal. There are still some legacy data centres in use, left over from the pre-cloud days that were designed for a very different type of customer – mainly low power telecoms networking equipment.

Almost any expert in the industry can design and construct a great data centre – you can get all the necessary table stake accreditations and you can choose industry recognised equipment. However, the critical difference comes from how you operate the data centre.

What you do in the data centre, the procedures and controls for all aspects of the building, the scenario testing that you perform and the monitoring you undertake – these are just some of the aspects that are key and differentiate a great facility

from standard data centres, and can deliver competitive advantages. Only through experience and a laser focus on exceeding customer expectations can you build and operate a great data centre.

RS: How will investment in edge computing change the profile of the data centre over the next few years?

DW: Edge is relative to the application and the customers you are trying to serve. For a global cloud operator delivering a non-real time application, its edge could be London, New York and/or Hong Kong. To a gaming platform, trying to ensure a high quality, end user experience is constant means that their edge could be major cities within a country.

Edge data centres are key to this low latency type application. However, wholesale data centres provide edge data centres with the necessary content, dynamically deliver the load and process the data or store the source information that is required. Further investment in edge will drive greater demand in wholesale/core data centres as the need for latency sensitive applications increases. This is because the edge will increasingly rely on the power and scale that only these types of facilities can provide.

RS: Is the battle for the energy efficient data centre being won?

DW: Ensuring that the industry is sustainable has, for many years, been top of the agenda for data centre providers, as we always work hard to use power and water responsibly. Indeed, companies in the sector are committed to innovative sustainability and renewable strategies that include renewable sources of power, rainwater harvesting, zero water cooling systems, recycling, waste management and more.

Maximising efficiency not only has commercial benefits that can be passed on to customers, it also minimises environmental impact. For example, Virtus was the first UK provider to commit to using 100 per cent carbon zero energy – powering its sites solely with truly renewable energy from wind, solar and tidal sources since 2012. This saves around 45,000,000 tonnes of CO2 every year – enough to fill Wembley stadium five times over.

> 'Have you ever heard anyone say that they really want to work in the data centre industry? I can't understand why it isn't a well-known industry or sought-after career.'

RS: Do you think trade associations have an important role to play and are they doing enough to promote the sector?

DW: Yes, trade associations are very important, not least in helping to educate the industry and public. They have a role to play in explaining to governments and the general public how data centres are essential in our society and digital economy – everything from energy, lighting, telecommunications and the internet, to transport, financial systems public health and entertainment, rely on data centre infrastructure.

Currently, the data centre trade associations are taking a leading role in addressing the perceived concerns about blackouts, power and water usage.

Explaining how data centres use water, how much energy they really use and what the industry is doing collectively to enable digital transformation in a trusted, reliable, resilient and responsible way is very important.

All too often the benefits of the digital economy are overlooked by headline grabbing commentary. If data centres didn't exist there would be millions of individual computers distributed around end user offices and buildings, all running very inefficiently at much higher power consumption rates. Data centres allow compute power to be centralised, protected and run as efficiently as possible.

Trade associations, which understand the important role data centres play in a country's digital economy, are key to ensuring that the sector is promoted in the right way. Could they do more? They already do a great job, but with the collaborative effort of the entire industry I am confident we can collectively do more to ensure the public clearly understands the benefits of what the data centre industry provides.

RS: If you could change one thing about the industry that you work in, what would it be?

DW: I would encourage more young people from diverse backgrounds and more women to join the industry. We are the builders of the digital infrastructure and it is one of the fastest growing sectors.

Take the role of a data centre manager – it is challenging and rewarding, salaries are competitive, career prospects are appealing and no two days are the same. Sounds compelling, right? But have you ever heard anyone say that they really want to work in the data centre industry? I can't understand why it isn't a well-known industry or sought-after career.

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

DW: I have been given so much advice over the years, almost all of it useful at some point. If I were to boil it down to top three career tips:

- Always be curious and openminded to new ideas – be a lifelong learner.
- View every person you meet as a door that may lead you to a new opportunity.
- Ask questions – if you don't ask, you will never learn from others. ■

Centiel's Distributed Active Redunda industry leading availability and resil

Uninterruptible power supplies (UPS) provide clean, continuous power to critical environments such as hospitals and data centres when the main source is interrupted. They also ensure a high level of power quality, so installing a UPS system that offers the highest possible level of availability is of paramount importance

Centiel's CumulusPower true modular UPS system offers industry leading availability of 99.9999999 per cent (nine nines). So, how can Centiel achieve such high levels of availability? The answer lies in its Distributed Active Redundant Architecture (DARA).

More resilience

A distributed and decentralised architecture adds many more layers of resilience than other UPS architectures. The highest level of availability can be achieved because all of the components are replicated throughout the system at module level. A distributed architecture means each UPS module has a rectifier, inverter, static bypass and control logic. No single module takes control of the decisions for the whole system, instead, distributed decision making takes place to eliminate the logic's single point of failure.

DARA's distributed decision making technology is a real differentiator. It means there's no single component making decisions for the complete UPS system. Instead, the sum of the single modules' decision determines the total system action or reaction to any issues.

Decision time

At module level, if a fault occurs, that module can decide whether the load should remain on its inverter or be transferred to its static

nt Architecture offers ience

centiel
continuous power availability

bypass. However, this is not done in isolation, as the module instantaneously communicates with the remaining modules to allow them to work together to share the load. Communication is achieved by using a triple mode parallel BUS. This automated process ensures that the critical load is always protected.

Adding redundancy improves the reliability and availability of the UPS system. Redundancy can be achieved by simply increasing the number of UPS modules above the number that is required to support the load. This added redundancy enables preventative maintenance works to take place without putting the load at risk, enhancing availability and reducing downtime. In addition, CumulusPower's ability to exchange UPS modules safely in a live system (safe hot-swap) offers the lowest mean time to repair, while mitigating the risk of human error.

Tried and tested

CumulusPower's architecture ensures that any module being added to a system can be fully isolated and tested within a running frame before it accepts any load, giving it the ability to identify any potential faults before integrating with the rest of the system. In a system without safe hot-swap, any issue with a module going into a live system could result in the load being lost.

The overall concept of Centiel's true modular architecture is a completely decentralised and distributed one, where no common component can act as a potential single point of failure. Instead of one brain, there are multiple brains that work together to make the best decision for the whole.

Leader of the pack

Centiel's design team has been at the forefront of UPS innovation for decades. We are trusted advisors to some of the world's leading institutions. We have developed our 4th generation true modular UPS system, CumulusPower, with its DARA and combined it with low total cost of ownership and low losses of energy.

For more information **CLICK HERE.**
www.centiel.co.uk

Staying power

Marc Garner of Schneider Electric examines why resilience and efficiency are essential in the face of the energy crisis

During the last six months, media attention has focused greatly on large scale users of energy and the spiralling costs of power. Turmoil in Europe, for example, has caused wholesale gas prices to soar to eyewatering levels, with dire implications for the cost of electrical power generation, as well as both the people and businesses who are its consumers.

SUPPLY AND DEMAND

As power intensive users of electricity, it is almost inevitable that data centres would come under the spotlight at some point. The nationals in Ireland, for example, have focused on the energy demands of data centres, and the impact of multinationals leaving due to halting of new facility developments around Dublin. Here, greater collaboration among stakeholders, combined with technological innovation and integration with the grid, will ensure that the industry can be a catalyst for both net zero and abundant renewable power generation.

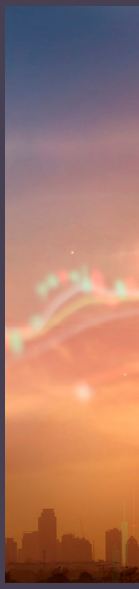
In the UK, national media coverage has also grown, with much of the focus on the projected impact of data centre power consumption on West London residential developments. Although mistakenly in this case, the sector has also been blamed for underinvestment and mismanagement within multiple other industries. One thing, however, is clear – the data centre industry has become critical to many of the ways in which we work and enjoy life. For those outside the sector, data centres have become the utility we didn't realise we all rely upon.

GOVERNMENT RESPONSE

In response to many of the broader social and economic issues surrounding wholesale gas price increases, governments are beginning to take action. The European Commission has announced a raft of measures including a proposal that member states should identify 3-4 hours each day in which electricity use peaks and reduce their consumption by five per cent at those times. This strategy is expected to help avoid the use of gas generated power, which kicks in during surges in demand causing spikes in pricing. In reality, much more remains to be done.

The UK government is also considering a range of measures. These include windfall taxes on energy companies to subsidise domestic energy bills, in an attempt to break the link between gas prices – which despite recent falls are still 12 times more than they were in 2021 – and the price of electricity.

For data centre operators the implications are potentially severe – operating costs could soar, the threat of power failures, outages and brownouts could make uptime more challenging, and commitments to sustainability could be pushed aside due to the necessity of maintaining mission critical services. In many respects, resilience will become the



primary focus for the industry, which has during the last decade made significant strides in terms of environmental sustainability.

EFFICIENT POWER PROTECTION

In the face of the energy crisis there are, however, many strategies and technologies that can help alleviate at least some of these problems. For data centre operators, uninterruptible power supplies (UPS) provide battery back-up for IT equipment and mission critical systems in the event of a power disruption.

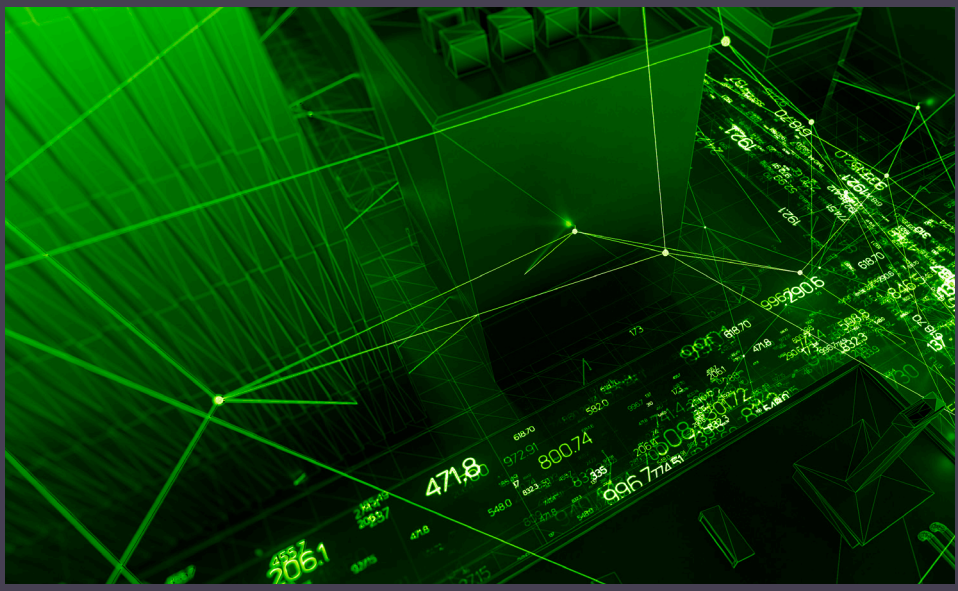
When required, a UPS will ensure operational reliability until such time as mains power is restored, or emergency generators brought online. In fact, as resilience becomes more of an issue, and given the anticipation of more regular power outages as supplies become unstable, the health, efficiency, reliability and the cost of a UPS will become of greater importance to operators.

POWER CONSIDERATIONS

Depending on the criticality of the load, UPSs can be deployed in such a way as to ensure greater uptime, but not without implications for cost – both in terms of capital expenditure (CapEx) and operating expense.

A 2N configuration, for example, in which every UPS has its own dedicated back-up unit, greatly increases resilience but at a higher financial cost, given the duplication of hardware needed and the energy required to keep the systems powered. Instead, operators may choose to right size the solution in a modular design or utilise an N+1 configuration, in which one system acts as the failover to another. This provides an increase in reliability for a much smaller cost premium.

To minimise wasted energy, many modern UPS systems can also provide users with the ability to utilise an advanced economy or eco-mode, which offers enhanced efficiency and lower operational costs, with minimal trade off in terms of



reliability. Another consideration might be to utilise a UPS that offers an ECOnversion mode, which provides an energy efficiency rating of up to 99 per cent, without any sacrifice in terms of load protection. This can become a key part of any back-up power strategy, considering the need to manage burgeoning energy costs and maintain mission critical reliability.

ACHIEVING COST SAVINGS

For operators looking to gain the perfect balance of lifecycle cost, resilience and energy efficiency, battery selection is also crucial. This is something that becomes even more important if business objectives are set around uptime or continuity, energy reduction or plans to maximise the system's life expectancy.

Schneider Electric studies have shown that lithium-ion UPS systems can deliver up to 2-3 times the life expectancy of traditional valve regulated lead acid (VRLA) powered UPSs, with enhanced efficiency and a 30-50 per cent saving in total cost of ownership (TCO). These are all paramount given the current macroeconomic environment.

Some the steps taken by governments in the UK, Ireland and Europe are also likely to involve new incentives to reduce power consumption at high demand times, so the practice of peak load shaving is likely to become more attractive to data centre operators. This technique uses the system's battery capacity to power critical IT loads so that high tariffs are minimised, or avoided altogether.

JOINING FORCES

Working in conjunction with sophisticated software platforms, such as a data centre infrastructure management (DCIM) software, operators can temporarily switch over to their energy storage or battery back-up capabilities. This is a strategy typically used when power consumption approaches the limit at which a low tariff energy contract is exhausted and higher charges begin to apply. For the peak hours

'To minimise wasted energy, many modern UPS systems can also provide users with the ability to utilise an advanced economy or eco-mode, which offers enhanced efficiency and lower operational costs, with minimal trade off in terms of reliability.'

pricing envisaged by regulators, utilising peak shaving capabilities will offer twice the benefit, improving resilience of critical systems by reducing network demand, and saving costs by expending the power consumed at lower tariff rates and stored in localised batteries.

The type of battery technologies utilised within a UPS will also have implications for peak shaving – for operators to benefit from these capabilities lithium-ion batteries are the obvious choice. Their smaller size, longer lifecycle and greater energy density provides the perfect vehicle for peak shaving compared to VRLA cells. For example, peak shaving requires batteries that can offer a greater number of charge and discharge cycles, which means lithium-ion technologies are best placed to support such capabilities.

LOOKING FORWARD

Current economic conditions are such that energy is expensive and likely to remain so. For colocation businesses, some of this cost may be passed on to customers but for others it can present a stark reality, and energy bills may reach up to four or five times those of the previous year. For many data centres, the ability to maintain resilience while ensuring their infrastructure is operating as efficiently as possible will ensure they can remain competitive in what is becoming a more energy conscious industry. Prioritising efficiency and reliability within their critical systems will leave operators better placed to tackle the ongoing challenges of surging energy costs, while minimising potential impacts to service continuity. ■

MARC GARNER

Marc Garner is vice president of Schneider Electric's Major Pursuits and Secure Power Division in the UK and Ireland. He is responsible for leading a team of expert power professionals to support customers in data centres, server rooms, edge computing and mission critical environments. Garner is a 15 year veteran of Schneider Electric and has worked in sales, marketing and leadership roles.

Salicru UK

If there are winter power cuts this year, is your business prepared? Salicru UPS solutions might be the answer.

BBC News has reported that British households could lose power for up to three hours at a time this winter if gas supplies run extremely low, following a National Grid warning. This will affect businesses across the UK, so are you prepared for this risk?

Carl McCammon, managing director at Salicru UK, said, 'Business continuity and power management must be at the forefront of operational decisions, and these plans need to be put in place by leaders right now. We need to prepare for the likelihood of inconsistent power supplied from the grid and protect against any adverse effects this might have on your business. It doesn't have to be totally disruptive to your business if effective solutions are implemented now.'

Salicru UK has a wide range of high quality commercial uninterruptible power supplies (UPS) to support critical equipment. Speak to the Salicru UK team today to discuss your power continuity plan.

CLICK HERE to find out more or to send an email **CLICK HERE.**

www.salicru.co.uk

Austin Hughes

The latest rack power distribution units (PDUs) from Austin Hughes are the MK series three phase metered PDUs with a highly advanced meter. A hot pluggable and field replaceable design allows meter/DC module replacement without PDU power interruption.

A 1.8-inch colour LCD provides local monitoring for circuit/phase amp, volt and kWh, and billing grade metering accuracy within +/- 1 per cent is achieved. It can prevent circuit overloads during equipment installation and enables capacity planning based on actual power consumption.

An extensive range of Austin Hughes' solutions is typically available from stock or on short lead times. Enterprise level intelligent, metered and basic rack mounted PDUs, in horizontal and vertical mounting versions, and multiple outlet configurations (including per PDU) are available with a choice of inlet plugs and cable lengths. The Austin Hughes InfraPower range also includes single phase rack PDUs, metered and intelligent automatic transfer switches (ATS) and in-line meters.

To find out more **CLICK HERE.**

www.austin-hughes.com

Schneider Electric

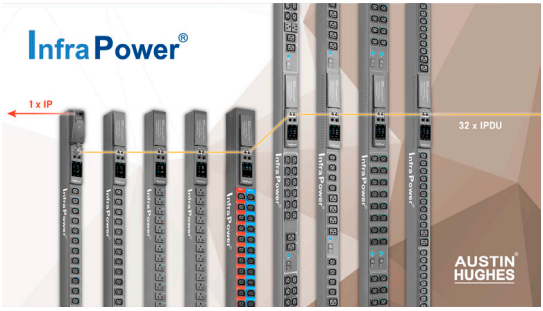
Schneider Electric has announced an enhanced version of eConversion, the company's generally recommended protection mode, to provide increased sustainability for its Galaxy V Series 3-phase uninterruptible power supply (UPS). After years of field tests, all Galaxy V Series UPSs will be shipped to customers with eConversion as the default.

With cost of ownership and sustainability as an ongoing pain point, Schneider Electric is the only company that offers this unique, patented combination of performance and efficiency. eConversion mode provides the highest protection level for critical loads with Class-1 (UL certified) and results in savings up to three times the UPS price.

Providing critical back-up power solutions for IT and non-IT environments, such as industrial edge applications, Galaxy V Series' eConversion delivers reliable power protection and helps attain new levels of sustainability. eConversion has over eight years of field deployment and thousands of customers worldwide who use it daily to protect their critical loads.

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

Austin Hughes



With any rackmount device or intelligent power distribution unit (iPDU), one of the biggest challenges is to integrate the device into the data centre environment without simply building up additional connectivity, cable run, patch panel or network related costs. The Austin Hughes InfraPower iPDU IP Dongle provides remote access to iPDUs by using a true network IP address chain.

Just one IP Dongle allows access to up to 32 iPDUs in a single daisy chain – a highly efficient application for saving IP remote accessories costs, plus the true IP addresses required on iPDU management. Hot pluggable design facilitates IP Dongle installation – with the IP Dongle integrated to the first iPDU, the entire daisy chain group can then be remote over IP enabled. It also features remote level and ID setting for cascaded iPDUs.

InfraPower offers three remote management options:

- Free management software IPM-04
- A web-based graphical user interface (GUI)
- Third-party data centre infrastructure management (DCIM) via SNMP or REST API

To find out more **CLICK HERE.**
www.austin-hughes.com

Mission impossible?

Aaron Oddy of Centiel explains why eliminating single points of failure should be a central focus of a power protection plan

The mission of an uninterruptible power supply (UPS) is to ensure clean and continuous power to a critical load. However, this mission becomes impossible if there are any single points of failure within an overall power protection plan. UPS systems and their associated battery banks rely on other elements such as preventative maintenance and environmental control to ensure they can perform when needed. Therefore, any power protection plan needs to offer a comprehensive approach to a power outage and each aspect needs to be carefully considered to eliminate any single points of failure. Let's look at some of these individually.

ENVIRONMENTAL CONTROL

Although not part of a UPS, environmental control is essential to ensure optimal performance of both the UPS and batteries. The UPS itself can perform comfortably in a temperature range of between 0°C and 40°C. However, in a room with failing air conditioning, temperatures could easily exceed 40°C, potentially compromising the system and certainly invalidating its warranty.

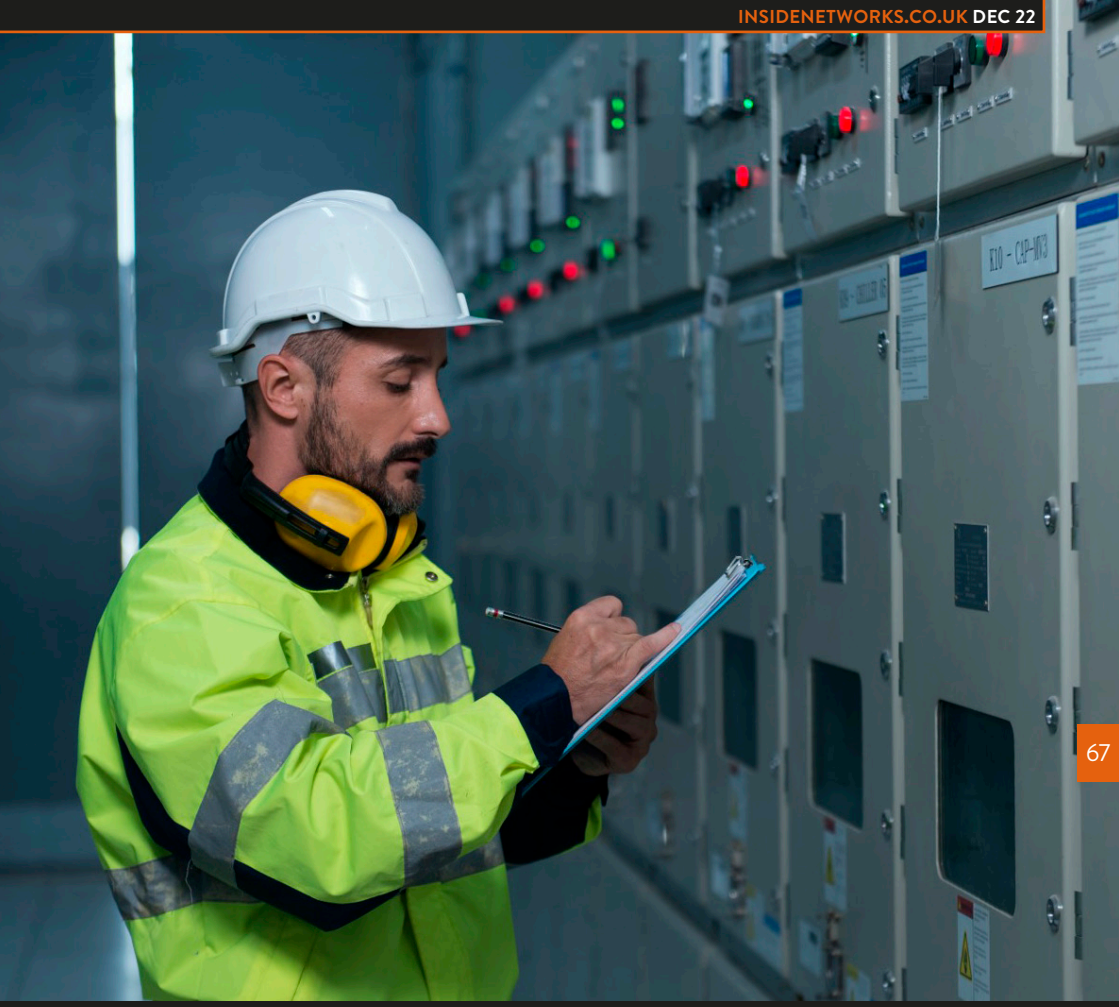
For valve regulated lead acid (VRLA) batteries, the optimal temperature range is much narrower. Strings need to be kept between 20-22°C to avoid degradation of their design life.

Continuous checks of the room temperature can be undertaken manually or monitored remotely with a battery analysis and care system (BACS). Operatives are alerted quickly if the temperature is outside of the UPS operating tolerance. Another option would be to introduce redundancy or duty standby to the air conditioning system. Just like having an N+1 or an A and B UPS system, the same configuration can be used for cooling.

STANDBY GENERATORS

The UPS will seamlessly bridge the gap between mains failure and the start-up of a standby generator. One potential area that could cause your plan to fail, however, could be that the generator won't start during the loss of mains power. This could be as simple as a flat battery or faulty connections. Preventative maintenance to avoid this issue is just as important for generators as it is for the UPS and other associated equipment.

During mains failure it would be best practice to remain on generator for long enough to recharge the batteries and ensure the grid has stabilised to avoid subsequent power cuts and unnecessary switching. The power protection plan should accommodate these types of worst case scenarios. Many organisations will identify areas of non-critical and critical



load protection requirements and plan accordingly.

PREVENTATIVE MAINTENANCE

I've touched briefly on the importance of maintaining equipment. For UPS, batteries and other associated equipment such as air conditioning, preventative maintenance is equally as important.

For any UPS system that protects a critical load, preventative maintenance visits (PMVs) must be carried out by a manufacturer trained and approved engineer. They will have the relevant expertise, access to technical support, firmware updates and spare parts. PMVs will see engineers complete a variety of visual checks to identify early warning signs to prevent any potential failures of important components. However, preventative maintenance needs to be site wide. Generally, organisations complete integrated system tests (IST) to identify any factors that could negatively affect the power protection plan. Everything must be checked and tested to ensure it will work when required.

TO ERR IS HUMAN

Human error can have the biggest impact on your UPS system and power protection plan. Introducing control measures can

‘Human error can have the biggest impact on your UPS system and power protection plan. Introducing control measures can help, and for those who need access to areas containing essential UPS equipment, training should be provided.’

help, and for those who need access to areas containing essential UPS equipment, training should be provided. We are talking about AC and DC voltage here – it’s hazardous to humans and a complete understanding of the system and associated risk is a must.

A common occurrence of human error is where an unqualified contractor attempts to maintain or repair a UPS system. This can create more problems than it solves, as not every UPS or installation is the same. Engineers need to be trained on that particular technology and have the correct firmware updates. If not, as well as compromising the integrity of the UPS, warranties will be invalidated.

MONITOR AND MANAGE

Remote monitoring can be beneficial for clients who want to monitor equipment but limit the number of visual checks outside of PMVs. Installing and connecting an SNMP network card is cost effective and it simply slots into the UPS. This should be connected to the network to

enable monitoring, alarms and any issues to be flagged. One of the most common human errors we come across is that the SNMP card is simply not connected to the network, so issues are missed. If correctly set up, it will provide real time

data from any location and alert you to any unexpected incidents.

We often train site operatives about how our UPS systems function, covering essential topics such as battery isolation or switching, for example, transferring the UPS to external bypass in an emergency. It also means they can respond appropriately to any alarms generated by the system with the assistance of our 24/7/365 technical support, or until our trained engineers get to site. Training of these key skills can help ensure the operatives' safety and that the correct procedures are followed to protect other equipment, mitigating the risk of human error further.

ACTION PLAN

For any power protection plan to work, all elements that may introduce single points of failure need to be considered and managed. Removing single points of failure to ensure the load is not put at risk during a power outage is vital in ensuring the UPS can complete its mission and protect the critical load. ■

AARON ODDY

Aaron Oddy joined Centiel UK as sales engineer in 2020, where he is now responsible for generating new hardware sales enquiries, plus on-site surveys and the management of key accounts. Prior to that he worked for Harland Simon UPS as an industrial sector manager for four years, providing key account management and sales support to clients delivering large scale industrial projects.

Secure IT Environments completes live air handling unit upgrade for Thurrock Community Hospital

Secure IT Environments has completed an air handling unit (AHU) upgrade project for Thurrock Community Hospital, part of Essex Partnership University NHS Trust (EPUT). The project was instigated as part of a move to more energy efficient units, as those already in-situ reach end of life.

Secure IT Environments undertook all aspects of the project, offering a full turnkey solution covering the supply, installation, commissioning and testing of the new units, as well as the disposal of all replaced equipment at the site. Run as a two phase project, two AHU units were replaced at a time, with an emphasis on ensuring that data centre services to Thurrock Community Hospital would be unaffected, with no downtime or impact on performance.

The old AHUs were replaced with much more efficient FlaktGroup Direct Expansion Multi-DENCO air cooled units, with low noise external condensers. Following the completion of this work, Secure IT Environments was also asked to upgrade all original data centre internal lighting with new LED energy efficient lights.

New Telehouse Paris data centre set to strengthen European network connectivity

Telehouse International Corporation of Europe has started construction work on a second data centre at its TH3 Paris Magny campus in France. The construction is in line with Telehouse's strategic plan to support European and national digital sovereignty by expanding its hosting and connectivity capabilities at its existing European sites, thereby helping to attract global internet traffic to European soil.

This new data centre will provide 12,000m² of IT floorspace and 18MW of electrical power. It will benefit from the highest levels of security and resilience and guaranteed uptime of 99.999 per cent. The data centre is scheduled to open its doors in October 2023.

Located just 30 minutes from the centre of Paris on a former EADS military site, the TH3 campus data centres will provide customers with a strategic location that can support their business growth. The new site will be located some distance away from the heavily concentrated data centre zone in the north-east of Paris, offering a well-positioned redundant geographic location, guaranteeing continuity of service for companies.

Stack Infrastructure to expand EMEA footprint into Frankfurt with 80MW hyperscale data centre campus

Stack Infrastructure plans to develop an 80MW data centre campus in Frankfurt. The new site will enable Stack to fulfil strategic client requirements and provide essential capacity in the city's constrained data centre market.

Stack acquired the 70,000m² site from Coca-Cola Europacific Partners Deutschland (CCEP DE), which operated a bottling and distribution plant at the location for more than 50 years. The company worked closely with CCEP DE to obtain the property, while also collaborating extensively with the Municipality of Liederbach to foster valuable local relationships and a shared vision for its advanced data centre campus.

Focused on energy efficiency and sustainability, the campus will accommodate four facilities. They will contribute to a circular economy through the deployment of innovative green technologies such as rainwater harvesting and the provision of excess heat to a proposed local residential development.

PROJECTS & CONTRACTS IN BRIEF

Axis Communications has supported NW Security Group in delivering a physical security solution to meet the evolving requirements of Whitehill & Bordon town as it undergoes a complete transformation into a sustainable, healthy and connected environment that is a safe place to work and live.

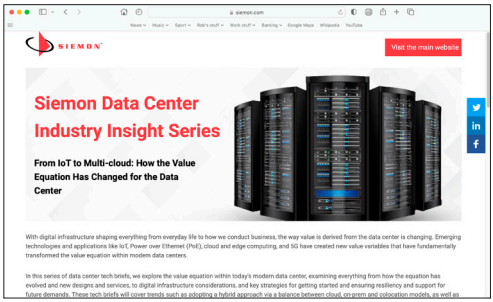
Nokia has deployed a 5G modular private wireless (MPW) network at the Saint-Quentin-en-Yvelines National Velodrome. An enhanced viewing and entertainment experience will be offered to fans, athletes, organisers and broadcasters.

Kao Data has appointed Gratte Brothers as principal contractor for the expansion of its KLON-06 data centre in Slough.

Lantronix's 24 port managed Gigabit Ethernet power over Ethernet++ (PoE++) switch (SM24TBT2DPA) was utilised in the intelligent internet of things (IoT) lighting solution at a large school district serving the greater Austin, Texas area. The installation was designed and installed by Bryte Light, a Lantronix value added reseller (VAR), with support from BryComm.

A study by Hatch estimates that over a 15 year period the positive impacts of CityFibre's £25m investment across Adur & Worthing will include £197m in productivity and innovation gains, £43m from a widened workforce and £178m in increased housing value.

Siemon



Siemon's Data Centre Industry Insight Series is a series of tech briefs designed to help data centre infrastructure professionals gain a better understanding of how the value derived from their data centre is changing in light of digital transformation, and newly emerging technologies and applications.

Siemon explores the value equation within today's data centre, examining new designs and services, digital infrastructure considerations, and key strategies for ensuring resiliency and support for future demands. The first Data Centre Industry Insight Series brief looks at how and why the data centre value equation has evolved and how some organisations are already applying new value principles to build better and more reliable digital ecosystems within the data centre.

The second focuses on new concepts in data centre design and services, as traditional data centres are transitioning to digital infrastructure to support trends including 5G, smart buildings, edge and cloud computing. The last part of the series takes a closer look at modern technologies such as low latency networking, automation and green technologies.

The Data Centre Industry Insight Series can be downloaded by **CLICKING HERE.**
www.siemon.com

Panduit

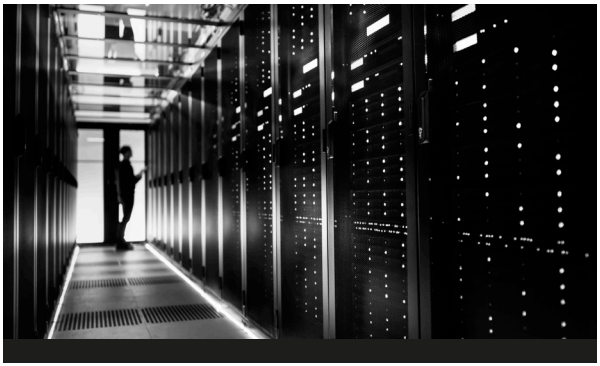
Panduit's OneMode is a 1U rack mounted device and offers a passive media converter that leverages legacy multimode optical fibre backbone 100Mb/s-1Gb/s and significantly increases bandwidth to 10Gb/s and 50Gb/s across already installed optical fibre infrastructure. OneMode extends data reach out to 800m and up to 5,000m using an extender OneMode device, and offers an inexpensive and quick to deploy solution to greatly upgrade campus networks.

OneMode shapes the laser light to become the dominant fundamental mode and the cable behaves as if it is singlemode fibre. This eliminates modal and chromatic dispersion, providing the capability for 100x data speeds and extended cable runs. Panduit has demonstrated the capability of 100Gb/s up to 500m on multimode fibre, with zero signal degradation.

OneMode offers multiple benefits to markets such as education, healthcare, enterprise, industrial and other campus based markets due to the capability to use installed cabling rather than rip and replace old cable with new fibre infrastructure.

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

AFL Hyperscale



AFL Hyperscale, part of the Fujikura family, are experts in manufacturing and supplying critical components for optical fibre infrastructures, specialising in cabling and connectivity for data centres.

We work collaboratively with our customers to create connectivity solutions tailored to their current needs and to the requirements of future networks, ensuring they can seamlessly grow their network when needed. We utilise our responsive, global operational capabilities and distribution network for competitive leads times and fast delivery.

Our innovative range of solutions support high network speeds, maximise fibre density and floorspace, and drastically reduce installation times.

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

HellermannTyton

HellermannTyton is continuing to reshape its LAN product range. Throughout 2022, the UK manufacturer has launched a new Category 6A solution with a whole host of exciting new products.

The new Category 6A solution includes the new Cat6A Jack, patch panels, cable and patch leads. The new Cat6A Jack is designed to be toolless and does not require any specialist termination tools. The Cat6A panels come in both flat and flat angled versions.

The new field termination plugs are used to create modular plug terminated links (MPTL) on-site for direct connection to fixed location devices. Similar to the Cat6A HTC jack, the MTPL is a toolless product, providing engineers with a quick, flexible on-site solution. HellermannTyton will also be introducing a new range of Category 6 panels and outlets, along with a selection of LC and Euro modules, faceplates and backboxes.

All of the new products from HellermannTyton will be supplied in plastic free packaging where possible, so the company can do its bit for the environment and planet.

To find out more **CLICK HERE.**
www.htdata.co.uk

R&M

R&M's Single Pair Ethernet (SPE) product line is commercially available with immediate effect. The range includes connectors, sockets, patch cords and installation cables that are compliant with the IEC 63171-1 standard. SPE connection technology is recommended for building cabling by various standardisation bodies including IEEE, ISO/IEC and TIA.

SPE expands the concept of structured cabling systems and helps to prevent bottlenecks at critical points. It enables a higher connection density in devices, distributors and outlets, takes up only a small amount of space in cable ducts and reduces potential fire load. SPE is a key technology for Ethernet/IP aided digitalisation in building automation, supporting bandwidths of up to 1,000Mb/s at distances of up to 40m, and transmission distances of up to 1,000m for 10Mb/s.

R&M is also the first manufacturer to release an SPE socket for printed circuit boards (PCBs) in accordance with IEC 63171-1.

CLICK HERE to find out more.
www.rdm.com

Urban landscape

Antonio Bocigas of Lenovo looks at how tomorrow's cities are creating a smarter future

The concept of the smart city is relatively new and synonymous with modern technology, however, urban spaces have been investing in technology for thousands of years. Ancient Rome is a prime example of a complex interconnected system of technologies – from its transportation network through to its distribution of energy sources. People's lives were transformed in those days with aqueducts and water drainage systems, and even the paved roads that made transportation possible.

PROGRESS REPORT

We are now well into the digital age, seeing innovations such as driverless cars, intelligent traffic systems and delivery bots incorporated into our daily lives. Whilst the technological advancement of smart cities continues to progress rapidly, we need to bear in mind that Rome was not built in a day. For modern day smart cities to be most effective, a high bandwidth, low latency network capable of handling vast amounts of data is vital. And whilst reliable and affordable 5G is rolling out across cities, network connectivity is still lacking in some areas.

The answer? Edge computing – a distributed computing paradigm that brings computer and data storage closer to the sources of data. Edge technology allows faster decisions to be made, and data to be processed in real time within the device itself, as opposed to needing to send

'For modern day smart cities to be most effective, a high bandwidth, low latency network capable of handling vast amounts of data is vital.'

information to a faraway data centre for processing. Response times are therefore quicker – a key factor when it comes to managing the high bandwidth technologies that are essential for smart cities and ensuring that they are a success.

An edge computing network also tends to be more reliable and cost efficient – a win-win for local governments. This is because, with on device decision making via artificial intelligence (AI), data does not have to be stored on a cloud network as only important data is processed.

LEADING THE WAY

Barcelona is implementing smart, data driven technology with the aim of improving the lives of its citizens. In 2015 the city started a process of network transformation through a series of pilot schemes and work is continuing today.

On top of developing a 5G network and private infrastructure, Barcelona is working with partners such as Lenovo to explore other use cases for building a future with smarter technology – self-driving 5G buses, for example. If this sounds like a pipe dream, think again, because the project is already underway. In collaboration with Fira de Barcelona – the city's fairtrade institution – it aims to provide sustainable mobility solutions in large, enclosed spaces.

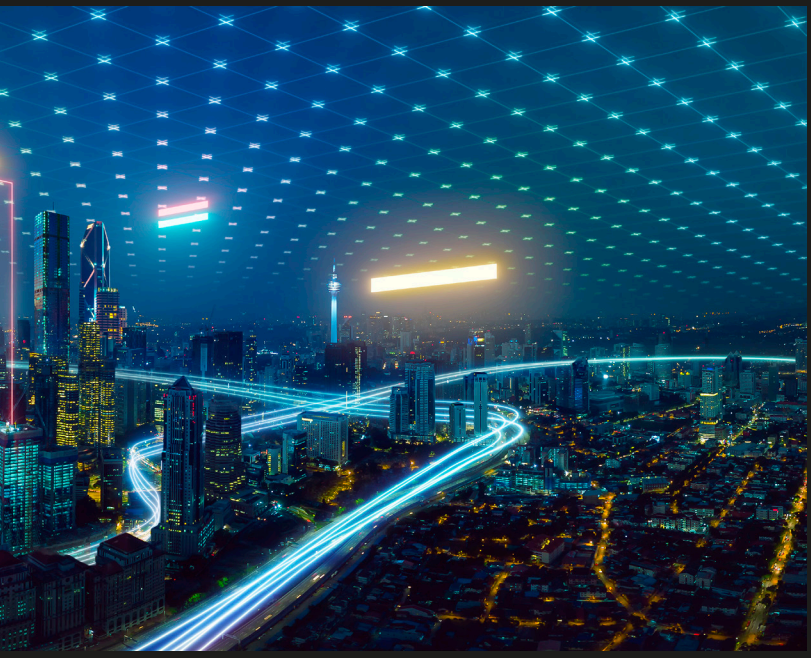
The project is supported with the infrastructure for the overall deployment of a private 5G standalone network. Beyond transport, it will also be deployed to help law enforcement in the city. By using a video feed that can be analysed in real time using AI, police will be able to detect crimes and protect the public. Put simply, technology is ultimately able to provide substantially more resources to the emergency services, meaning they can react faster when the need arises.

DOWN ON THE STREET

Having already built more than 3,000 street cabinets to hold key tech

infrastructure, Barcelona has an incredible opportunity to continue its path to digital transformation. As such, the city has set out ambitious plans that will set the tone when it comes to efficiency, transparency and social innovation. And while we can look to Barcelona as an example, it is important to remember that one size does not fit all. As a coastal city and popular tourist destination, its challenges are different to those in the rest of the world.

All cities will have different needs and challenges as they strive to become smarter. To maximise the benefits, these must be accounted for from the beginning. Barcelona, for example, is a popular beachside holiday destination, so network capacity management in crowded environments such as the beach is extremely important. In its latest pilot, Barcelona aims to adapt its 5G strategy in order to ensure its network capabilities are flexible, while also extending connectivity services to shaded areas where network resource needs are highly seasonal, such as beaches.



A SMART APPROACH

Mexico, however, has a very different challenge, posed by widespread water shortages. These shortages have worsened amid extreme temperatures due to climate change, so that is where the authorities have focused their efforts. Indeed, Mexico is already leading the way when it comes to smart cities in Latin America, with four cities – each with unique challenges – considered intelligent cities by the Inter-American Development Bank (IDB).

By taking a smart approach to infrastructure, the country will be able to use technology to effectively monitor water levels and consumption, and in the process ensure the infrastructure is in place to overcome water shortages. This is the modern day equivalent to what the Romans achieved.

NEED TO KNOW

Despite each city having different needs, there is a specific set of characteristics that help to identify and measure its level of smartness. Smart cities are based on the idea that people can live and work in

the most efficient way while making the most of their resources. For example, by collecting data on energy usage both from a personal level and within building control systems, consumption can be reduced. Combining that with managing traffic and keeping a close eye on air quality can help cities – and entire countries – hit emissions targets.

In addition, by looking at live data, measures can be taken to reduce harmful levels of air pollution, such as issuing restrictions on traffic in certain areas. Congestion can then be combated by monitoring live video streams and signalling controls to ensure cities keep moving.

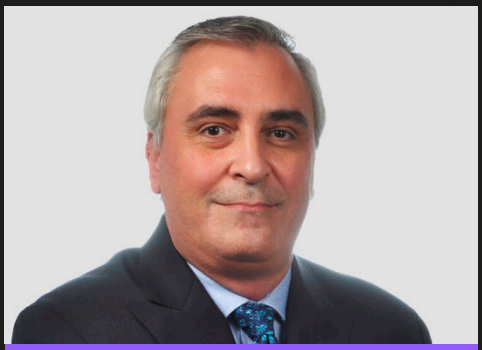
TOMORROW'S WORLD

There will always be challenges in creating a smart future for our cities. Physical security becomes increasingly important when servers are found on highways or streets. Smart cities will therefore need to be protected under established fundamentals to ensure a smooth running process, as well as a well-planned strategy for future success.

With over 3,000 street cabinets constructed in Barcelona, we are seeing higher quantities needed for bigger cities to meet the greater demand for infrastructure and coverage – this is where edge computing can help. Without needing a central cloud control system, each sensor can survive a network outrage or inconsistent coverage.

TO THE MAX

The ultimate goal of local governments is to maximise smart cities' productivity and efficiency with the lowest possible expenditure. To achieve this, it is vital that local governments have a clear vision before moving towards being smart, and understanding the unique infrastructure and community needs of each city will require a long-term effort. Edge computing will play an essential role in underpinning urban spaces in consideration of their distinctiveness. Now and in the foreseeable future, tomorrow's smart cities will make citizens' lives easier. ■



ANTONIO BOCIGAS

Antonio Bocigas is telco director for Lenovo EMEA, a position he has held since 2019. He is responsible for business and technical sales strategy development, channel and field enablement and technical level relationship with many of the telcos across the region. With over 25 years of experience in the IT industry, Bocigas has served in a number of international business development and technical roles.

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