Inside_Networks

THE NETWORK INFRASTRUCTURE E-M

Sharp fo

HAS THE CORONAVIRUS PANDEMIC RAISED THE DATA CENTRE SECTOR'S PROFILE?

On the crest of a wave

THE FUTURE OF INDOOR WIRELESS CONNECTIVITY

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MAY
21

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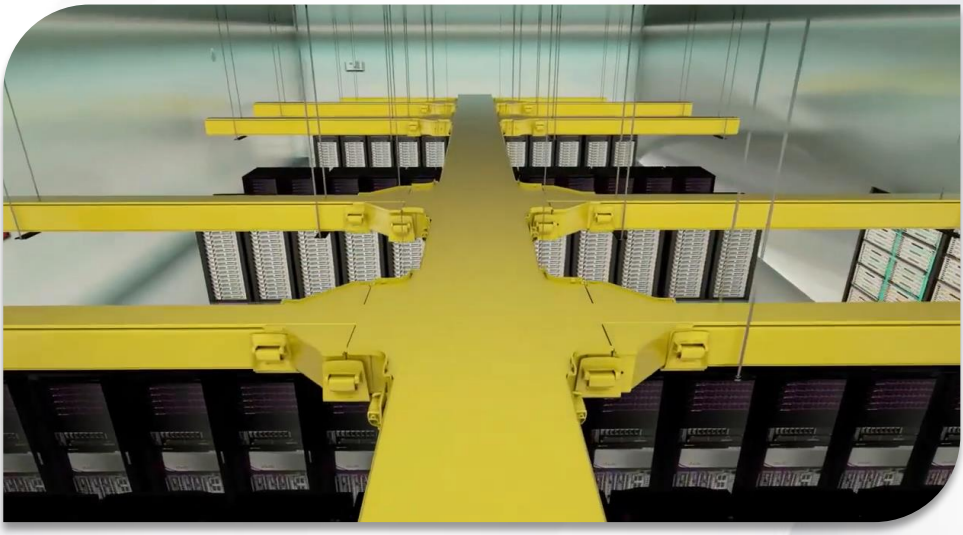
False economy

WHY VALUE ENGINEERING MUST BE AVOIDED WHEN SELECTING A UPS

SIEMON INNOVATION

True Innovation in Data Centre Fibre Routing



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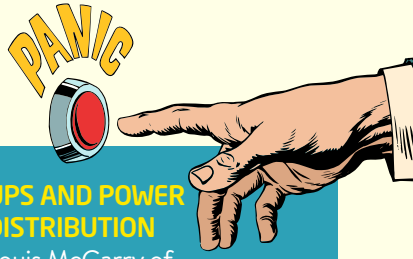

Network Cable Installer
Apprenticeship in a Box

Duration
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Funding
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Delivery Method
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Block Release

Content
Timetable is available

The First Government Funded Apprenticeship for Network Cable Installation Established in England and Wales

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- Eligibility for ECS Apprentice card
- Fluke CCTT® Certification

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or

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EDITOR
Rob Shepherd
07708 972170

SUB-EDITOR
Chris Marsland

ADVERTISING MANAGER
Kate Paxton
01603 610265

CREATIVE DIRECTOR
Vishnu Joory

TECHNOLOGY CONSULTANT
James Abrahams

CIRCULATION MANAGER
Debbie King

ACCOUNTS
Billy Gallop

CHALK HILL MEDIA

Since the beginning of what we now know as the data centre sector, the general public has shown a level of disinterest in it. On the one hand, given how reliant we have all become on the internet, this might seem strange. On the other, why should people care? They might like driving cars but they don't necessarily want to know how engines work – they simply want to press the ignition and go.

However, since the coronavirus pandemic data centres have enabled us to work, shop, socialise and be entertained. Just imagine if it had struck 25 years ago – I think it's fair to say that things would have been very different. Governments certainly acknowledge this, which is why data centres are now considered critical national infrastructure.

So what could be the positive and negative impacts of the data centre sector being in the spotlight? To look at this in more depth, in this month's Question Time we've asked a panel of experts to offer their opinions on the subject.

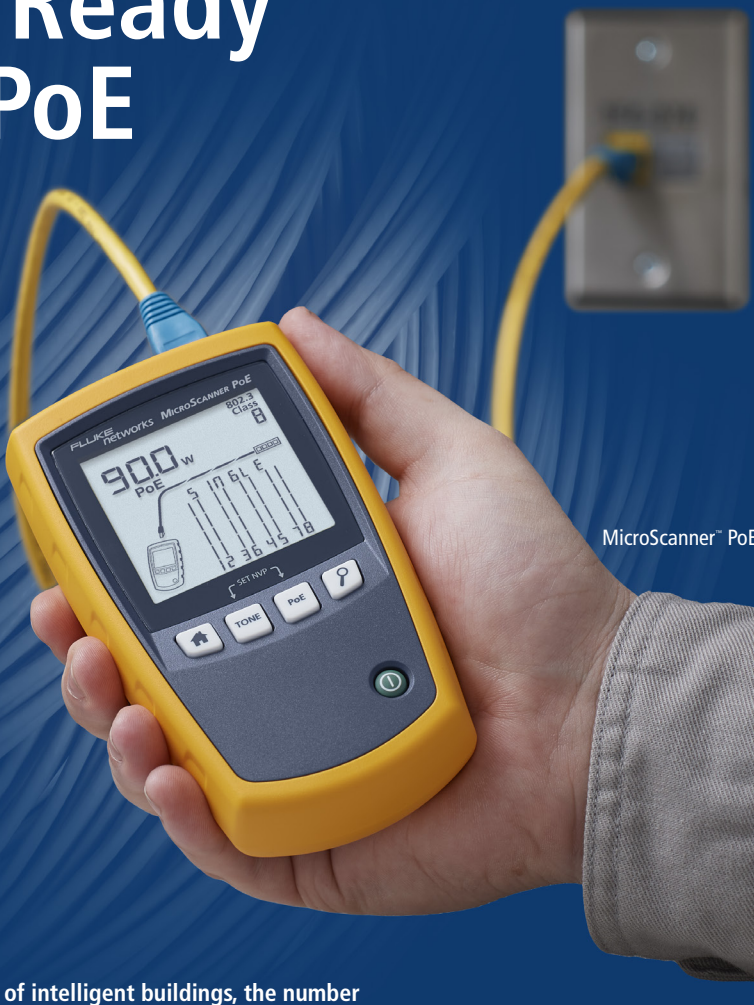
Also in this issue we have a feature on UPS and power distribution. Louis McGarry of Centiel UK explains why, when it comes to UPS, value engineering can prove to be a false economy, while Jon Barker of CPI explains why intelligent power management is a hero in today's data economy. They are joined in our second feature on wireless networking by Stuart Holyoak of CommScope, who looks at the future of indoor wireless connectivity, and Dahwood Ahmed of Extreme Networks, who explains how to unlock a business' potential with network data analytics.

Due to the ongoing lockdown restrictions, we have had to reschedule the Inside_Networks 2021 Charity Golf Day to 30th June. As one of the highlights of the network infrastructure calendar, myself and the rest of the team are looking forward to a hotly contested but good humoured day, which also offers a chance to catch up with familiar faces and network.

I hope you enjoy this issue of Inside_Networks. Don't forget, 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

Get Ready for PoE



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A third of women in tech say gender roles have regressed 10-20 years

Gender roles have been set back significantly since the coronavirus pandemic began according to 57 per cent of respondents to a new survey of 177 women UK technology industry leaders by accelerateHER. 34 per cent of those surveyed believe women's roles have regressed 10-20 years, as they shoulder a triple burden of home-schooling, work and an increase in household tasks.


Laura Stebbing

Women in the technology sector reported that their career paths have been negatively affected by the pandemic with 54 per cent of respondents claiming it has made it more difficult for them to break into the industry. This compares to 32 per cent who believed it has made it harder for men to break into the sector. Launching a new business is now more challenging than ever too, with 53 per cent stating the current climate has made it more difficult.

Laura Stebbing, co-CEO of accelerateHER, said, 'The coronavirus pandemic threatens to reverse the important gains that have been made for women's equality. For too long it's been down to women to change the system, but men are more likely to be in positions of power to drive change.'

US data centre markets set to remain strong in 2021

The US data centre sector remained strong in 2020 as businesses reconfigured their digital infrastructure to improve their remote working capabilities, and tech giants and cloud service providers raced to meet consumer and corporate demand.


Pat Lynch

CBRE's latest North American Data Center Trends Report shows 329.6MW of net absorption in 2020 across the seven primary US data centre markets. While down 11 per cent from the peak in 2019, 2020 absorption was still higher than any other year on record. Meanwhile, vacancy fell to just 8.5 per cent, despite an 11 per cent growth in new supply.

'We expect data centre demand to increase across both primary and secondary markets in 2021,' said Pat Lynch, senior managing director at CBRE Data Center Solutions. 'To capitalise on this growth, providers will look to deliver network and interconnection offerings to better connect business critical applications, as well as to meet anticipated demand for evolving technologies.'

Keysource commits to planting a tree for every order received


Jon Healy

Keysource has partnered with Tree-Nation and committed to planting a tree for every order it receives in a move designed to offset CO2 emissions on behalf of the company and its clients. Clients will have the opportunity to plant a tree and receive a certificate detailing the plantation project, species of tree and lifetime CO2 offset.

Tree-Nation's mission is to reforest the world by planting trees, one of the most efficient solutions to fight climate change. This helps not only to restore forests but also create jobs, support local communities and protect biodiversity. Since its inception in 2006 more than six million trees have been planted using its platform. Keysource has chosen to initially support the Eden Projects in Nepal and will consider other projects throughout the year.

Jon Healy, operations director at Keysource, said, 'All eyes are on the corporate green agenda and it is imperative that businesses take the opportunity to reduce their carbon footprints, among other planet saving efforts. This is not just good business sense, it is also morally the right thing to do.'

John Higgins announced as new president of BCS, The Chartered Institute for IT


John Higgins

John Higgins has urged government and business to 'put IT to work to drive this recovery' after being announced as new president of BCS, The Chartered Institute for IT. Mayank Prakash was also named deputy president of the industry's professional body at its recent annual general meeting.

Higgins stated, 'Our members are the digital professionals ready to put IT to work to drive this recovery, and importantly, in ways that society can trust. I will be particularly focused on three important themes to support the overall goal. Firstly, to double down on efforts to make our profession more welcoming for all, secondly, to lead BCS to put its full weight behind efforts to help the nine million people unable to reap the benefits of digital. Finally, we need to step up our efforts to encourage digital professionals to use their talents to help tackle the problems of climate and ecological change.'

UK joins European network to advance high performance computing

Two leading supercomputing facilities in the UK have combined to create a national computing competence centre as part of a Europe-wide network.

The UK centre will be led jointly by the Science and Technology Facilities Council (STFC) Hartree Centre and EPCC, the supercomputing centre at the University of Edinburgh.

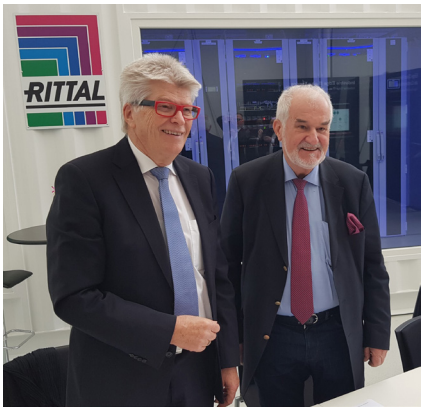
The collaborative programme is set to elevate supercomputing and artificial intelligence (AI) research and innovation quality across Europe, and enhance its accessibility and availability for industry, academia and the public sector. Known as EuroCC@UK, the UK centre will form part of a new network of over 30 national competence centres across Europe, funded by the European Commission.

Alison Kennedy, director of the Hartree Centre, said, 'The national competence centre allows the UK to contribute to, and to learn from, international best practice in supporting the wider uptake of high performance computing, high performance data analytics and AI by industry and academia.'

Rittal and Stulz form global partnership

Rittal and Stulz have entered into a global partnership. Rittal's IT infrastructure portfolio will now be combined with liquid based closed circuit chillers, free cooling products, side chillers and indoor chillers from Stulz, with the joint offering also extending to global support and other services for the entire IT infrastructure lifecycle.

Demand for one stop data centre solutions is growing. The IT industry is evolving fast and companies must upgrade and expand their IT infrastructure at an ever-increasing pace. They need solutions that can be implemented quickly, that comply with high international standards of quality and security, and that can be tailored to their specific requirements.



L-R Friedhelm Loh of Rittal and Jürgen Stulz of Stulz

'Rittal and Stulz are both family run companies, with a commitment to innovation and customer centricity,' stated Friedhelm Loh, CEO of Friedhelm Loh Group, which owns Rittal. 'Together, we can offer our customers an even larger portfolio of flexible, end to end data centre solutions.'

Nutanix study shows global public sector cloud strategies validated by coronavirus pandemic response

Nutanix has published the findings of its third annual Enterprise Cloud Index Report. Its findings point to a concentrated modernisation effort throughout the global public sector over the past few months, with 70 per cent of respondents saying the coronavirus pandemic has caused IT to be viewed more strategically in their organisations.

48 per cent of respondents said their organisations had no employees working remotely one year ago. However, since the onset of the pandemic, the sector has scaled its number of remote workers, with only 15 per cent and 11 per cent of respondents reporting employing zero remote workers today. In order to effectively support this growing remote workforce, organisations have begun strategically evaluating their cloud models – with 82 per cent identifying hybrid cloud as the ideal IT operating model for their organisations.

'IT is now being viewed more strategically within public sector organisations,' said Andrew Puddephatt, director UK public sector at Nutanix. 'The pandemic certainly accelerated this push for modernisation, as public sector organisations looked to maintain seamless operations and not fall foul of regulatory requirements by harnessing hybrid cloud models.'

NEWS IN BRIEF

The Open Compute Project (OCP) has formed the OCP Future Technologies Initiative – a project to build a community within OCP to serve as forward looking funnel for ideas and technologies. Zaid Kahn of Microsoft will also now hold a seat on the OCP's board of directors.

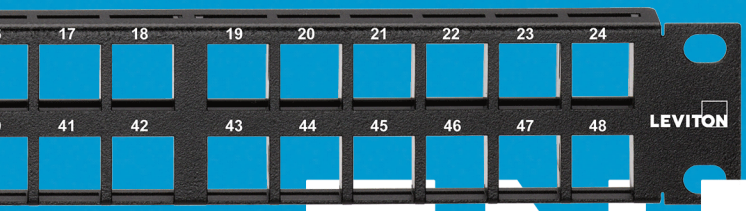
The Continental Automated Building Association (CABA) has appointed Terrence DeFranco as the new chair of the Intelligent Buildings Council and Pete Horton to the CABA board of directors.

Equinix intends to open its first data centre in Bordeaux, France, in Q3 2021. With direct fibre links to Equinix's International Business Exchange (IBX) sites in Paris, this new facility – named BX1 – will provide global businesses and local authorities with the ability to connect directly and securely to the world's digital economy.

EcoAct, in partnership with Interxion, Schneider Electric and Calanques National Park, have launched the Prométhée-Med research project to establish the first methodology for the certification of seagrass conservation and preservation measures.

Kao Data has signed a three-year funding agreement with Cambridge Science Centre and will become a member of its executive council.

LEVITON



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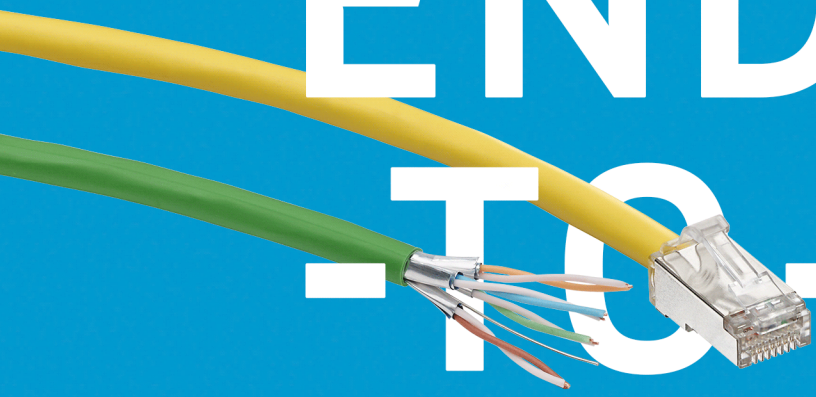

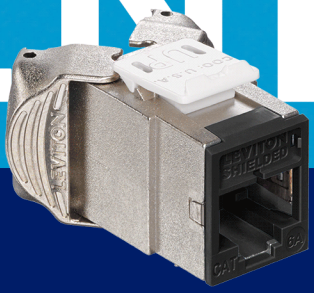

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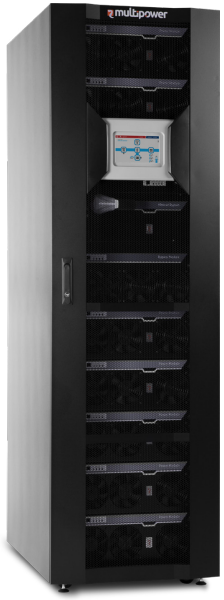

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Maintenance

Maintaining your UPS is a fundamental part of power infrastructure management. Secure Power can provide a maintenance plan tailored for each requirement. A major advantage for our clients is our ability to maintain and support multiple types of UPS solutions, meaning multi-vendor support on covering contracts.

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The building blocks

Hi Rob

There is a reoccurring discussion about which types of networks are better suited for aiding mass sensor and internet of things (IoT) deployments, and how businesses can calculate which network will provide the greatest results. There are a number of elements that must be considered ahead of an IoT production rollout, such as which of the various IoT networks and protocols to use, longevity of the solution and how a blended connectivity approach is an inherently flexible, cost effective and scalable strategy to reap the benefits of mass scale IoT.

IoT sensor technology has progressively advanced in proficiency and the potential for scale, in turn, generating a demand for new wireless network protocols to support sensor types. More recently, we've observed the rapid evolution of low power wide area network (LPWAN). The early entrants to this market – LoRaWAN and Sigfox – are recognised as international network and protocol standards for IoT by building trust with users who are now assured in the reliability of these networks.

LoRaWAN can provide an effective protocol for temperature monitoring and refrigeration, such as with the rollout of the coronavirus vaccine. Despite initial predictions claiming that the cellular IoT network variants, such as NB-IoT and LTE-M, would dominate the IoT connectivity market, there has been a lack of intensity in UK rollout of the cellular IoT network programmes. This means that IoT cellular LPWAN work has been largely limited to testing, while production rollouts are dominated by private council LoRaWAN installations and innovation programmes on public network variants of both LoRaWAN and Sigfox.

When deciding which network protocol to use, one of the primary concerns is the cost of delivery for data. LoRaWAN, Sigfox

# of IoT success

and cellular protocols, for example, have now reached a level of maturity where the devices are cost effective, compared to NB-IoT and LTE-M, where users are still paying for data usage on the network by the byte.

There remain many pros and cons for each network, so identifying and understanding the nature of the deployment is vital. LoRaWan, for example, raises concerns around the potential loss of messages due to multiple devices sharing the LoRaWan spectrum. This protocol can be adapted further to mitigate this risk occurring by spreading messages across multiple channels and monitoring message counters. Organisations must specifically look at their own individual scenarios, while considering the network. If a use case requires guaranteed delivery of traffic within a restricted time period, NB-IoT and LTE-M may be required.

Organisations must steer away from a one size fits all connectivity approach, instead deploying a blended strategy for network connectivity. There is no single protocol that is developed for each individual use case, or that can cover a whole estate. But by deploying a hybrid model which blends various connectivity protocols, organisations can achieve total estate coverage in a streamlined way. This method is perfect for those looking to gain the advantages of mass-scale IoT, but are uncertain of where to start.

Nick Sacke
Comms365

Editor's comment

Although the rollout of the IoT continues apace, it is clear that some organisations remain hesitant when it comes to choosing which networks and protocols to use. Given this, Nick's final point about the use of a hybrid model could be the answer.

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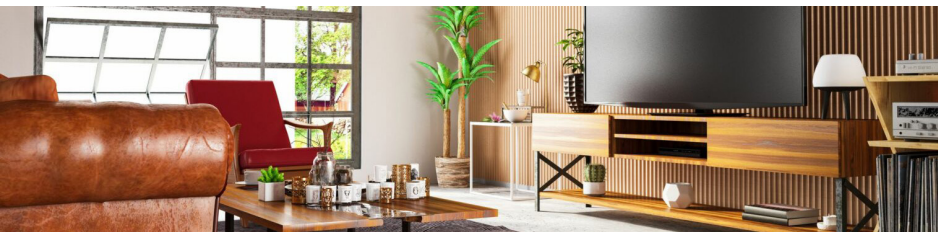

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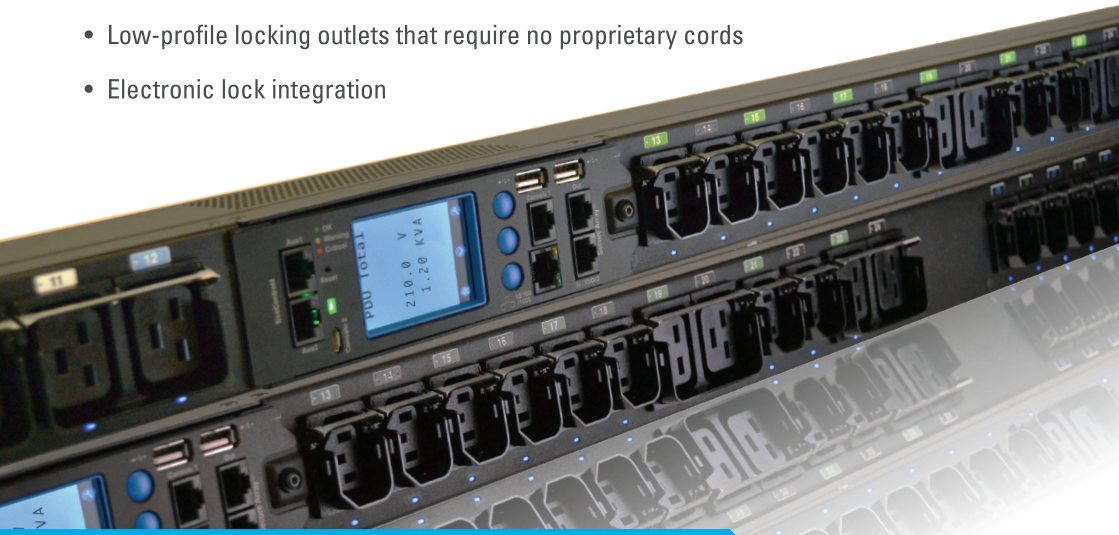

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Front and centre

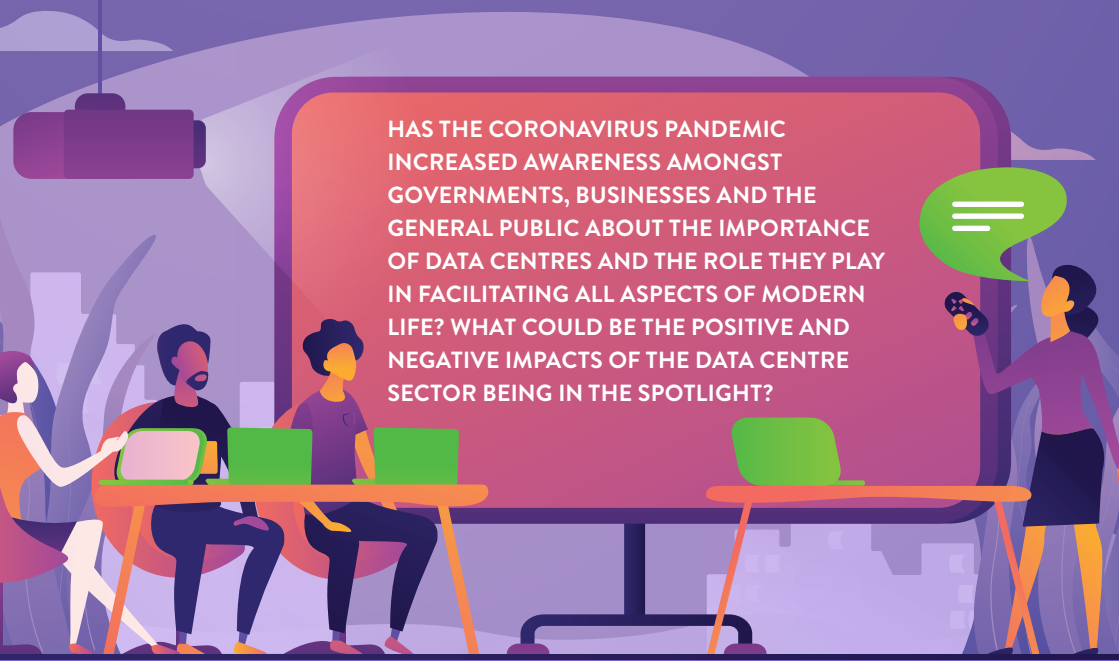
Since the coronavirus pandemic, most of the general population has become reliant on data centres for all aspects of their working and personal lives. Inside_Networks has assembled a panel of industry experts to examine whether this has led to a better understanding of the data centre sector and what the impact of this higher profile could be

Pre-pandemic, if you were to ask any 'non-industry' person to describe a data centre you might well get a blank look in return. In fact, amongst the general population there was very little knowledge about what a data centre is and what it does.

The data centre sector has traditionally operated 'below the radar', which has allowed it to develop relatively unhindered. Similarly, it has avoided the type of regulation that has affected all the other major utilities. However, over the past year or so we have all become reliant upon these facilities for work, education, entertainment, socialising, shopping and pretty much all aspects of life. In light of this, governments around the world have started to take notice and many have designated data centres as critical national infrastructure.

Inside_Networks has assembled a panel of experts to assess if the coronavirus pandemic has been a 'game-changer' in terms of how data centres are perceived, whether there is now a better appreciation of these vital facilities and what the impact of this heightened level of awareness could be.

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



NANCY NOVAK

CHIEF INNOVATION OFFICER AT COMPASS DATACENTERS

I recently watched a documentary about the 1918 flu pandemic, which discussed how it dramatically accelerated not only the pace of technological change but also the size of socioeconomic inequities. I believe both of those are happening again during the coronavirus pandemic.

Coronavirus has accelerated technology in the digital world in order to accommodate the ways we are working, learning, communicating, seeking human connection, fighting boredom and dealing with stress. Data centres are at the heart of that. The pandemic has created an awareness of IT infrastructure that is broader than ever before because it impacts so many things throughout our day – our Zoom calls, our kids' online classes, the Netflix show we are watching, our doom-scrolling through the latest headlines, and so much more.

Even just a year ago, I would have to explain what data centres and IT infrastructure were to people who heard what I did for a living. That is much different today. So many more people not only understand the importance of things like data centres, data networks and wireless networks, they also intuitively understand the connection between that infrastructure and the activities they do each day.

They can see the connection between having access to robust digital infrastructure and ensuring that their child has a good online classroom experience. That is very positive thing for our industry because it means that there will be more support to build out this infrastructure.

But, just like in 1918, the technological advancements during this current pandemic have also dramatically intensified inequities. The digital divide was already an enormous issue before coronavirus and the pandemic has made it much, much worse. Families without access to the right technology and connectivity have struggled with online school and virtual work. They also have far less access to the kinds of resources the rest of us have to financially, socially and emotionally weather the pandemic.

A century ago, the flu pandemic intensified and cemented inequities that had negative ripple effects for decades afterwards. We can't afford to repeat those mistakes. It is more important than ever that the technology industry joins forces with government entities, businesses, schools and the public to eliminate the digital divide.

'A CENTURY AGO, THE FLU PANDEMIC INTENSIFIED AND CEMENTED INEQUITIES THAT HAD NEGATIVE RIPPLE EFFECTS FOR DECADES AFTERWARDS. WE CAN'T AFFORD TO REPEAT THOSE MISTAKES.'

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NICLAS SANFRIDSSON
CEO AT COLT DATA CENTRE SERVICES

Amongst governments and businesses this is almost certainly true. While many will have been embarking upon a digital transformation strategy prior to the coronavirus pandemic, it has accelerated this process drastically. In truth, for a lot of companies, this simply wouldn't be possible without data centres.

However, during the pandemic data centres have been more than just a growth enabler. For organisations that leverage the power of hyperscale data centres, they have also been a shelter in the storm.

At various points in the year, many businesses and organisations will have felt a keen drop in demand for their products or services. To outweigh this, cutting costs will have been crucial. When businesses are not experiencing high demand, a great area to scale down is data. By purchasing storage space in hyperscale data centres, organisations can simply cut their costs by reducing the amount of space they're paying for. In the same vein, organisations can quickly scale up their operations when necessary. This has been essential for a lot of companies that had to facilitate work from home.

Enabling employees to work from home requires a huge amount of data. This is particularly true when you have employees dotted across the country and the globe. Hyperscale data centres have allowed organisations to connect a wide userbase of employees, while the low latency on offer keeps things running smoothly and quickly. Hyperscale allows organisations to do this without restructuring a cloud infrastructure, which can be expensive and time consuming. As a result, businesses are now seeing hyperscale as essential to the new way of working.

The data centre industry is certainly receiving more attention now than ever before. Being in the spotlight provides an even greater impetus for us to be more effective, efficient and sustainable. The last point is important and, as an industry, we have a huge responsibility. As the world tackles climate change, we must become more sustainable in our own practices and support our customers as they do the same.

'DURING THE PANDEMIC DATA CENTRES HAVE BEEN MORE THAN JUST A GROWTH ENABLER. FOR ORGANISATIONS THAT LEVERAGE THE POWER OF HYPERSCALE DATA CENTRES, THEY HAVE ALSO BEEN A SHELTER IN THE STORM.'

ANDREW STEVENS
CEO AT CNET TRAINING

Unfortunately, I don't think awareness has grown that much amongst the general public during the coronavirus pandemic. Initially, there was a small spike in talk and recognition regarding the data centre and network infrastructure industry as a critical resource. However, this was more government related, when mission critical teams were recognised as key workers providing essential skills across the telecommunications and data infrastructure sectors.

At the start of the first national UK lockdown, there was a noticeable increase in the conversations around ensuring the networks could handle the increased demand from people who wanted to stay connected, and who were now also working from home and home schooling. However, quite quickly, the population seemed to accept this 'new normal'.

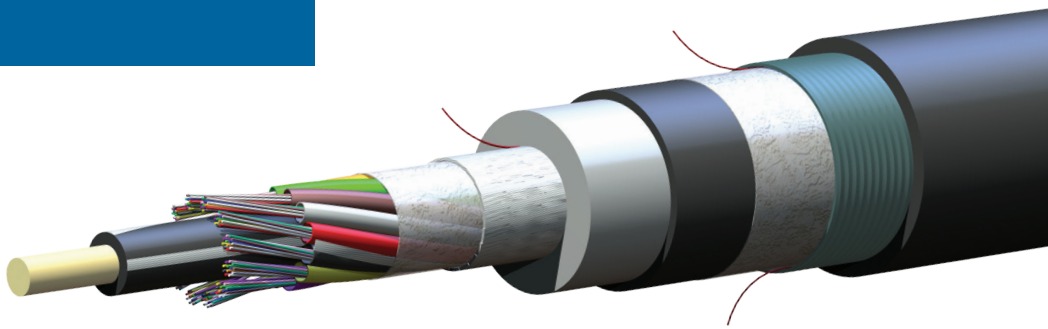
People became used to using applications such as Zoom and Microsoft Teams to stay connected, but if you were to ask them how it works and what makes it tick, would they know? And do they really care? I think as the pandemic continued, people quickly adjusted and the focus turned more to connectivity.

Suppose a family of, say, five people are all on calls in the same building using the same network simultaneously, working and home schooling all day. Their biggest concern is if their connectivity is up to the job. Nearly every day on virtual calls, there are comments about 'the Wi-Fi not being able to handle demand' or 'the network or laptop being very slow today'. If someone's internet goes down, you don't often hear people talking about the deeper reasons as to why this is happening – they just tend to blame their poor Wi-Fi connection, their broadband provider or signal.

The conversation amongst the general public during the pandemic has been focused more on how much we rely on staying connected – but I think that is where it stops. I'm not sure how much people care or are bothered by what is supporting and managing this increased demand globally. As dramatic as the pandemic has been, I think people have moved on and now and just accept the new ways of virtually working, living and socialising. They aren't asking questions anymore about how it works, they just expect it to.

'THE CONVERSATION AMONGST THE GENERAL PUBLIC DURING THE PANDEMIC HAS BEEN FOCUSED MORE ON HOW MUCH WE RELY ON STAYING CONNECTED – BUT I THINK THAT IS WHERE IT STOPS.'

CORNING



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STEVE CONNER

VP SALES AND SOLUTIONS ENGINEERING AT VANTAGE DATA CENTERS

With an unprecedented number of people working from home, the general awareness and appreciation of the continuous availability of cloud, web and video conference services have risen substantially. But few wonder where these essential tools actually reside. Many consumers think that data and apps live in 'the cloud', which may be true, but that cloud physically resides in a data centre somewhere.

For the general public, the main technology concerns include convenience and service – receiving/sending messages, using mobile devices for apps and calls, making searches and transactions online whenever they desire and without a hitch. If they are doing their job, the data centres enabling all of this should remain transparent to the public eye. And this is most often the case thanks to the high levels of resilience, power and network redundancy increasingly deployed at modern facilities around the globe.

However, many consumers have found weaknesses related to the network during the pandemic. As we work and learn from home, we may find that our connections are not as fast as we'd like. This is largely due to the immediate expansion of network traffic associated with the 'new normal'. Networks including last mile, metro and wide area were designed with specific growth targets in mind and were not ready to handle the immediacy and volume of traffic thrust upon them.

For enterprise businesses, governments and service providers, however, the pivotal role that data centres play in running their operations and the global economy at large was evident well before the pandemic, as record year over year growth in cloud and colocation provision shows. The pandemic has certainly brought to light our reliance on technology and has proven, for most, that we can work, collaborate and run our businesses remotely thanks to technology and the digital infrastructure that enables it.

2021 will continue to see record data centre construction levels. It is no coincidence that many national and local governments are accelerating the permitting process for these facilities and deployments of optical fibre infrastructure to keep pace with demand.

'WITH THE UNPRECEDENTED NUMBER OF PEOPLE WORKING FROM HOME, THE GENERAL AWARENESS AND APPRECIATION OF THE CONTINUOUS AVAILABILITY OF CLOUD, WEB AND VIDEO CONFERENCE SERVICES HAVE RISEN SUBSTANTIALLY.'

NICKY THOMPSON
BUSINESS DEVELOPMENT AT DENECY

The hidden power base behind our modern life – the data centre – is not, for the general public, recognisable as the facilitator of many of the applications and services which they benefit from. This is largely due to the fact that they are not wondering how or why it works. And this is, of course, reasonable – we can't know and understand everything.

Businesses that take complex solutions and simplify them demonstrate the point. However, what the pandemic has done is to boost people's interest in technology and enabled them to see the value it can add to their lives.

The government, which is somewhat preoccupied at the moment, cannot have missed the vital contribution and lifeline that data centres have provided to us and it will be interesting to see if, as a result, there is increased support for the industry and what form(s) it will take. The importance of data centres is not in doubt – the question is how to minimise the negative impact of their existence and turn negatives into positives, such as more investment in the drive for sustainability and lowering carbon emissions, reusing heat, renewable energy etc.

I believe that overall there are more positives than negatives from raising the profile of our industry. However – and this may seem a little tenuous – I am concerned that with data centres underpinning so many aspects of technology, there is a real risk that the human race will forget how to communicate with each other in person. Throughout the various restrictions of the last year, maybe we have all had a very real reminder of the value of personal contact and the trick will be hanging on to that value!

There's nearly always a downside to an upside, but I much prefer to conclude my thoughts on the positive. Being under a spotlight can showcase career possibilities and inspire people to get involved. And for an industry which is often talking about skills shortages, this is certainly one huge positive that can promote it and help to attract the future 'taskforce'.

'BEING UNDER A SPOTLIGHT CAN SHOWCASE CAREER POSSIBILITIES AND INSPIRE PEOPLE TO GET INVOLVED. AND FOR AN INDUSTRY WHICH IS OFTEN TALKING ABOUT SKILLS SHORTAGES, THIS IS CERTAINLY ONE HUGE POSITIVE.'

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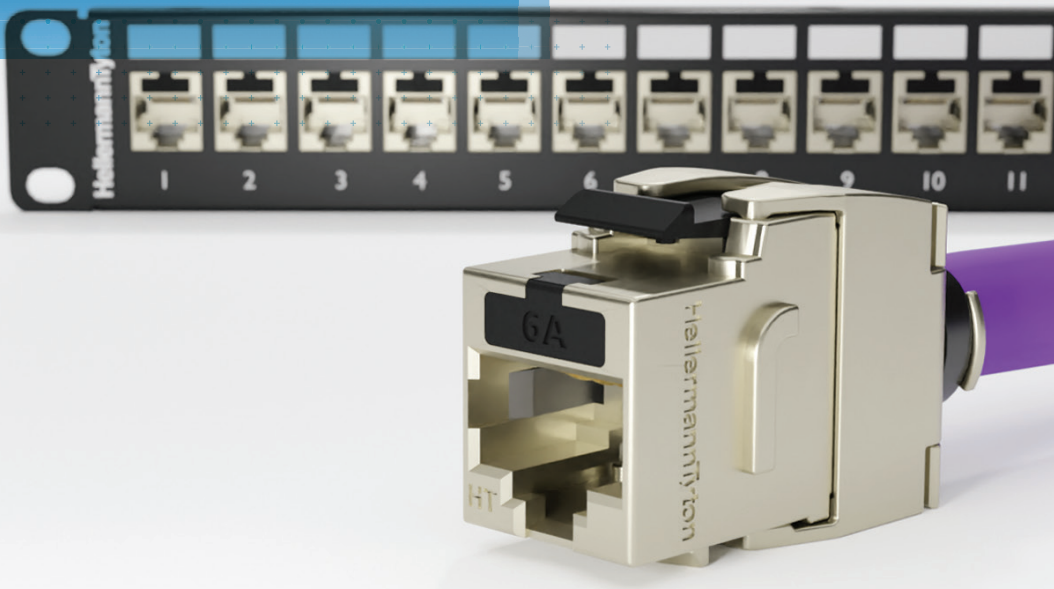

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MANAGING DIRECTOR UK AT EQUINIX

The coronavirus pandemic has brought about a shift towards remote working, which has led to an increased need for secure and scalable IT infrastructures. At the outbreak of the pandemic, many governments worldwide immediately recognised data centres as critical infrastructure, due to their role in supporting the health, financial, technology and government sectors – all of which have been fundamental to stabilising national economies.

Data centre companies acted quickly to help enterprises digitally transform overnight. Businesses rushed to scale online collaboration tools and network capacity, adapting their service offerings by adding new locations, connections and applications to ensure millions of people could adapt seamlessly to a new working style.

According to a recent PwC survey of US chief financial officers, 49 per cent reported that they would make remote work a permanent option for roles that allow it. The increased use of collaboration tools such as Zoom and Microsoft Teams is driving demand for network bandwidth capacity to support video traffic travelling over the internet and via private connection.

This growing need for video conferencing has led to an explosion of internet traffic, with unified communication vendors WebEx and Cisco reporting increases of 100 per cent globally. Data centres operate the foundational infrastructure that supports these applications and reliance on them will continue as the world adapts to a hybrid home/office working environment post-pandemic.

Increasing reliance and awareness of digital infrastructure companies may lead to scrutiny of their power consumption. However, critical infrastructure providers are dedicated to pioneering innovations and operating sustainably. Recently, 25 leading data centre companies and cloud infrastructure providers, along with 17 trade associations from across Europe, joined together to form the Climate Neutral Data Centre Pact (CNDCP). This pledge marks a commitment to make Europe's data centres climate neutral by 2030 – a significant step to ensuring the climate neutrality of the whole continent.

It is clear that data centres underpin the global economy and they will be critical to ensuring swift economic growth post-pandemic. The recent commitment to reducing the energy consumption of Europe's digital infrastructure will also ensure there is a green recovery.

'INCREASING RELIANCE AND AWARENESS OF DIGITAL INFRASTRUCTURE COMPANIES MAY LEAD TO SCRUTINY OF THEIR POWER CONSUMPTION. HOWEVER, CRITICAL INFRASTRUCTURE PROVIDERS ARE DEDICATED TO PIONEERING INNOVATIONS AND OPERATING SUSTAINABLY.'

Tripp Lite UPS systems now available from Mayflex

Tripp Lite, a leading manufacturer of power and connectivity solutions, has a longstanding reputation for both quality and excellence. Headquartered in Chicago, USA, the company has a global presence in over 90 countries with more than 50 regional sales offices.

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Tripp Lite UPS systems are ideal for home/office computers and peripherals, small networks, mission critical applications, audio and video applications, and hospital/medical equipment. You can rely on a Tripp Lite UPS solution to provide the necessary back-up as and when you need it.

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- Voltage regulation
- Remote monitoring and maintenance availability
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Online tools

Tripp Lite offers several online tools that make choosing your UPS, or comparing a model with a competitor brand, quick and easy to do. Check out the links below:

- **UPS Finder – CLICK HERE.**
- **Competitor Cross Reference – CLICK HERE.**
- **Replacement UPS Battery Finder – CLICK HERE.**

Why buy Tripp Lite from Mayflex?

Mayflex leads the way in the distribution of converged IP solutions. With specialist knowledge and experience, Mayflex brings together best in class infrastructure, networking and IP security solutions to create a compatible, feature rich, value for money offering to meet the demanding needs of business types and sizes across all sectors.

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Train to gain

The Mayflex Academy, in partnership with Tripp Lite, is running regular courses that focus on the basics about how to pick the right UPS for your requirements and the things that you need to be aware of when installing UPS systems. **CLICK HERE** to see available future dates and to book your place(s).

Get in touch

If you don't already deal with Mayflex, you can easily open an account by **CLICKING HERE.**

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Don't push the panic button

Louis McGarry of Centiel UK explains why, when it comes to uninterruptible power supplies (UPS), value engineering can prove to be a false economy

Imagine the scenario – your organisation needs a new UPS. It might be that company growth has increased the load, you have outgrown your existing premises or just that legacy systems have reached end of life. Whatever, the budget is tight and everyone's panicking! When costs are put under scrutiny, the phrase 'value engineering' starts being mentioned.

DECISION TIME

Unfortunately, when value engineering becomes the focus, quality and performance can be compromised. This can influence the decision to purchase a product that does not fully adhere to the original specification. However, when it comes to UPS solutions, nobody should need to resort to value engineering under any circumstances.

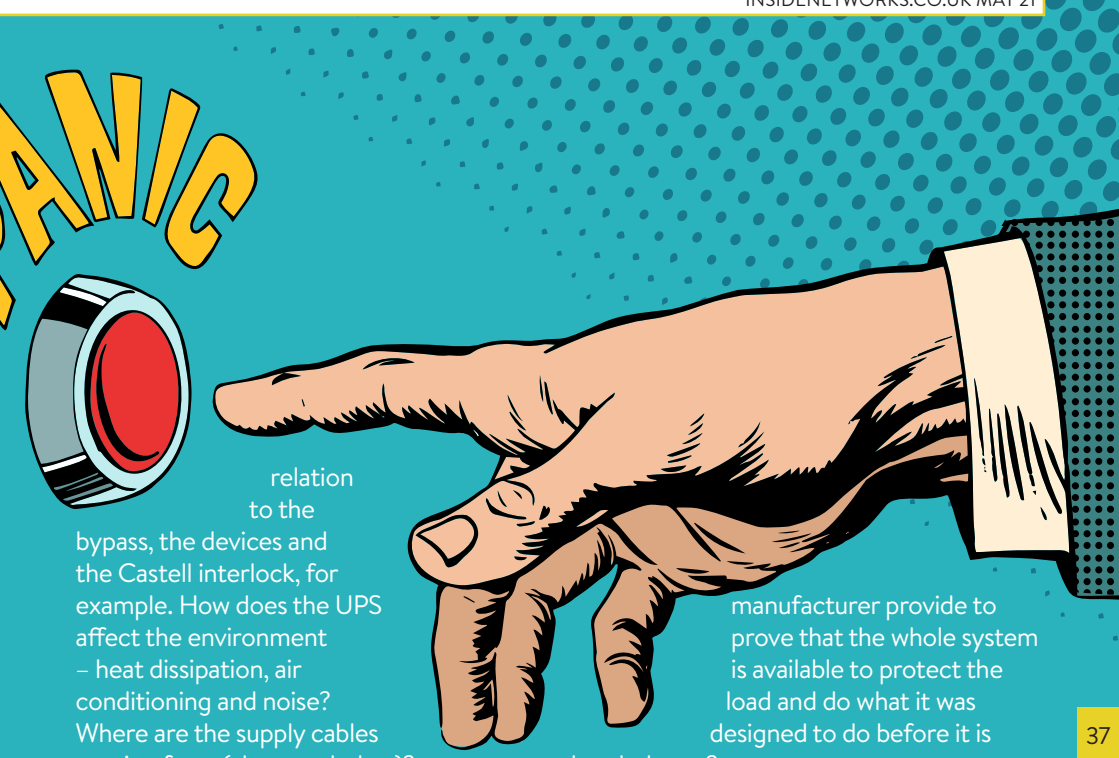
UPS systems are vital in critical environments such as hospitals, data centres and commercial institutions where even the shortest interruption can cause significant financial losses or even endanger lives. Budget challenges should not mean compromising on quality and functionality – so why take the risk?

One way to ensure quality, and to avoid going down the value engineering route, is to specify equal and approved alternatives at the design stage. This is where several manufacturers are selected as suitable to provide an equal and approved product – an alternative to the one named in the main performance specification.

QUESTIONS AND ANSWERS

The challenge comes when deciding what is a suitable equal and approved alternative. It is not just about specifying a UPS system, it is about how that system integrates with the rest of the infrastructure.

Consider everything that makes the project function, from build to testing to maintenance. It's necessary to understand how the switchgear has been designed in



relation to the bypass, the devices and the Castell interlock, for example. How does the UPS affect the environment – heat dissipation, air conditioning and noise? Where are the supply cables coming from (above or below)? Is the discrimination (disconnection of downstream devices) appropriate? Therefore, accepting an equal and approved alternative is not just a tick box exercise but a holistic approach to the integration and design of a project. This can be complicated stuff.

TESTING TIMES

Testing is also a consideration. How will the UPS perform during a full integrated systems test? How comprehensive is the factory acceptance testing? What evidence can the manufacturer provide to prove that the whole system is available to protect the load and do what it was designed to do before it is handed over?

The correct approach is to work through each element with experts in that area to enable project design teams and consultants to sign-off the equal and approved product confidently. To solve the issue of complexity, it may appear safer to use a previous design or old specification instead of creating a new one. However, sometimes you can fall into the trap of 'we've always done it like this, and it's worked before'. This is probably one of the most dangerous sentences ever uttered.

How old was that specification? It could be 10 years out of date and what if it was based on an even older design? If I had a pound for every specification I see which includes a 12 pulse rectifier I'd probably be able to buy one on eBay. The industry stopped using these 20 years ago!

PROTECT AND SURVIVE

My point is that budgets get busted – that's life. However, you still need a UPS that

'Scalable modular UPS systems offer a pay as you grow solution to those with restricted budgets. In this way you never pay for more than you need.'

will protect the load today and one that has the capacity to be flexible and grow to do the job tomorrow. Doing what you've always done means being left behind, as your organisation will miss out on the latest technological developments that can offer more flexibility, greater availability and reduce total cost of ownership. The right decision is an investment for the future, so it is important to understand what is really required to select an equal and approved alternative product.

Some of the complexity comes from terminology – buzzwords and acronyms can be unhelpful. If the requirements suggest a centralised architecture, ask why? Could there be a better alternative? Ask for a comparison between the various architectures available, including features and benefits.

Make sure there is a clear understanding of what functionality each product provides. Hot swappable can mean a million things but really what is required is the ability to exchange modules seamlessly on a live system. It is the ability for this to be completed safely and to mitigate any human error – this is what safe hot swap versus hot swap actually means. This feature is only available as part of the latest technological developments. In a system without safe hot swap, any issue with a module going into a live system could have catastrophic consequences, such as the load being lost.

FACE FACTS

By considering the benefits of each element of functionality, using factual terminology, it is possible to assess and define what the system is really required to do and why. Purchasing only what is needed at day one controls costs while maintaining the quality of the solution – and no-one needs mention value engineering at all.

This clever engineering can be best illustrated by scaling. Oversizing a UPS installation is easily done, and can result in wasted capital and operational expenditure. It's not just the initial purchase price of an

oversized system, it's the wasted energy to run and cool it. The maintenance and repair costs are also higher with a larger solution. Careful calculation of the actual load requirement from day one means it is possible to reduce costs but be flexible to accommodate future growth for day two and beyond.

Designing architectures with the capacity for tomorrow, but giving you the ability to implement only what you need today, reduces upfront installation costs. Scalable modular UPS systems offer a pay as you grow solution to those with restricted budgets. In this way you never pay for more than you need.

FAIL TO PLAN...

Another reason for people 'doing what we've always done' is fear of failure. In the past 'you wouldn't get fired for choosing IBM'. Maybe not, but is the best solution the one everyone's used before? Technology moves on and better solutions become available.

To overcome this challenge you need to work with trusted advisors. Choose those who are at the forefront of the industry and experienced in a variety of projects to develop and implement the most modern UPS solutions that maximise the benefit to organisations. In this way, the optimum solution can be determined and designed and the 'equal and approved alternative' can outperform the specification and still be the most cost effective way forward.

TALK ABOUT IT

The key to success is open and productive discussions between all parties to come up with the best long-term solution – in contrast to a kneejerk 'just buy the cheapest' reaction. Trusted expert advisors can help solve common commercial challenges with equal and alternative solutions that do outperform the specification and keep the total cost of ownership down. The result is a win-win for client, consultant and contractor alike and no-one need have a panic attack and mention value engineering ever again. ■

LOUIS MCGARRY

Louis McGarry is sales and marketing director at Centiel UK. His experience in the UPS industry spans over a decade, with an extensive knowledge of products that enables him to successfully design and deliver solutions for the critical power market. McGarry joined the Centiel team early in 2018 to assist in delivering the company's technology to the critical power market and build the Centiel brand.

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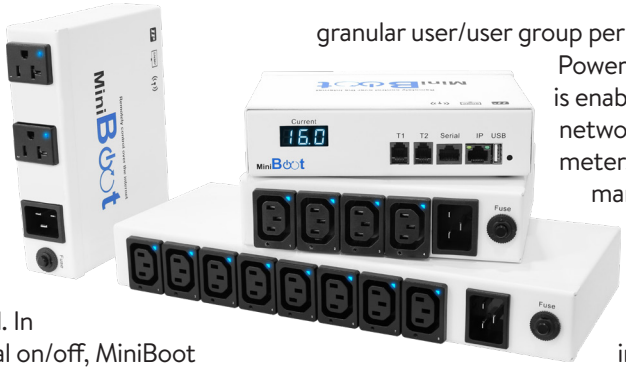
Austin Hughes



MiniBoot from Austin Hughes provides a simple and easy way to reboot a hardware device remotely over IP when a complete restart is required. In addition to manual on/off, MiniBoot provides three kinds of auto outlet control:

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- Outlet on/off by sensor condition
- Outlet on/off scheduling

MiniBoot offers enterprise level IP authentication via Active Directory (AD) and Lightweight Directory Access Protocol (LDAPv3/LDAPS). It also utilises the Remote Access Dial-In User Service (RADIUS) protocol and/or local credential database, with strong passwords and granular user/user group permissions.

Power monitoring is enabled via the network and local meter, while remote management can be carried out using the built-in graphical user interface (GUI) or through third-party data centre infrastructure management (DCIM) software via SNMP V2/V3. Users can also try to recover a crashed device by remote reboot, reducing the need to send engineers to site and therefore improving uptime and productivity. Additional features include diversified inlets and outlets, sensors, plus a Wi-Fi option.

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www.austin-hughes.co.uk

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Available from CMW, the Riello Sentinel Dual SDH (Low Power) UPS provides installation flexibility and functionality, and is easy to maintain. The single phase UPS comes in a variety of four power ratings.

The Sentinel Dual is plug and play and can be installed as a 2U rackmount UPS or a freestanding tower, while the LCD display panel rotates 90° to suit the installation configuration that you choose. Designed to handle non-linear loads typically found in blade servers, its inverter helps to deliver >0.98 power factor and 92 per cent efficiency in online UPS mode.

In addition, eco mode boosts efficiency to 98 per cent, reducing power consumption and energy costs, while batteries are hot swappable for easy maintenance. A dedicated EnergyShare socket allows you to disconnect less important equipment during power problems, prioritising valuable battery runtime to your most critical loads.

The Riello Sentinel Dual comes with a five year extended warranty.

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Safe hot swap is not just the ability to exchange UPS modules on a live system – it allows this action to be completed safely while mitigating any human error.

CumulusPower's Distributed Active Redundant Architecture (DARA) ensures that any module being added to a system can be fully isolated and tested within a running frame before it accepts any load. In a system without safe hot swap, any issue with a module going into a live system could have catastrophic consequences and the load could be lost.

CumulusPower reduces total cost of ownership through a high double conversion efficiency of >97.1 per cent and offers 99.9999999 per cent (nine nines) availability – reducing downtime to only 3.5 milliseconds per year. There is a significant difference between this and the most commonly used architecture of 99.9999 per cent (six nines), which allows for 31.5 seconds of downtime.

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APC remains the global leader in intelligent and efficient network power protection and has released a number of new enhanced models, including upgraded remote management technology. Patch Solutions can also supply NetShelter enclosures and accessories, as well as cable management, rack LCD consoles and APC containment products – meaning that you're in the best hands for any APC requirement.

For more information **CLICK HERE,** to contact a member of our team call 01442 890890 or to send an email **CLICK HERE.**

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Mayflex

Mayflex is now distributing Tripp Lite's extensive range of UPS systems and other complementary products in the UK. Tripp Lite has a longstanding reputation for both quality and excellence – headquartered in Chicago, USA, the company has a global presence in over 90 countries with more than 50 regional sales offices.

Tripp Lite UPS systems are ideal for home/office computers and peripherals, small networks, mission critical applications, audio/video applications and hospital/medical equipment. You can rely on a Tripp Lite UPS solution to provide the necessary back-up as and when you need it.

To assist customers in choosing the right UPS for each application, Tripp Lite has a range of online tools and configurators, as well as a competitor comparison reference tool.

For further details about Tripp Lite **CLICK HERE,** call our sales team on 0800 757565 or **CLICK HERE** to send an email.

www.mayflex.com

Austin Hughes

Austin Hughes' new intelligent rack power distribution unit (iPDU) IP Dongle – IPD-03S – offers high levels of functionality. Its dual LAN network failover provides an auto failover to a second Ethernet connection in the event of network interruption, ensuring 100 per cent iPDU uptime reporting. Alerts can be received via SNMP, email (SMTP), and syslog when predefined thresholds are exceeded for both iPDUs and environmental sensor events.

The IP Dongle provides remote access to iPDUs by a true network IP address chain. Only one network IP is required for up to 32 one phase and three phase InfraPower iPDUs in a single daisy chain using Category 5/6 cable – significantly reducing the number of Ethernet ports used in deployment. It also features remote level and ID setting for cascaded iPDUs.

InfraPower offers three remote management options:

- Free management software – IPM-04 – which manages up to 50 IP groups and 1,600 iPDUs from anywhere
- A web-based graphical user interface (GUI)
- Third-party data centre infrastructure management (DCIM) via SNMP

To find out more **CLICK HERE.**

www.austin-hughes.com

Taking control of the situation

Jon Barker of Chatsworth Products (CPI) explains why intelligent power management is a hero in today's data economy

It's been a few years since data replaced oil as the world's most valuable asset, prompting rapid advances in machine learning (ML) and artificial intelligence (AI). This evolution isn't surprising, as through data manufacturers can enhance precision and reduce waste. In the medical field, scientists are able to learn about new diseases and their possible cures, while individuals and organisations can make better informed decisions with the use of more easily accessible and actionable data. It's in the data centre where this data is processed, stored and distributed, so given all this, how do you ensure reliability and uptime 24/7?

CASE IN POINT

To better understand the dynamics of their facilities and systems to make informed, faster decisions, data centre managers should rely on intelligent power management solutions that provide useful data to enable speed of deployment, as well

as simple and reliable operations. However, the data economy brings even more challenges, particularly in unprecedented times, and the following examples offer some context.

• Global coronavirus pandemic
Social distancing requirements have pushed the need for remote life and connectivity faster than ever imagined. Businesses, healthcare and educational organisations have had to ramp-up their digital preparedness quickly to meet increased speed, connectivity and accessibility demands.

• Internet of things and behaviour (IoT and IoB)
Emerging technologies such as AI, facial recognition, 5G wireless and geolocation allow businesses to gather and analyse data more efficiently and effectively, enabling them to influence behaviour. As sensor prices continue to drop, industries are on the cusp of an era where people, businesses, devices and processes can be connected to each other.

• Infrastructure, platform and software as a service (IaaS/PaaS/SaaS)
Distributed architectures for collaboration and productivity secure remote access, cloud and edge infrastructure, and automation to support remote operations.

• Distributed cloud
By 2025 most cloud service platforms are expected to provide at least some distributed cloud services that execute at the point of need.

• Intelligent edge
Edge deployments are growing, benefiting any business that manages infrastructure, networks, clouds, data centres and connected endpoints such as sensors, actuators and devices.

• Simplified supply chain
According to Gartner, making the supply chain more resilient, reliable and simplified is the top concern of chief information officers (CIOs).

REMOTE CONTROL

The most granular information about equipment health is obtained with rack level intelligent power distribution units (PDUs). PDUs provide current, voltage, temperature, humidity and power consumption information, allowing data centre managers to remotely monitor and control power, environmental conditions and cabinet access through a safe user friendly interface.

In multitenant data centres, remote power control functionality reduces remote hands service charges for simple physical reboot activities. Generally, the price of a PDU equates to the sum of a few remote hand service charges, so the return on investment (ROI) is higher when supporting critical equipment like an interconnect switch, router or server.

Similarly, in remote/edge and other unattended sites, remote power control eliminates truck roll. In this case, the ROI may be even higher, as downtime can be longer when there are no on-site staff or accessible remote hands services. The overall cost/benefit of a truck roll for a simple physical reboot is quite expensive.

KEEP IT SIMPLE

In laboratories and test sites, remote power control reduces the complexity of rebooting equipment when making test changes. Generally, testing involves various

configurations with intermittent reboots. The ROI equals a more efficient use of staff resources and possibly reduces the time required for test set-up and processing.

An additional application that can apply to all types of sites is the ability to maintain the power off condition on any unused outlets, review available and failover capacity before deploying and powering new equipment, or secure power when retiring old equipment. This is a critical energy saving and security practice, both to restrict access to power and to remove unused or underutilised servers.

MONITOR AND MANAGE

It is also possible to monitor environmental data more proactively:

• Temperature

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) recommends intake temperatures within each rack to be between 18-27°C (65–80°F), and exhaust temperature to be no less than 20°C (35°F) compared to intake. ASHRAE also suggests at least six temperature sensors should be deployed in each rack for accurate recording.

All networked devices need to be monitored for temperature to allow data centre managers to easily identify hotspots and prevent equipment from overheating. Temperature sensors can also highlight overcooled areas within a data centre, helping managers reduce overspending.

'PDUs provide curren
humidity and power
information, allowing
to remotely monitor
environmental condi
through a safe user f

• Humidity

Monitoring humidity is key in preventing possible corrosion or static electricity, especially when an environment is too dry. To simplify environmental monitoring, look for market solutions that integrate intelligent power distribution with environmental monitoring. In the same platform, data centre managers can visualise both power and environmental conditions and make proactive decisions to prevent downtime.

SAFETY FIRST

With greater amounts of confidential data stored in the cloud, physical access control at the cabinet level needs to become a norm rather than an exception. In fact, giving the right person the right access at the right time, and being able to keep a log of each cabinet access attempt, is law in many sectors and regions – the European Union's General Data Protection Regulation (GDPR) is a great example. Multiple solutions that vary based on the level of security, management modes and budgets are available for organisations to

t, voltage, temperature,
consumption
data centre managers
and control power,
tions and cabinet access
riendly interface.'

consider.

Electronic lock and access control systems automate the monitoring, documenting and control of access, and allow fast reprogramming if access rights change or if a credential is lost or stolen. These types of control systems support three types of keys:

• Something a person has – access card
An access card can be used to assign and change credentials quickly without the need for changing locks. However, an access card can still be lost or stolen

• Something a person knows – keypad passwords
A password is more difficult to steal, but it can be guessed or reprogrammed

• Something a person is – biometrics
Biometric authentication is uniquely associated with an individual's digital print

A comprehensive electronic access control solution can play a vital role in a data centre's user access management plan. It is important to consider the levels of security for each type of access – single factor or multi-factor authentication. Again, to simplify operations, data centre managers should look for market solutions that integrate power distribution, environmental monitoring and access control in the same platform, using minimal network connections. This allows three vital tasks that are typically deployed from different vendors – power management, environmental monitoring and access control – to be integrated into a single hardware solution.

MAKING THE DIFFERENCE

To support the digital economy, data centres require intelligent products that not only meet the minimum market requirements but exceed expectations in reliability, capacity and quality. Robust, integrated power management solutions simplify and reduce the cost of basic troubleshooting and environmental monitoring, and prevent unauthorised access to equipment. ■

JON BARKER
Jon Barker is CPI's technical manager for Europe. He has over 25 years' experience in the engineering industry, with 12 years specialising in data centre infrastructure. As technical manager, Barker serves as a technical contact, accountable for resolving pre- and post-sales technical support questions and issues, and provides support to CPI's sales team by delivering product and technology based presentations to customers, channel partners and industry event audiences.

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How the Rise of Edge Computing will Reshape the Data Center Landscape is a white paper from **Siemon.** **CLICK HERE** to download a copy.

Hope for the best, plan for the worst

Jason Shields of Sharp Group Fire and Security Services explains what data centre operators can do to suppress the probability of their premises – and the digital real estate of their customers – from going up in flames

It may be an uncomfortable truth for those working tirelessly in the sector, but a global majority delight in data centres only being conspicuous by their absence from the public's consciousness. The masses are quite content for the facilities that enable the digital world to tick – and on which so many aspects of our social and business lives increasingly rely – to remain firmly in the background.

DISASTER STRIKES

Such a stance is perhaps understandable given that when a data centre does force its way into the forefront of people's thoughts, it is inevitably in the event of something going wrong and services being disrupted. To put it simply, data centre operators are expected to enable our social media feeds and rolling news sites but not feature on them – as was the case recently with OVH, Europe's largest native cloud provider.

When a fire destroyed a data centre – and led to the power being cut to three others – at the company's campus in Strasbourg, the blaze's scorch marks spread far beyond the facility's perimeter fence. While there was thankfully no harm to human life, many of OVH's customers were quick to take to Twitter to complain of downed websites and applications as smoke shrouded SGB2.

MONEY MATTERS

For those without disaster recovery plans or back-up sites, the impact of unscheduled downtime can run to tens of thousands

of pounds in lost revenue. Even though most companies have business continuity measures in place, they rarely take kindly to having to use their safety net or the headache of seeking recompense through insurance channels. Consequently, any operator failing to preserve performance or, in the event of accidental damage, recover quickly, risks smouldering resentment from clients and a significant dampening of profits.

Regardless of whatever is ultimately identified as the cause of OVH's misfortune, Strasbourg serves as a stark reminder of what can happen if a fire takes hold in one of the technological tinderboxes that usually sit unnoticed behind the scenes. So what can data centre operators do to avoiding meeting the same fate?

PRACTICE MAKES PERFECT

For facilities bearing a heavier electrical load than most other buildings, and which are responsible for fanning the digitisation of civilisation, many of the answers are surprisingly low tech and hail from established and proven practices.

For all the advancements made in safety systems, the human senses remain crucial to fire prevention, meaning it is imperative that those working within data centres receive the necessary training to attune their eyes, ears and noses to potential threats. Vigilance is, however, a vocation and passing the burden of responsibility to professionals is the most prudent precaution.

Ideally, fire prevention and observation should be part and parcel of a data centre's security detail and be a mobile rather than static measure. Employing a tour guard system, which involves checkpoints and regular, scheduled walks around physical racks and servers, is a simple means of spotting if anything is awry. Doing so will also serve as a routine check that extinguishers are where they should be, suppression cylinders are full and that fire escapes and exit routes are clear. Similarly, an eye for the finer details is critical to mitigating potential causes of fire.

TRACK AND TRACE

It is imperative, although not always the case, that an up to date register of a centre's assets and testing and

maintenance records are maintained. Losing track of service dates is a dangerous game to play and could prove fatal in respect of alarm and suppression systems.

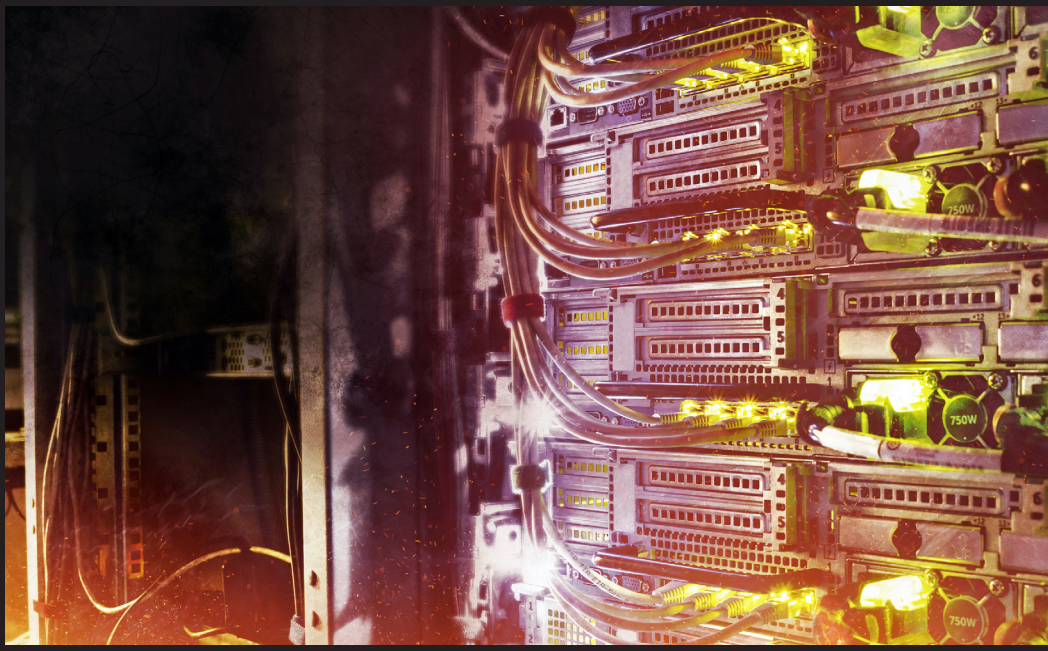
When it comes to fire safety data centre operators should demand an ongoing service from their chosen provider – one which extends far beyond the unboxing and installation of equipment. Regular inspections by engineers and the sharing of their reports should be the norm, with any documentation providing an easy to understand aide memoire of what checks have been done, what needs to be done and, ideally, include recommendations for future proofing operations.

> 'For all the advancements made in safety systems, the human senses remain crucial to fire prevention, meaning it is imperative that those working within data centres receive the necessary training to attune their eyes, ears and noses to potential threats.'

CAUSE FOR ALARM

Aside from reducing the chances of an actual fire, a well-planned approach to the maintenance of alarms can help to diminish dreaded downtime. Left unchecked, the electronic devices used in older systems tend to become more sensitive with age and can be activated by something as benign as dust from an employee's shoe.

While an alarm going off is precisely what you want in the event of an actual fire, it is less than desirable – and an unwelcome



disruption – when there is absolutely no risk to the building and those in it.

Knowing when it is time for an upgrade, ahead of an actual failure, is therefore useful for both fire prevention and protecting profits. Finding a fire safety firm with an appreciation of the pressures on data centres to provide a consistent service can also help to avoid unnecessary time offline. The testing of interfaces or replacement of a system need not be a burden on an operators' bottom line if arranged to take place during planned power downs.

EYE FOR DETAIL

Of course, a proven eye and pragmatic approach are not the only defences available and all comprehensive solutions should take advantage of the technology on offer. Given data centres sit at the cornerstone of all things digital, it would be counterintuitive not to.

Automated fire shutters, fire detection cameras, digital messaging services and use of Inergen – a blend of naturally occurring gases – in suppression systems all have a part to play in protecting the wellbeing of property and people. But cutting edge components must be given the back-up they require if they are to prove effective and that means facility owners need to keep trusting in the traditional.

DUE DILIGENCE

Preventative maintenance, conducted in accordance with the latest standards, and round the clock surveillance require a human touch – as does the all-important act, in the event of a fire, of closing the door behind the last out. Given a stray spark is enough to ignite the smallest accumulation of dust, keeping data centres from the headlines is a process of constant evaluation. ■

JASON SHIELDS

Jason Shields is finance director at Sharp Group Fire and Security Services. He has worked at the firm for over 16 years and has a wealth of experience and understanding of the issues we can face today, especially within data centres.

Asperitas promotes Andy Young to chief technology officer


Andy Young

Asperitas has promoted Andy Young to chief technology officer. Previously director of research and development, this broader technical and engineering role will be an asset to the Asperitas team, assisting the company towards further success.

Young's exceptional work within the management team, coupled with his in-depth knowledge of immersion technology, has been integral to the exponential growth in customer engagements, fuelling further company expansion in the coming months.

Young commented, 'I am thrilled to have this opportunity to lead the engineering team at Asperitas, working at a more strategic level within the company. We are growing from strength to strength through delivering high performance solutions whilst addressing the challenges faced with performance, carbon emissions and water use reduction. I am proud to head-up a team that provides such highly experienced service and support for our customers.'

Mayflex brings a new approach to the audiovisual sector


Simon Jacobs

Mayflex has launched a new brand of passive audiovisual (AV) equipment that will be supplied in 100 per cent single use plastic free packaging. Aura brings a different approach to an established market, with an extensive range of products backed-up with high levels of service and support.

In September 2020 Mayflex appointed Simon Jacobs, who brought with him over 20 years' experience of the AV market. He has worked closely with the leadership, sales and marketing teams at Mayflex to develop the Aura brand and ensure that it comprises premium products that meet market requirements.

Jacobs commented, 'I'm excited to see the results of many months of work to design and develop the Aura brand. As the strapline highlights, you "experience different" with Aura and we are pleased to continue our sustainability efforts by supplying products in stylish packaging that is free from single use plastic and made from materials that are 100 per cent recyclable. This is definitely a first for any AV vendor in the market today.'

R&M commits to enabling FTTH expansion

Fibre to the home (FTTH) can be expanded in rural regions around two and a half times faster than usual by above ground cable laying, according to R&M. With a development program for products and solutions for fibre optic aerial deployment, R&M wants to help ensure that network operators make rapid progress in this area.


Thomas Ritz

'We are committed to making FTTH expansion easier and faster,' said Thomas Ritz, R&M's market manager public networks. 'The coronavirus pandemic has confirmed the need for fibre optic broadband internet access. However, the traditional subscriber network architecture is not yet ready to cope with the onslaught of spontaneous, parallel remote working, e-learning, streaming and gaming. End to end fibre optic connections to end users are one of the requirements for almost unlimited broadband data transmission to the home.'

To date it has not been worthwhile for telecom companies to make the large investments necessary to provide FTTH outside of towns and cities, so rural areas still have many underserved areas. 'Above ground cable laying – also called aerial deployment – is therefore becoming interesting again,' commented Ritz. 'FTTH can be rolled out about two and a half times faster through aerial deployment by using existing telephone or electricity company poles instead of underground cabling. In addition, aerial deployment is much more cost effective than underground cabling because, among other things, less planning and personnel effort is required and existing infrastructure can be used.'

CHANNEL UPDATE IN BRIEF

Riverbed has promoted Brecht Seurinck to vice president channel sales in Europe, Middle East and Africa.

Devo Technology has unveiled the Devo Drive partner program for resellers, managed security services providers and global systems integrators.

Dixa has acquired Melbourne based Elevio in a circa US$15m deal.

Nokia has introduced two new professional level 5G certifications. Industrial Automation Networks and Distributed Cloud Networks are part of Nokia's program to train and certify industry professionals on 5G technology. Nokia has also announced a partnership with Google Cloud to develop new, cloud based 5G radio solutions. The two companies will collaborate on joint solutions combining Nokia's Radio Access Network (RAN), Open RAN, Cloud RAN (vRAN) and edge cloud technologies with Google's edge computing platform and applications ecosystem.

Zyxel has made its switches and wireless devices available as a service – and partners can now offer this as an option to their customers through Exertis UK.

Taking the initiative

Stuart Holyoak of CommScope looks at the future of indoor wireless connectivity

Across the globe, individuals have found themselves restricted to their own homes due to lockdowns, while businesses have had to switch to remote ways of working. However, looking forward to the year ahead, it seems that things are slowly returning to a sense of normality. The vaccine rollout has meant we can finally begin thinking about the light at the end of the tunnel.

LESS IS MORE

As we look towards the new normal, network operators have started to turn their attention back to wireless connectivity. During the midst of the pandemic, optical fibre was understandably a crucial focus, as the population required reliable connectivity while confined to their homes. But as we transition out of lockdowns, it's time to return some attention to developments in indoor wireless connectivity.

Indoor wireless connectivity is still a major and complex challenge. We spend a huge amount of time on wireless devices, especially when inside, and this can cause huge strain on networks in busy locations such as arenas, airports, office buildings and hospitals. With high volumes of people and mobile traffic in one location, it can sometimes be difficult to provide optimal mobile connectivity for all devices.

Beyond volume numbers, building

architecture can also pose challenges. For example, energy efficient, glass heavy buildings block the higher frequency spectrum bands that are needed for 4G and 5G connectivity. At the same time, bringing mobile operators together to tackle these problems isn't always an easy process – it can be a long and complex process involving numerous technologies, operations and stakeholders.

ON THE MOVE

A key step in addressing these indoor wireless connectivity challenges was taken last year when O2, EE, Vodafone and 3UK agreed on the Joint Operator Technical Specifications for Neutral Host In-Building (JOTS NHIB). The initiative established a set of specifications for the industry, laying out the technical requirements for shared in-building solutions using small cell technology.

The Small Cell Forum has also developed a set of guidelines to support the widespread commercialisation of JOTS NHIB. This is an important development for the industry and plays a key part in encouraging network operators to deploy such models. In addition to boosting confidence in the initiative across UK operators, the model presented by JOTS NHIB provides other countries with a starting point to explore, understand and address global connectivity issues.

Both O2 and Vodafone UK have noted the benefits of the JOTS NHIB specification. It ultimately opens up new opportunities for the sector, allowing operators to work together to discover wireless solutions that are technically possible, cost efficient and energy efficient, while also reducing the amount of equipment needed. In exploring these possibilities, it puts network operators

in a stronger position to provide better, more reliable indoor wireless connectivity to customers.

INTELLIGENT FUTURE

The JOTS NHIB initiative paves the way for collaboration opportunities between mobile networks through third-party neutral host network (NHN) operators. It likewise opens up the potential for multi-operator services to be supplied to businesses in a cost efficient way and provides an example model for other regions to follow.

Based on these foundations, the operator agreement unlocks future opportunities for improved indoor wireless connectivity in buildings. The improved collaboration across the industry put in place by the initiative is also driving forward a future of ever more intelligent buildings. This is because improved network connectivity through initiatives like JOTS NHIB can help increase capabilities within buildings. Potential features could include thermal management, remote access control, crowd sizing applications, in-building and remote security cameras, and video broadcast capabilities – each of which will be crucial for buildings in the future.

> 'Indoor wireless connectivity is still a major and complex challenge. We spend a huge amount of time on wireless devices, especially when inside, and this can cause huge strain on networks in busy locations such as arenas, airports, office buildings and hospitals.'

These new opportunities are particularly relevant for the likes of business leaders, landlords and building managers, who each need to ensure their employees and residents have access to optimised connectivity. It's through these smart capabilities that they will be able to

provide connections and services to assist with returning fans, visitors, patients, travellers and workers to normal operating procedures.

MOVING FORWARDS

Network infrastructure providers are also engaging with the JOTS NHIB initiative. With the help of neutral host partners, there are now multi-operator deployments across networks that are running optimised connectivity services.

Through the cloud, it can create strengthened networks within public buildings and spaces, and ensure wireless network coverage is optimised. With this heightened capacity, increased reliability and ultra-low latency performance, this technology helps mobile network operators to match the increasing demand for reliable networks, while also complying with JOTS NHIB specifications and customer requirements.

Ultimately, the JOTS NHIB initiative has opened up new prospects in the world of wireless connectivity. Those who rely on wireless networks will now have smooth, instant access to a whole host of new opportunities. Operators can easily work with neutral host partners to create better experiences for end users such as employees and the public.

SUPPORT STRUCTURE

As we approach the end of lockdown restrictions, high quality connectivity will be crucial. Even as we see the return of employees to the office and fans to stadia, remote working and social distancing measures will be around in some form and it's through new specifications and a set of optimised neutral host ecosystems that our networks will be able to support this new reality. ■

STUART HOLYOAK

Stuart Holyoak is director of small cells business development in Europe at CommScope. He joined the company in 2017, having previously worked at ip.access for seven years as global head of technical sales, and T-Mobile UK for 14 years in numerous engineering, deployment and customer facing roles. Holyoak started his career in telecommunications by serving in the British Army Air Corps for seven years.

Cable Management Warehouse (CMW)

Available from CMW, EnGenius Cloud is a scalable and artificial intelligence (AI) ready platform that helps you work smarter and can help to resolve the pain points of a traditional network. The platform's service level agreement (SLA) guarantees 99.99 per cent availability for your network.

You can remotely manage and deploy multiple sites with quick registration and configuration, as well as scheduling firmware upgrades. With EnGenius it is possible to manage all of your access points in one place, providing quick access to traffic usage and configurations, enabling you to easily assess your network's health. When abnormal situations occur, AI powered alerts and recommendations guide you to the solution.

A mobile app gives you full control of your cloud managed access points, switches and other devices. The client timeline can pull up an entire history in graphical format to trace back when a network problem may have originated.

EnGenius Cloud allows you to monitor and manage your wireless networks remotely and quickly. The platform is also free!

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

cmwltd.co.uk

Extreme Networks

Extreme Networks is offering a second Extreme Academy Live training course. The eight week course will focus on wireless networks, covering their importance, how they function, and design best practices for a secure, robust network. All Extreme Academy Live courses can be streamed entirely for free and are accessible to all regardless of networking experience or location, further democratising access to technology training and helping to address the networking skills shortage.

Extreme Academy is an academic curriculum designed to educate experienced and aspiring IT professionals on networking, security and cloud fundamentals, as well as machine learning and artificial intelligence.

Extreme Academy Live is geared toward those looking for an entry level introduction to the networking industry and is offered at no cost to participants as part of Extreme's efforts to bridge the digital divide.

Extreme Academy Live Course 1 covering networking basics is recommended ahead of registering for Course 2. The free curriculum is available on-demand via Extreme's YouTube channel. Students who complete the courses can earn key accreditations and certifications and nearly 10,000 students are currently enrolled in Extreme Academy Live.

To find out more **CLICK HERE.**

www.extremenetworks.com

Siemon

The latest enhancements to the IEEE 802.11ax standard for high efficiency wireless has far-reaching implications for cabling infrastructure design. Now, more than ever, the specification of high performance cabling supporting access layer switches and uplink connections is critical to delivering the right capacity for sixth generation wireless access points (WAPs) and 5Gb/s data rates.

Installing two Category 6A/Class EA or higher performing drops to each WAP is recommended, as well as the deployment of shielded cabling to support the remote power requirements of Wi-Fi 6E devices.

To avoid possible damage to plugs and jacks when the cabling is disconnected from a live WAP whilst under PoE load, it is important to select connecting hardware that complies with IEC 60512-99-001.

Lastly, a grid based zone cabling architecture will allow for maximum flexibility to interconnect wired cabling uplinks to WAPs, to quickly reconfigure coverage areas and provide room for WAP upgrades.

For more information on Siemon's solutions for today's high speed wireless applications **CLICK HERE.**
www.siemon.com

WatchGuard Technologies

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

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

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

Drilling down

Dahwood Ahmed of Extreme Networks explains how to unlock a business' potential with network data analytics

A fast and agile network has become the foundation of every modern and thriving organisation – something we have all increasingly identified as essential. As businesses start to emerge from the coronavirus pandemic, McKinsey has revealed that as little as 20 per cent of the global workforce could theoretically remain working from home, while the majority start a measured return to the office. Therefore, investing in a reliable wireless network should remain a top priority for every business right now.

FORM AND FUNCTION

Networks, whether wireless or not, should be more than just fast, reliable and functional – they should offer organisations the ability to access and analyse data. This is crucial, as many companies often have an unlimited sea of data waiting to be used. Furthermore, even if they are using data, many tend to overlook the benefits of analysing it to improve security and functionality, as well as system performance, to ultimately lead to higher profitability.

So, how can a business' potential be unlocked with network data analytics? One area of IT where organisations frequently fall short is in bolstering their cyber defences, often due to under investment or from not fully understanding the potential security risks to their businesses.

Worryingly, according to Orange Cyberdefense 77 per cent of companies say they're unprepared for a cybersecurity incident. This needs to change, as businesses must prevent any risk to not only help their reputations but also their finances. In fact, reports predict that the cost of global cybercrime will grow by 15 per cent year on year over the next five years, reaching $10.5tr annually by 2025.

UNDER THREAT

One of the biggest threats to corporate networks right now is the rise in internet of things (IoT) and the inherent vulnerabilities within these devices. IoT adoption is expanding at an unprecedented rate, with our own research finding that 84 per cent of organisations already have IoT devices on their networks and IDC forecasting that worldwide spending on IoT will skyrocket to $1tr by 2022.

While connected devices have the potential to drive huge operational efficiencies for businesses by reducing overall costs and increasing productivity, every device that is connected and sharing data could see the number of potential

vulnerabilities that cybercriminals might exploit increasing too. This is no surprise given our research also revealed that despite the majority of organisations having IoT devices on their corporate networks, more than 50 per cent do not maintain necessary security measures beyond default passwords.

To avoid connected devices becoming cybersecurity timebombs, businesses must ensure they have full visibility of all endpoints on their networks and get updates on their behaviour. This is where data analytics can step in.

Artificial intelligence (AI) and machine learning (ML) based network solutions can help provide real time data analysis so that businesses can identify patterns and report on issues before they become critical. Such data has the power to enable businesses to identify suspicious behaviour on a device so that they can quickly shut off access to the corporate network before cybercriminals can do any harm.

DECISION TIME

All types of businesses are facing a challenging new reality as they try to plan for the path ahead. In addition to keeping organisations secure, data analytics has the ability to reveal patterns in network behaviour, such as traffic spikes, that can help to, for example, identify what is and isn't working in the office in order to drive and inform better decision making. Historically, data has been many organisations' pain point due to the lack of time, staff and funds to track, analyse and utilise it. This is why organisations need to invest in the right network, which can allow for a historical and real time view of data and network behaviour.

Data can stretch the entire length of a workplace,

'To avoid connected devices becoming cybersecurity timebombs, businesses must ensure they have full visibility of all endpoints on their networks and get updates on their behaviour.'

through every meeting room to every social space. According to an EOCOM Time Utilization Survey, workspaces of all kinds are occupied just 42 per cent of the day. Sometimes it's not obvious when space is underutilised, which is why the value of businesses analysing their network data is critical to, for example, answer questions such as which conference rooms are used more often. So, if a business' IT team could monitor bandwidth day to day, it might identify patterns in data revealing that one conference room is being used more than others to then make more informed decisions when it comes to implementing planning changes to network capacity in that particular room.

The value in making decisions based on data not only ensures that workers receive fast and reliable connectivity to stay productive, but that businesses themselves are utilising their office space to the best of its ability. At the end of the day, they only want to pay for space being used.

MAKE OR BREAK

Tapping into and using network insights more constructively can make or break any business – even in the most normal of times. Right now, in a rapidly and ever changing market, it is vital that businesses base their decisions on real time facts. It is therefore critical that they not only invest in a modern network but one that also offers advanced data analytics to help secure their organisation and inform better decision making on a larger scale. ■

DAHWOOD AHMED

Dahwood Ahmed has over 25 years of experience providing wired, wireless and security solutions to the enterprise market. Joining Extreme Networks in 2011, Ahmed led the regional healthcare and public sector teams before being promoted to his current role as senior country manager UK&I. His key objective is to empower IT leaders and support them in driving efficiencies and business outcomes for their organisations.

Lincoln University goes on a learning curve with Extreme Networks

Lincoln University of Pennsylvania has deployed Extreme Networks' wireless access points and cloud network management solution to provide high-speed, Wi-Fi 6 connectivity throughout its 422 acre main campus and off-campus graduate centre. With increased capacity in all indoor and outdoor spaces, Lincoln University makes it easy for students, faculty and staff to connect with digital education resources anywhere and from any device.

ExtremeWireless high-density Wi-Fi 6 access points provide Lincoln University with a secure, wireless network that can support 3,000 users and 5,000 devices daily. Users have reported more reliable wireless connectivity that doesn't differ from building to building, and they are comfortable connecting through WPA2 authentication, which provides an additional layer of data security and increased protection from network threats. Since deployment, Lincoln University has seen improved student success and retention, even during the coronavirus pandemic.

STFC chooses Keysource to undertake pre-construction services for data centre upgrade

The Science & Technology Facilities Council (STFC) has chosen Keysource to undertake a pre-construction services contract for the data centre upgrade at its Daresbury Laboratory facility in Warrington. This will involve supporting the live operation upgrade of the data centre facility, which includes the lifecycle replacement of critical power, cooling and protection systems.

Under the terms of the deal, Keysource will be responsible for establishing a detailed brief and performance specification for stakeholder agreement and senior level approval. Preferred solutions will then be agreed to meet the brief including associated commercial, technical and delivery related risks and considerations. Finally, Keysource will produce a developed design and commercial information for the contract, and complete key enabling activities in preparation for the construction phase.

The agreed pre-construction approach will enable Keysource to collaborate with STFC to plan the works and mitigate risk to the high-performance computing load, which must remain available throughout. In addition, this approach to the project enables the agency drivers to complete it within a relatively short programme, with critical path activities to be agreed and executed providing a smooth transition into the delivery and commissioning phase.

IoT to bring cost savings and reduced carbon footprint for remote buildings across the Scottish Highlands

Schools, care homes, leisure centres and council offices are among those to be transformed into smart buildings, as part of a new £400,000 project between Highland Council and North.

The project will use Scotland's national IoT network, IoT Scotland, along with smart IoT sensors, to collect data and gain insights on Highland Council buildings including CO2 levels, temperature and humidity, ventilation, electricity consumption and light levels. The data will be used to reduce costs and carbon emissions, whilst improving the environment for young people, elderly care home residents, members of the local community and Highland Council staff.

North is delivering the project, with Highland Council able to self-install preconfigured IoT sensors to monitor and gather data on building and room usage. North has supplied its data enablement platform, which decodes, stores, visualises and shares information from the sensors. This provides Highland Council and its partners with a rich set of data, enabling them to better model building use, identify issues and deliver a more comfortable environment, whilst controlling costs.

PROJECTS & CONTRACTS IN BRIEF

Proximity Data Centres has been given the go-ahead for the multimillion pound construction of a new 5000ft² data hall, which will take its Nottingham site's total net technical space to 33,000ft² across six halls. With this, 1MW of additional IT load capacity is to be added to the facility's existing 4MW supply.

Virgin Media has installed prototype Infinera XR optics technology in its network. The new equipment plugs into the existing network and can reach transfer rates of up to 400Gb/s in a single fibre.

MLL Telecom has won a wide area network (WAN) contract from the Scottish Fire and Rescue Service (SFRS).

Mace Group has deployed RealWear's assisted reality wearable computers running voice enabled Microsoft Teams. RealWear's head mounted computers require only a single site inspector to be physically present, while multiple others view the site clearly and remotely from their own location via a streamed feed.

Acantho's data centre has been certified to the TIA-942 global quality benchmark for concurrent maintainability.

Panduit

Panduit's new Edge Clips are versatile, quick to install and securely attach directly to panel and frame edges. No drilling into the structure is required, maintaining the panel's integrity. This allows cables or wires to be routed along or perpendicular to the edge, as required by the application. Attachment is simple – press the clip directly on to the panel edge and use the accompanying cable tie for bundling.

Edge Clips can be installed without tools in around 11 seconds, with two variants for 0.7-3mm and 3-6mm thick edges. In addition, only a single Edge Clip is necessary for horizontal or vertical mounting, where alternative solutions require two different clips. This reduces the storage required and offers more flexibility when mounting on-site.

The saddle presses the cable tie firmly against the Edge Clip with no slippage, while the compact mounts ensure a secure fit, even if a cable is pulled through the fastener. The high-performance clips offer high-tensile strength due to their specially developed metal lips and can be attached by hand without tools.

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

Rittal

The TX CableNet from Rittal is intended for perfect cable routing with fast installation. The pre-assembled open frame design, with a pitch pattern for Rittal accessories, ensures speedy assembly and easy maintenance.

Simple insertion instead of laborious pulling is ensured by recesses with rounded edges on both sides and over the entire depth of the roof. The outer cable routing struts on the roof edges are easily removed, the complete cable harness is inserted and the struts are then securely hooked back in place again.

The range comprises eight variants. The enclosures are 800mm wide and available in heights of 2000mm (42U) and 2200mm (47U), and in depths of 800mm or 1000mm. The pre-assembled, freestanding frame construction increases the speed of installation and removal, as well as ensuring stability. System components are quickly positioned and affixed thanks to the profile, with its continuous 25mm pitch pattern and numbered hole pattern.

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

Siemon

Siemon's LightWays optical fibre routing system is a fully enclosed, flexible ducting system that is ideal for protecting, segregating and managing cables in data centres. Each component has been specifically designed to protect fibre cabling from dirt and dust, and to maintain proper bend radius.

Part of Siemon's WheelHouse range of advanced data centre solutions, LightWays comprises a wide variety of straight solid and slotted duct, elbows, tees, crosses, reducers and outlets. It features innovative toolless joiners that completely eliminate the need for any drilling, nuts, bolts or other tools to connect or disconnect components. The system's low profile Waterfall Outlet can be easily placed anywhere along the sidewall of straight sections to create vertical drop-offs with full bend radius control.

LightWays is available in 50x50mm, 100x100mm, 200x100mm and 300x100mm sizes. Strong enough to protect cables against the most rigorous conditions, LightWays is manufactured from halogen free, flame retardant yellow plastic and includes a variety of hardware accessories for mounting to existing overhead pathway systems, ceilings, cabinets, walls and beneath raised floors.

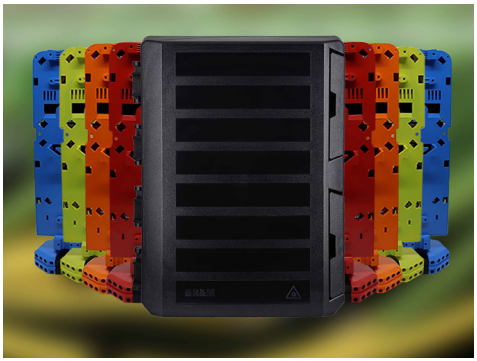
To find out more **CLICK HERE.**

www.siemon.com

R&M

Fibre to the home (FTTH) can be expanded in rural regions by using above ground cable laying. In addition to faster deployment, aerial solutions are more cost effective than underground cabling – less planning and personnel effort are required and existing infrastructure can be used.

With a development program for fibre optic aerial deployment products and solutions, R&M wants to help ensure that network operators make rapid progress in this area. The company is committed to making FTTH expansion easier and faster in rural as well as suburban areas.



R&M is offering an assembly technology that sets standards in terms of simplicity and flexibility. Robust, self-supporting high-durability fibre optic cables, pre-terminated customer connection cables, including optical connectors, and a new generation of FTTH distribution boxes, especially developed for aerial deployment, are important building blocks for above ground cable laying.

To find out more **CLICK HERE.**

rdm.com

HellermannTyton

At HellermannTyton, our products are made to connect. Made to connect networks, homes, businesses and people.

Our quality products are British designed and engineered, with the customer and the project at the forefront of our mind. Our purpose built facility in Northamptonshire allows us to be commercially agile and evolve with the changing demands of the network infrastructure.

Over the last 12 months we have been busy revising and refining our network connectivity product range. We discontinued our Category 5e product set in 2020 to allow us to focus on developing and delivering new products into our range of solutions. The new Category 6A jack and panel have already been launched, with more exciting new products just around the corner.

HellermannTyton

MADE TO CONNECT

We have also been able to focus on our packaging and, more importantly, our efforts to reduce single use plastic wherever and whenever possible.

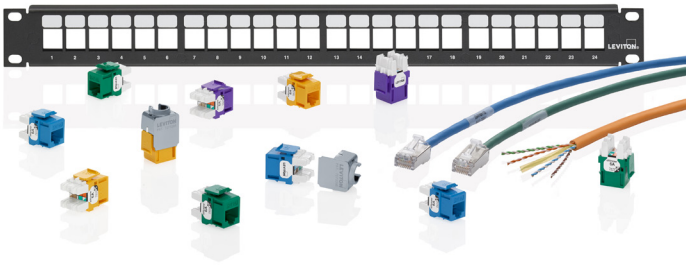
CLICK HERE to check out HellermannTyton's new Category 6A product solutions.

www.htdata.co.uk

Leviton

Leviton's eXtreme Category 5e, 6 and 6A systems of jacks, patch cords, patch panels and cable pair high-quality and guaranteed performance with a user friendly design to support fast, easy installations. With enhanced performance and system longevity, eXtreme copper systems can support an extensive range of enterprise networks, including wireless access points and smart building technologies, and deliver PoE up to 100W – exceeding industry standards.

With 13 colour options for greater network planning flexibility, Leviton eXtreme jacks contain innovative cutting ledge and pair separation towers, which simplify punchdown, reduce rework and support faster terminations. eXtreme connectivity also has patented Retention Force Technology, which protects against tine damage and increases system longevity.



CLICK HERE to learn more.
www.levitonemea.com

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Forward thinking

With network requirements hitting an all-time high, Steve Alexander of Ciena shares his thoughts about what the future holds

We have always known that network connectivity is critical to our daily lives but this has become even more true during the coronavirus pandemic. The network has not only empowered businesses to continue operations but has also played a tremendous support role in enabling us to stay connected with friends and family. Whether we are working remotely, playing video games, streaming the latest movie or learning remotely, the network plays a critical role in our lives.

OUR SURVEY SAYS...

It might not come as a surprise, but we are relying on the internet more than ever, with research from Ciena pointing to a significant 62 per cent rise in video calls and a 49 per cent increase in online TV services. With social distancing becoming the norm and many different restrictions taking place globally, there is growing pressure being placed on the network. So how will this affect investment, what new technologies will we see and what are the opportunities this presents?

With the need to meet the growing demand for faster and more reliable connectivity, we will see 5G continue to be a focus area. 5G networks are primed to deliver faster web browsing and video streaming with reduced latency – both very appealing for consumers. However, 5G can do so much more once networks have matured. Advanced 5G services like cloud gaming, telemedicine, Industry 4.0, and rich augmented and virtual reality (AR and VR) all require highly reliable networks that can deliver low latency, as well as higher bandwidth and enhanced levels of intelligence.

MEET AND GREET

It's safe to say that all of us have grown weary of online team meetings and Zoom fatigue has become a very real thing. Perhaps we will see more instances of AR and VR being used as collaboration tools, helping remote teams regain some of the 'live' element of working together. For example, during social distancing we have seen more companies use

this technology as a way to do site visits and see team members.

However, for these services to take off, networks must continue to get faster, closer and smarter, utilising automation intelligence and software to deliver on the hype. Part of building faster, closer and smarter networks is to build out the edge, where we need up to five times more data centres than are available today. There is already heavy investment in building out edge data centre sites to bring the cloud closer to users and this investment will continue.

SOFT SKILLS

Carriers know the demands that we are placing on networks show no signs of slowing as our lives become more digital and distributed. That means network rollout will continue at pace, but networks must now be built to adapt on their own. Carriers have already taken steps to make this happen, but we will start to see even more use of software and analytics to improve the way optical fibre networks function.

> 'A part of building faster, closer and smarter networks is to build out the edge, where we need up to five times more data centres than are available today.'

Advanced software capabilities will redefine how network providers engineer, operate and monetise their optical networks. These software solutions were originally focused on extracting more value from existing network assets but they will also play a key role in new network builds, giving communication service providers the ability to fine tune, control and dynamically adjust optical connectivity and capacity.

Software will also give greater visibility into the health of the network via real time link performance metrics and increased, end to end photonic layer automation. By utilising the latest advanced software solutions, providers can monitor and mine all available network assets to be able to instantly respond to new and unexpected bandwidth demands and allocate capacity across any path in real time – a function which will become increasingly important year on year.

DIGITAL INCLUSION

With more people relying on networks,

we will start to see more focus on digital inclusion and this will be key to continued remote working. Connectivity has proven vital for people to stay in touch, shop and work remotely to keep our economy moving. It has also been crucial to the continued education of students. There is a growing desire to maintain this flexibility even once restrictions are lifted, but this is only possible if you have the connectivity and capacity.

We are also going to see rural connectivity and digital inclusion initiatives move higher up the political agenda, with solutions like low orbit satellite connectivity given greater prominence.

The solution that maximises ultimate capacity is fibre based broadband, but we know this can be a challenge in rural areas, so it will require a nudge from policy makers to get things moving.

If countries want to stay at the forefront of the digital economy, they must break down the barriers to rural connectivity and invest in fixing the last mile problem. They must also continue supporting digital inclusion programmes that grant students access to technology and tools. Incentives and initiatives from governments, and an ongoing review to ensure that networks are using the most effective equipment suppliers, are certainly ways to help.

WORKING TOGETHER

It is fair to say that one of the biggest trends in recent times has been the partnerships that have been forged between telecoms carriers and some of the hyperscalers. However, as networks become increasingly more software centric there is an opportunity to improve the delivery of new services and applications to users.

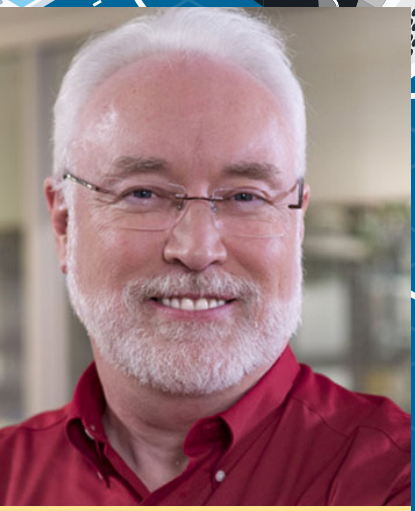
From the perspective of a WebScale operator, service provider networks often appear to be a patchwork quilt of various vendors and technologies. The

suite of internet protocols allows this complexity to be abstracted up to a set of globally uniform IP addresses and this has served us fantastically well. At the same time, service provider networks look largely opaque to the cloud and, consequently, it is hard to guarantee a user the cloud experience that is desired.

To deliver a next generation service more collaboration between cloud and network is required. Making the network adaptive through the use of intelligent software allows coordination between service provider networks and the cloud, and will enable a generation of AR and VR based immersive services and applications.

NEW POSSIBILITIES

Recent times have uncovered is just how critical the network is. Despite increased demand, we are set to uncover new possibilities as the network grows and becomes more automated and adaptable. ■



STEVE ALEXANDER

Steve Alexander is Ciena's senior vice president and chief technology officer. He has held a number of positions since joining the company in 1994 including general manager of Ciena's transport and switching and data networking business units, vice president of transport products and director of lightwave systems.

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