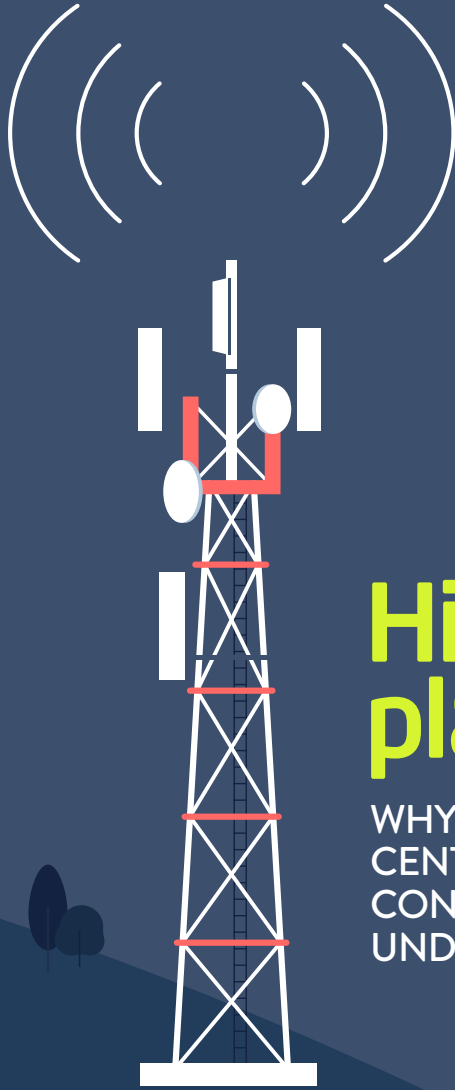


Inside Networks

THE NETWORK INFRASTRUCTURE E-M



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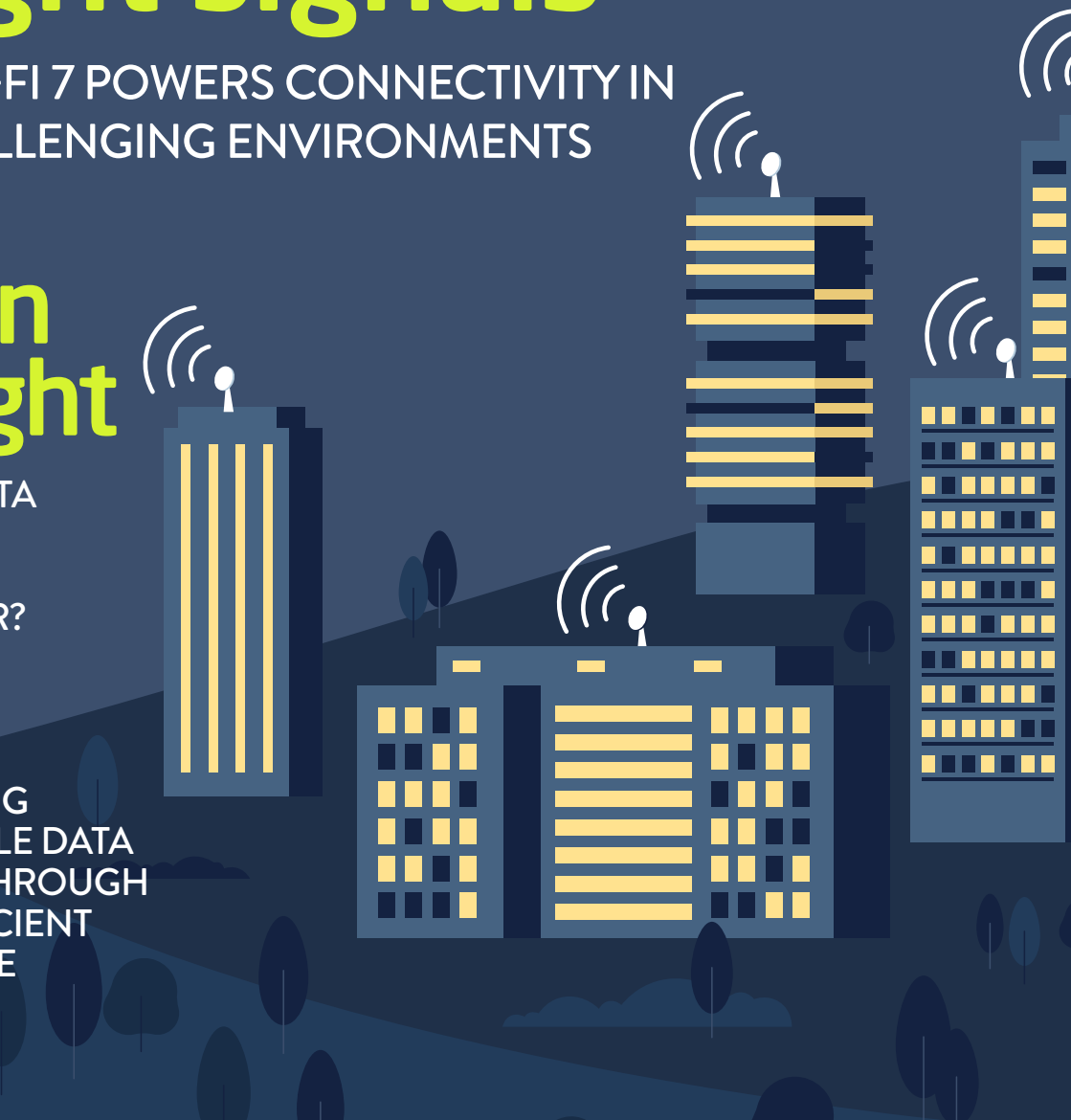
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Wi-Fi 7

Wi-Fi 7 IS HERE – BUT WHAT DOES THAT MEAN?

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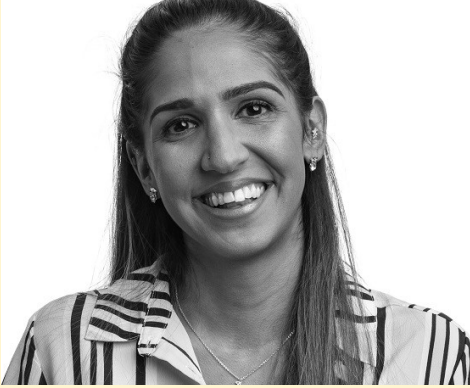
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Not so long ago, while chatting with a well renowned industry expert, he commented that given the reliance that everyone has on data centres, they somehow remain a mystery to pretty much anyone who doesn't work in the sector. While I agree with him, it got me thinking about the repercussions of this situation and whether the public really cares – or indeed if they should.

It also struck me that this lack of understanding about data centres is perhaps due to the sector's unwillingness to be more outward looking and promote itself effectively by stating its role in society. Given the skills shortage and potential the sector offers young people as a career, it also seems that we are missing a trick. To look at this in more depth Inside_Networks has assembled a panel of experts to assess what could be done to put data centres on the public's radar.

Also in this issue we have a feature on UPS and power distribution. Louis McGarry of Centiel examines the need to develop sustainable data centres for the future through more efficient energy use, while Carsten Ludwig of R&M examines data centre sustainability and resiliency in relation to UPS and power distribution technology.

They are joined by our second feature on wireless network infrastructures, where Stuart McKay of Panduit explains how to safely power 5G for in-building networks. He's followed by Mittal Parekh of Ruckus Networks, who explains how Wi-Fi 7 powers connectivity in challenging environments.

The use of power in data centres is something that I recently spoke about with Schneider Electric's Steven Carlini. He made some fascinating comments about a range of subjects, not least of all the impact of graphics processing units (GPUs) that are being used to train artificial intelligence on power usage. You can read my full interview with him in this issue.

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

Rob Shepherd

Editor





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ALET UTCs and partners recognised with fourth global award

Activate Learning Education Trust (ALET) University Technical Colleges (UTCs) and its partners received the Best Talent Developer award at the recent Data Centre World event in London. This was in recognition of the success the partnership has had in designing and launching the Digital Futures Programme (DFP).

Current students of the DFP, which is delivered as part of an engineering BTEC, attended Data Centre World and undertook challenges, aided by mentors from the industry organisations that support ALET in delivering the programme, such as Amazon Web Services,

CNet Training and CBRE. Students also had the privilege of speaking with Lord Kenneth Baker, a former education secretary and co-founder of the Baker Dearing Trust,

which created and champions UTCs.

Andrew Stevens, president and CEO at CNet Training, said, 'Everyone is continuing to work hard. We're expanding the

programme and more and more people are really seeing the benefit of what we are doing. We're spreading the message, we're investing in the community and helping social mobility. It's a wonderful project and I ask everyone to support it.'



North American data centre pricing nears record highs, driven by strong demand and limited availability

North American data centre pricing approached record levels in 2023, influenced by strong demand and power constraints that limit how much new capacity can be brought online, according to CBRE's latest North American Data Center Trend Report.

In 2023, national average asking prices rose to \$163.44 per kW/month from \$137.86 per kW/month (18.6 per cent year-over-year increase) and will likely achieve double digit growth again in 2024. Meanwhile, supply in the eight primary US



Pat Lynch

data centre markets grew by 26 per cent, totalling 5,174.1MW, and vacancy remained near a record low at 3.7 per cent.

'The US data centre market saw the largest pricing increase, which is a testament to the market's resiliency and impact of robust

requirements for available power,' said Pat Lynch, executive managing director for CBRE's Data Center Solutions. 'There is no sign that demand will slow down as the economy becomes more digital and artificial intelligence expands to new sectors.'

Schneider Electric collaborates with NVIDIA on designs for AI data centres

Schneider Electric and NVIDIA are collaborating to optimise data centre infrastructure and pave the way for ground-breaking advancements in edge artificial intelligence (AI) and digital twin technologies. The companies will introduce the first publicly available AI data centre reference designs to redefine the benchmarks for AI deployment and operation within data centre ecosystems.

Special focus will be on enabling high power distribution, liquid cooling systems and controls designed to ensure simple commissioning and reliable operations for the extreme



density cluster. Schneider Electric aims to provide data centre owners and operators with the tools and resources necessary to seamlessly integrate new and evolving AI solutions into their infrastructure.

Pankaj Sharma, executive vice president Secure Power Division & Data Centre Business at Schneider Electric, said, 'By combining our expertise, we're helping organisations to overcome data centre infrastructure limitations and unlock the full potential of AI. Our collaboration with NVIDIA paves the way for a more efficient, sustainable and transformative future.'

Colt research reveals optimism around tech investment as businesses look to IT for new revenue streams

Colt Technology Services has published research of over 1,000 IT leaders in 12 countries across the US, Europe and Asia, which revealed optimism in tech budgets as businesses invest in their IT infrastructure to deliver growth plans.

79 per cent expect to increase their tech budgets over the next 1-3 years, with IT leaders in Hong Kong (92 per cent), Singapore (89 per cent) and Japan (84 per cent) the most optimistic about budget growth. Improving security (40 per cent) and adding artificial intelligence and machine learning capabilities (31 per cent) top the list of priorities for investment. 20 per cent named 'understanding the environmental impact of their IT infrastructure' in their

top three priorities and 19 per cent named reducing the environmental impact of their IT infrastructure as a priority.

Buddy Bayer, chief operating officer at Colt Technology Services, said, 'The



way businesses think about digital infrastructure has fundamentally changed – it's now front and centre for generating growth and securing new revenue opportunities. The planned investment highlighted by our

research reflects this mindshift and it's heartening to see sustainability become a priority.'

AI, security and sustainability are the major drivers for IT modernisation

Nutanix's sixth global Enterprise Cloud Index (ECI) survey and research report has revealed the use of hybrid multicloud models is set to double over the next 1-3 years, as IT decision makers face pressure to modernise IT infrastructures because of artificial intelligence (AI), security and sustainability.

The report found that security and innovation were the top drivers for moving applications from one environment to another over the past year. As AI takes centre stage for businesses, respondents identified increasing investments to support AI strategy as their number one

priority, followed closely by investment in IT modernisation.



'IT organisations are facing ever-increasing pressure to modernise their IT infrastructure quickly,' said Lee Caswell, senior vice president product and solutions marketing at Nutanix. '80 per cent of respondents plan to invest in IT modernisation, with 85 per cent planning to increase their investments

specifically to support AI. What this year's ECI reveals is that organisations need to support the technologies of tomorrow by future proofing their IT infrastructure today.'

HireHigher expands its campaign to attract best student talent into the data centre industry

Following the success of its campaign last year to address the ongoing skills shortage in the digital infrastructure industry, HireHigher is this year bringing the industry's Rising Stars together with sixth form students from another seven schools across London, the South West and Wales.

Adelle Desouza set up the Rising Stars Programme as a talent development initiative that supports new professionals, helping to increase the value that employers place on young

people and increasing the data centre industry's talent pool to build a sustainable and successful future. Each event gives students the opportunity to either visit a data centre or facility that supports the industry and participate in a series of workshops and hear a panel of industry Rising Stars talk about their varied jobs and paths into the industry.

Desouza commented, 'We have the support of more data centre providers this year including CyrusOne, Virtus Data Centres and EnerSys. Together we are showcasing all the amazing careers and opportunities that exist

in our industry and the Rising Stars are helping bridge the knowledge gap between students and work.'



Cost concerns holding back UK sustainability strategies as data shows slow growth in green measurement

OVHcloud has found that 45 per cent of companies list cost as one of their main sustainability challenges. Its study surveyed 500 IT decision makers in the UK, with 31 per cent admitting that they either weren't sure or definitely wouldn't meet their own sustainability targets in the next two years.

Combined with the slowdown in measurement, the research indicates the possibility of a 'green plateau', as businesses are unable to maintain their sustainability momentum in the coming years. When quizzed about the focus areas of their



Gregory Lebourg

sustainability priorities over the next five years, 44 per cent were looking at recycling initiatives, with 41 per cent looking at optimising power usage. 29 per cent were examining the impact of minimising travel and fuel efficiency.

Gregory Lebourg, global environment director at OVHcloud, said, 'Given that many organisations are concerned about the price of sustainability initiatives, they should work to reframe these initiatives

in terms of their potential for long-term savings. When correctly articulated, sustainability can also be frugality, which helps to build a compelling case for return on investment.'

NEWS IN BRIEF

Equinix has announced a planned leadership transition effective late Q2 2024 whereby current president and CEO, Charles Meyers, will transition to the role of executive chairman, and Adaire Fox-Martin will begin serving as Equinix president and CEO.

CMC Networks has attained the Broad-Based Black Economic Empowerment (B-BBEE) Level 1 status in South Africa for the fourth consecutive year. B-BBEE is a policy introduced by the South African government to promote economic transformation and encourage the involvement of black people in the economy.

maincubes has signed a 10-year power purchase agreement (PPA) for pure solar power from Stadtwerke Göttingen.

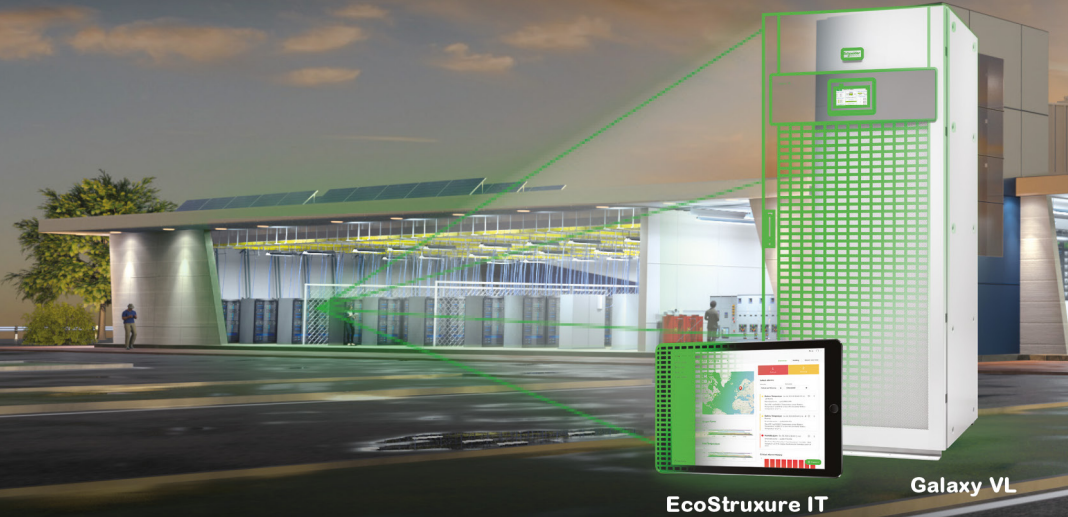
Alastair Revell has been announced as the new president of BCS, The Chartered Institute for IT. Revell has held senior volunteer roles in BCS for a decade and runs a successful professional services and IT consultancy firm.

Telehouse has contributed to digital inclusion in the local community by donating 40 laptops to a number of voluntary and community sector organisations in the London Borough of Tower Hamlets (LBTH).

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Hi Rob

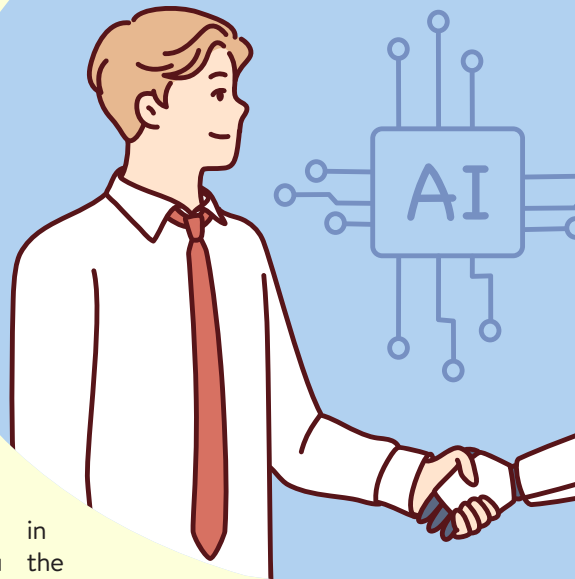
We all know there is a lot of hype around artificial intelligence (AI). It seems it can be applied to anything and everything and the sharpest minds are unveiling a new solution or AI enabled plug-in almost daily. But how can you cut through the rhetoric and start to evaluate how AI is being used to drive business productivity?

There's one area where smart technology and AI are being used to good effect and that is in creating an inclusive and energy efficient workspace. Combining smart conferencing technologies utilising embedded AI to create inclusive meeting experiences, intelligent networks acting as sensors and the internet of things (IoT), along with platforms to analyse this information, are enabling a workspace that is beneficial for the people using the space, driving efficiencies and delivering tangible environmental, social and governance (ESG) results.

Think about how you use your meeting rooms, huddle spaces and breakout areas. Deploying the right technologies into these spaces enables you to deliver an exceptional user experience, while capturing telemetry on the space, as well as environmental – temperature, air quality, humidity, etc – and occupancy statistics.

The user experience is paramount and it needs to be inclusive. By using AI embedded in the solutions and delivered via the cloud, you can ensure that

regardless of where a user is located, or how many people are in the meeting room, each person has a similar experience. Recognition of the people in the room and splitting the room into individual segments to enable each person to be at the same eye level, both



in the room and remotely, ensures that each user feels involved. Intelligent speaker tracking and background noise removal for all participants ensures that each user is actively involved and included in the meeting.

The same smart capabilities are also then used to drive better use of the space.

AI in the workspace?

Augmented by sensors within the network, intelligent cameras and traditional IoT sensors capture and stream information into a single platform for analysis and visualisation, so organisations can make informed and increasingly automated decisions about their office spaces.

For example, using footfall data generated from a wireless network, combined with visual people counting from CCTV cameras and meeting room solutions, means you can build an accurate picture not just of how busy your office is but also patterns of usage down to desk level. This allows you to predict future office use, enabling you to automate how a building is used on individual days.

This data is not just for control – it also enables you to make informed decisions on how you work. Presenting this information back to users through portals and interactive displays allows them to make their own choice on which of the available meeting rooms to use based on air quality

and temperature, or which location is quieter so they can focus better.

This can be extended further by moving more of the building infrastructure to use power over Ethernet (PoE). Shutting down switch ports based on the requirements of a particular space means you can keep wireless access points powered off until needed. PoE enabled lighting can be kept powered down, and the power to a desk can be restricted until required.

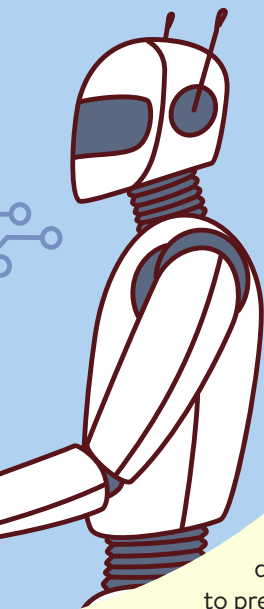
PoE is more efficient, so there are real energy savings to be made. Also, network cabling is cheaper to manufacture and deploy and has a lower environmental impact during manufacture – the cost and ESG benefits begin during installation.

Entry into the world of smart and inclusive buildings can be quick and simple. Smart technology and AI in workspaces and office buildings makes work more effective, sustainable and inclusive. It's a win for employee engagement and inclusivity, as well as sustainability.

Lee Gatland
Cision

Editor's comment

The Covid-19 pandemic induced need to work from home five days a week is certainly over and although many companies understand the value of hybrid working, the office is certainly back. As a result, technology is integral to creating a positive experience for employees returning to the physical workplace and, as Lee makes clear, smart technology and AI is key to making this happen.



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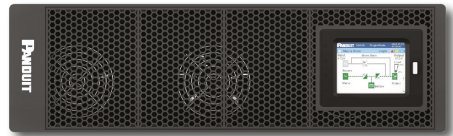
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Interest rate


Although we all rely on data centres, relatively few people outside of the industry have any idea what they are and what they do. [Inside_Networks](#) has assembled a panel of industry experts to examine whether it would benefit the sector if there were a better appreciation of data centres and how this could be achieved

▶ Ask any 'non-industry' person to describe a data centre and you might be surprised at the response you get – that's if you get one at all. In fact, amongst the general population there appears to be very little knowledge about what a data centre is, what it does and its role in modern life.

So long as they can use social media, send and receive emails, watch streaming services, access the internet and do their shopping online, people do have little interest in what allows them to do this. In fact, environmentalists are one of the few groups of people taking an interest in data centres – and they aren't particularly complementary as a rule.

With a well-publicised skills shortage and a distinct lack of diversity amongst those working in the sector, perhaps a wider appreciation of data centres could have significant benefits for all concerned. Let's face it, unless there's greater understanding about data centres, particularly amongst schoolchildren, the quickly diminishing pool of talent could soon dry up.

Inside_Networks has asked a panel of experts to describe how they think the public perceives the data centre sector and give us their opinions about how to enhance knowledge of these vital facilities.



HOW DO YOU THINK WIDER SOCIETY PERCEIVES THE DATA CENTRE SECTOR AND IS THERE ENOUGH UNDERSTANDING AMONGST THE GENERAL POPULATION ABOUT WHAT THEY ARE AND WHAT THEY DO? WHAT COULD BE DONE TO CREATE A BETTER APPRECIATION OF DATA CENTRES AND THEIR ROLE IN MODERN LIFE?

EMMA FRYER

DIRECTOR OF PUBLIC POLICY EUROPE AT CYRUSONE

Until we, as a sector, do a better job of explaining what data centres are and why we need them, this conceptual lacuna will persist. This lack of awareness seems paradoxical given the obvious importance of connectivity to citizens, businesses and government. The popular meme with Wi-Fi pasted under Maslow's Hierarchy of Needs illustrates perfectly just how completely we depend on the internet and the digital services it enables.

Despite this, there is a pervasive feeling that the internet somehow runs on magic rather than physics. Shouldn't it be obvious that industrial scale infrastructure is necessary to keep our online transactions secure, provide access to services when we need them and ensure our personal information remains personal? Clearly not.

So, what are we doing wrong? While it may not help that data centres are hidden away in anonymous buildings as though they don't exist, I think the problem is more nuanced. Whilst dependence on data centres has grown rapidly, this is not obvious to the end user and perhaps the absence – so far – of the type of major service failure occasionally seen in other utilities means that society has not been forced to

acknowledge our criticality.

I have three suggestions to help bridge this gap and they don't involve turning the lights off. Firstly, we should communicate

in a language that outsiders can understand. Sector jargon is a terrible handicap to communication – terms like cloud and white space don't shed much light on what we do. So, keep it simple.

Someone asked me about data centres the other day. I said they were like Shrek – they shun the limelight and aren't that easy on the eye but do a lot of heavy

lifting, especially when the chips are down.

Secondly, we should be more confident. This is the sector that managed its own risk so effectively during the Covid-19 pandemic that it kept the economy alive and collectively provided enough processing power to enable a vaccine to be developed in 10 months instead of 10 years.

Thirdly, repeat the first two.



'SOMEONE ASKED ME ABOUT DATA CENTRES THE OTHER DAY. I SAID THEY WERE LIKE SHREK – THEY SHUN THE LIMELIGHT AND AREN'T THAT EASY ON THE EYE BUT DO A LOT OF HEAVY LIFTING, ESPECIALLY WHEN THE CHIPS ARE DOWN.'

CARRIE GOETZ

PRINCIPAL AND CHIEF TECHNOLOGY OFFICER AT STRATEGITCOM

This question speaks to my passion for bringing more people into the industry and, I believe, is at the heart of our current talent predicament. If someone doesn't live in a data centre city, it's more than likely they don't know about data centres, and maybe not even then.

We are suffering from an identity problem. Let's face it, when was the last time the term data centre came up in casual conversation? Do we say our info goes to the data centre, or do we say it goes to the cloud? While most people are consumers of data centres, they don't know about them. They don't know that the cloud lives in a data centre.

When kids get exposed to technology in schools, it is often through coding. While these programs are great, the problem is that if students don't care for coding, they think the technology sector isn't for them. Most students don't realise the depth and breadth of opportunities within technology, starting with the trades. If it weren't for the trades, nothing would be built, energised, plumbed, cooled or able to communicate.

Beyond the trades, we have coders, administrators, operations personnel and various degreed professions. We should be adding data centres as a subject and to other classes. Schools are slow to move and the industry moves quickly, lending many to adopt apprenticeship and certification

programs.

The average person consumes technology but understands very little about their interactions. They know even less about the data centres serving their

apps and storing their secrets. The exception tends to be the data centre cluster cities where a NIMBY attitude seems to be on the rise.

The fact remains that data centres are everywhere and come in a wide range of sizes. We need to educate our consumers

better. Kids and adults alike should know that every known digitally documented thing lives in a data centre. Now, that seems like something to learn about! To that end, I have launched an educator's reference for data centre education and published a children's book about data centres – small steps, big goals.



'WE ARE SUFFERING FROM AN IDENTITY PROBLEM. LET'S FACE IT, WHEN WAS THE LAST TIME THE TERM DATA CENTRE CAME UP IN CASUAL CONVERSATION? DO WE SAY OUR INFO GOES TO THE DATA CENTRE, OR DO WE SAY IT GOES TO THE CLOUD?'

JOHN BOOTH

MANAGING DIRECTOR AT CARBON3IT

When it comes to how the data centre sector is perceived by the public, in a nutshell the answer is badly. People are riled up by media articles, TV programmes and the publishing of reports filled with spurious data. As a result, they think that data centres are coal-eating, fire breathing dragons gobbling up precious energy resources.

I recently attended the Data Centres Ireland event where we had environmental protestors outside the gates. This was widely covered in both the Irish press and the data centre trade media outlets. It became apparent that they had organised this protest using social media. In essence they were protesting about the very thing they had used to organise the protest.

I also recently delivered a data centre sustainability workshop for a coalition of environmental groups in Virginia, US. These groups were concerned about the scale and clustering effect of large data centres in Loudon County and adjoining counties, in particular, the actual environmental damage the data centres were causing to the air, water courses and visual and noise impacts.

Their primary concerns were over the expansion of data centres in Virginia and the plans that a utility company had to provide energy. These plans included new 500kV power lines and keeping fossil fuelled power

stations open, as well as building a brand-new gas fired power station. The consumers of energy were paying for the upgrades, not the data centre companies, and the utility

said that they are only building these new lines to service the data centre industry!

Education is the key – people must understand that the use of digital technologies results in digital infrastructure, and data centres are a key component of digital infrastructure. We should invite the media in and we should have ‘open

days’. We need to change the narrative.

We must recognise that we are, without doubt, in a climate emergency. We really need to raise our game and start to build cleaner, greener data centres. Our current approach, what I describe as tinkering, must stop, otherwise we will see the protests getting louder, planning permission being refused and the stagnation of our industry. Perhaps the bubble is getting close to bursting.



‘EDUCATION IS THE KEY – PEOPLE MUST UNDERSTAND THAT THE USE OF DIGITAL TECHNOLOGIES RESULTS IN DIGITAL INFRASTRUCTURE, AND DATA CENTRES ARE A KEY COMPONENT OF DIGITAL INFRASTRUCTURE.’



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ROB STONEHOUSE

APPRENTICESHIP MANAGER AT CNET TRAINING

Working in the industry and being fully submerged in it on a daily basis, I'm surrounded by experts who know and appreciate the intimate details of data centres. Wanting to discover what exposure the general public has to the sector, I Googled the latest mainstream news stories about data centres and found a trend.

The three most recent headlines related to data centres were as follows – 'Power grab: the hidden costs of Ireland's data centre boom' (The Guardian), 'Future data centres may have built-in nuclear reactors' (BBC News), 'Data centres curbed as pressure grows on electricity grids' (Financial Times). Based on this snapshot, there's a concern that wider society's knowledge of data centres could be that they're power-hungry beasts to be wary of.

My professional role centres around working with network cable installation apprentices and employers to equip people with the skills they need to succeed in careers in the industry. This is something that I'm very passionate about, as there are so many opportunities there for the taking. However, even some of the apprentices who walk through our doors are not fully aware of what a data centre is, what it does, or how crucial it is in facilitating our present day, digitally connected world.

So, what can be done to address the

lack of awareness? Would a public service announcement be too radical an idea? I'm only half joking. We desperately need to see and hear more good news about the sector, and its opportunities, being broadcast on a wider society scale to ensure that awareness is increased swiftly and for the right reasons.

This falls on all our shoulders as we're 'the people in the know'. So let's talk about it, frequently, to anyone and everyone who will listen. Everyone working in the data centre

sector needs to be an advocate for the digital infrastructure industry as a whole and encourage others to do the same.

Don't be shy – shout about the successes and experiences that you and your colleagues are having so that your network of colleagues, friends and family can share them further. Only together will we make enough noise to be heard.



'EVERYONE WORKING IN THE DATA CENTRE SECTOR NEEDS TO BE AN ADVOCATE FOR THE DIGITAL INFRASTRUCTURE INDUSTRY AS A WHOLE AND ENCOURAGE OTHERS TO DO THE SAME.'

MARK ACTON

HEAD OF TECHNICAL DUE DILIGENCE AT FUTURE-TECH

The data centre sector faces frequent and repeated criticism for high levels of power consumption, and this has created a very negative perception within the general population. The issue we continually face though is that power consumption figures are often sensationalised and over reported.

Data centre electricity power consumption is often incorrectly quoted as being three per cent of annual global electricity production. This figure relates to digital infrastructure in total including network transmission. Data centres alone are estimated to have consumed around 1-1.5 per cent in 2020.

Communications networks alone were also 1-1.5 per cent in 2020 and ICT in total, including end user devices, was 4-6 per cent.

In addition to the power consumption figures for data centres being inflated, we have a habit, as a sector, of targeting the wrong elements within the data centre. Consequently, we are shooting ourselves in the foot when it comes to the media.

Let's get it straight, data centre buildings do not consume power. They merely add an overhead to the power consumed by the IT equipment they host. If we continue to focus on the building rather than the IT load, we will never truly improve energy efficiency and will always be the fall guy for power consumption by others.



The general population needs to understand that data centres are not merely consuming power for the sake of it. The real consumers are the end users of ICT

services – that means all of us. Data centre power consumption is ultimately driven by the digital services we choose to consume both as a society and as individuals.

As a sector we need to do far less finger pointing amongst ourselves, far less misrepresentation of the facts, attribute far less blame to the buildings and do a far better job of communicating where the power is

really consumed. We need to educate and make sure that the general population fully understands the impact of using online services of any kind and, in particular, the energy and environmental consequences of the digital services they choose to consume.

'AS A SECTOR WE NEED TO DO FAR LESS FINGER POINTING AMONGST OURSELVES, FAR LESS MISREPRESENTATION OF THE FACTS, ATTRIBUTE FAR LESS BLAME TO THE BUILDINGS AND DO A FAR BETTER JOB OF COMMUNICATING WHERE THE POWER IS REALLY CONSUMED.'

JAMES CARMILLET

DIRECTOR OF COST MANAGEMENT AT BCS

Society views the data centre sector as mysterious and unfamiliar! Whilst most of the population will have heard of data centres, they don't really understand what they do, or how they operate. When I speak to industry professionals in other sectors, they even struggle to comprehend the sheer scale of data centres.

People need to understand that most of our daily activities are powered by data centres. They are the backbone of our digital infrastructure and, as the demand for efficient and secure data management continues to grow, we need to educate the public about their significance to change the perception of the industry.

Creating a better appreciation of data centres and their role in modern life comes down to education and public awareness. We need to educate people about the importance of data centres using informative content that is accessible for all and shared through various media channels. If we work with the media, we can increase the coverage of data centres and their significance in today's society with interviews, articles and maybe even documentaries.

We need more partnerships with educational institutions to integrate data centres into curriculums through workshops, guest lectures and career sessions, and hold open house tours of empty facilities so that the public and

can obtain a better understanding. There needs to be more access to online learning explaining the inner workings of data centres, using simplified language that everyone can understand.

Data centres make a huge economic contribution to local communities and national economies through job creation, tax revenue and development investments – and yet we don't share this publicly. We also need to better promote the environmental initiatives that the industry is pioneering such as renewable energy efficient

cooling, and the recycling of waste heat.

Events and conferences often come with a huge price tag. If we made some accessible for all, this would be a great opportunity to educate attendees and encourage more interest in careers in the industry.



'PEOPLE NEED TO UNDERSTAND THAT MOST OF OUR DAILY ACTIVITIES ARE POWERED BY DATA CENTRES. THEY ARE THE BACKBONE OF OUR DIGITAL INFRASTRUCTURE AND, AS THE DEMAND FOR EFFICIENT AND SECURE DATA MANAGEMENT CONTINUES TO GROW, WE NEED TO EDUCATE THE PUBLIC ABOUT THEIR SIGNIFICANCE TO CHANGE THE PERCEPTION OF THE INDUSTRY!'



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FTTA and PTTA Solutions for the 5G era

The easy, fast, cost-effective way to create end-to-end 5G cell tower connections. The integrated CONEXIO range brings site and operator-specific infrastructure system solutions for 5G and mobile communications within reach.



Vantage Data Centers names two new regional presidents to support market growth amidst booming cloud and AI demand

Vantage Data Centers has appointed Dana Adams and David Howson, who will serve as regional presidents of North America and EMEA, respectively. The company has also announced that Antoine Boniface, who has served as president of EMEA for the past four years, will take on a new role as chief commercial officer for EMEA. These appointments come as the company is positioned for another year of significant growth and expansion across the globe.

‘The additions of Dana and David come at a pivotal time for Vantage as we continue to scale our



Sureel Choksi

leadership team to keep pace with our customers’ exponential growth driven by cloud and artificial intelligence services globally,’ said Sureel Choksi, president and CEO at Vantage Data Centers. ‘In addition, we are excited for Antoine to become our first chief commercial officer in EMEA. He has been fundamental to our success in the region, and this new

role plays to his strengths and passion for serving our customers.’

Former data centre entrepreneurs join fight against e-waste

Network 2 Supplies (n2s) has appointed Simon Taylor as chairman, while Nick Razey has been appointed chairman of n2s’s Cambridge based sister company, Bioscope Technologies.

Taylor and Razey are significant investors in both companies and have a proven track-record in successfully launching and scaling businesses in the data centre and telecom industries. They founded Next

Generation Data in 2008, which grew to become Europe’s largest data centre and was sold for \$800m in 2020.

Simon Taylor commented, ‘n2s’s zero waste approach to addressing the tech sector’s exponential e-waste challenges offers a truly world class circular recycling solution to large consumers of business IT equipment. The significant market potential for the business is underlined by the tripling of sales turnover in the last three years and a growing blue chip client list.’



Simon Taylor

Kao Data appoints Kalay Moodley as new chief people officer

Kao Data has appointed Kalay Moodley as its new chief people officer (CPO). A highly experienced human resources (HR) director, with a track record for developing and executing strategic initiatives to accelerate commercial success, she has worked in the technology, digital infrastructure and healthcare sectors.

Moodley joins Kao Data from Digital Realty, where she led a team responsible for spearheading its recruitment strategy. As Kao Data's new CPO, she will be responsible for leading Kao Data's HR function, embedding new operational frameworks and change management strategies, and harmonising both the company's talent acquisition and



recruitment processes to underpin its strategic growth ambitions. She will also continue to deliver Kao Data's mission to build a more diverse, equitable and inclusive workforce, and nurture new pathways for female engineers.

Moodley commented, 'Kao Data has developed an exceptional reputation for sustainability leadership, and its culture, its vision and the strength of its people were all integral in my

decision to join. I'm delighted to work with its senior leadership team as we embark on a new phase of growth, where diverse talent, industry leadership and sustainable innovation remain at the heart of the business.'

EfficiencyIT establishes partnership with EkkoSense to accelerate data centre sustainability

EfficiencyIT has partnered with EkkoSense and is the latest member of the EkkoNet Global Partners – a network of specialist consultancies proficient in data centre design and build, maintenance and optimisation services, and critical facility operations.

Through the partnership, both new and existing customers will benefit from EfficiencyIT's consultative approach including its preventative and condition-based maintenance service support. This is coupled with the ability to utilise



EkkoSense's EkkoSoft Critical software to monitor, analyse and optimise their data centre energy costs.

'It's great that EfficiencyIT is adding EkkoSense's data centre performance optimisation software to its solutions portfolio,' said Venessa

Moffat, channel partner manager EMEA at EkkoSense. 'Our software is particularly easy to use and provides true real-time visibility of cooling, power and capacity performance.'

Mayflex enhances its Central Distribution Centre with automation

Mayflex has enhanced its Central Distribution Centre (CDC) at its Birmingham headquarters with the addition of Autostore from Swisslog. Technology in distribution has significantly moved on and with the company's investment in Autostore and the introduction of 14 Maybot robots, it can enhance its service levels further.

Sam Baldwin, operations and services director at Mayflex, commented, 'Our



accuracy rate is already high at 99.93 per cent but our aim is to achieve 99.96 per cent. That doesn't sound much but over a year it equates to a large number. To ensure maximum quality, the system is designed to only deliver the product required,

followed by every item being scanned by our Cognex scanners. The whole process will be far quicker to process orders, which will be particularly useful for customers ordering at the trade counter, or for same day despatch requirements.'

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Inside Networks

2024 CHARITY GOLF DAY 22ND MAY

An opportunity to compete and entertain clients and colleagues at the superb Marriot Hanbury Manor Hotel & Country Club, in aid of Macmillan Cancer Support

This prestigious golf course was the first to be designed by Jack Nicklaus II and still incorporates features from an earlier 9-hole course designed by the great Harry Vardon. The course is now widely recognised as one of the best in England.

The event will ask for 4-ball teams to compete in a 'best 2 from 4' full handicap Stableford competition over 18 holes (with a 2-tee start from 10:30am).

Live Scoring sponsorship is available.

Golf will be preceded by tea, coffee and bacon rolls at registration and will be followed by a 3-course private dinner and prize giving with charity raffle.

There will also be opportunities for sponsorship of all aspects of the day – all raising money for Macmillan Cancer Support – since 2005 this industry event has raised just under £100,000 through our charity golf events!

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CANCER SUPPORT**

For more information:

- ☎ 07769696976
- ✉ info@slicegolf.co.uk
- 🌐 insidenetworkscharitygolf.com

The cost of a 4-ball team will be £790 (+VAT).

Discounted accommodation is available at Hanbury Manor Hotel & Country Club, which will include breakfast and use of the extensive leisure facilities. www.marriottgolf.co.uk/club/hanbury-manor

Teams are invited to provide a raffle/auction prize.

Organised by:



Promoted & Supported by:



Mary Ellen Grom to lead Women in Manufacturing Education Foundation board

Mary Ellen Grom, executive director of customer experience solutions at AFL, has been appointed chair of the Women in Manufacturing Education Foundation (WiMEF) national board of directors. WiMEF is dedicated to developing and supporting powerful programs and resources that advance women in the manufacturing workforce.

‘Now is the time for us to continue creating impactful change through education and learning programs that advance the development of women in manufacturing,’ Grom stated. ‘I am privileged to have the support of a diverse, creative tribe of women in industry at AFL. The sky is the limit on opportunities



Mary Ellen Grom

ahead for all of us.’

With more than 25 years of experience in the IT channel marketing industry, Grom joined AFL in 2017 to lead the company’s marketing communications efforts. In 2021, she added customer service, inside sales and order entry teams to her commercial

portfolio. Grom has also been instrumental in the creation and development of AFL’s employee resource group, Women Everywhere Connect (WeCONNECT), which celebrates and empowers women pursuing careers in manufacturing.

CHANNEL UPDATE IN BRIEF


Zayo Group is doubling down on its commitment to network excellence with the appointment of Nikos Katinakis as chief technology officer. With a keen focus on harnessing the potential of artificial intelligence and automation, his leadership will bring substantial enhancements in both service delivery and network operations.

Axis Communications has been certified by Great Place to Work following a survey undertaken by 96 per cent of its employees in 2023. The research into employee satisfaction was conducted across 32 countries that comprise its EMEA-wide business.

Hiren Vaghela has been appointed as the latest member of nLighten’s UK sales team. In his role as account director, he will be responsible for managing and growing key customer account relationships.

Westermo has continued its expansion in Europe by opening its first office in Denmark. From its new base in Copenhagen, Westermo will provide local support for companies in the key energy, rail, water and wastewater, and maritime sectors that are looking to implement industrial network solutions. Kenneth Olsen becomes the company’s inaugural key account manager for business in Denmark and Örjan Axelsson has been named managing director of Westermo Denmark.

Centiel – solving tomorrow's challenges today

 Centiel is a technology company that solves problems. We use our many years of technical experience and expertise to address challenges within the critical power protection industry.

The current problem the data centre sector has is that it needs to build, and build quickly, to meet the demand from a society increasingly reliant on online interaction and, therefore, data storage. However, due to rising costs and the environmental energy crisis, we know that the infrastructure put in now will need to move over to renewable sources of energy in the not-too-distant future in order to minimise carbon footprints.

Having recognised this issue, Centiel has spent the past four years developing a sustainable uninterruptible power supply (UPS) to support data centres on their path to net zero. The result is StratusPower – a three phase, true modular UPS that offers nine nines (99.999999 per cent) availability to effectively eliminate system downtime, class leading 97.1 per cent online efficiency to minimise running costs, true hot swap modules to eliminate human error in operation – but

also includes long-life components to improve sustainability.

Uniquely, StratusPower has been designed with hardware to accept multiple inputs of different types of power source, such as renewables. We see StratusPower as an 'energy hub' where energy can be taken from anywhere and used or stored as part of the UPS to power critical components within the data centre site.

Currently, mains AC power is rectified to a DC bus and used to charge batteries and provide an input to an inverter. In the future, the DC bus

will be supplied from mains power and renewable sources such as wind, wave or solar energy. At night when there is no sun and the wind has dropped, the system is flexible enough to use a mains power input.

Uniquely, StratusPower has a 30-year design life. It is also scalable, so will always be the 'right size' for the critical load over the entire lifetime of the data centre, making it a far more sustainable option than other UPS on the market.

We know renewable energy is coming and this technology has already been designed into StratusPower. We are renewable ready – are you?

CLICK HERE for further information about Centiel or to send an email **CLICK HERE.**

www.centiel.co.uk



On the crest of a wave

Stuart McKay of Panduit explains how to safely power 5G for in-building networks

▶ Creating wireless networks with high bandwidth and speed of access, especially as 5G rolls out, is essential. There are two key factors to delivering 5G within buildings. One is that 5G is power hungry and the other is that a building's construction can reduce signal penetration into and around the interior and requires a distributed antenna system (DAS) to support the network. Therefore, building operators need to change their thinking on structured cabling to support the latest 5G technology.

SINGLE LIFE

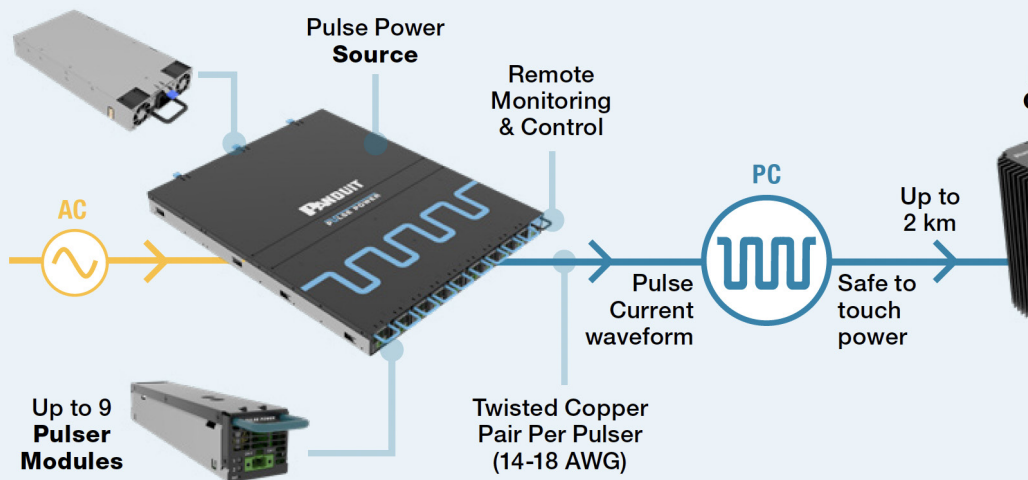
Increasing in-building deployment of 5G requires the capability to support many internal wireless devices and connected equipment in a seamless and simple to install and maintain structured architecture. To maximise data reach, most, if not all, 5G radios today take singlemode optical fibre, which maximises bandwidth.

Therefore, building operators need to be running singlemode fibre in their buildings. The challenge is how to power those radios. Traditionally, building operators have the

Hot-Swappable Components
Modular Plug and Play Installation

Deliver Power Up to 2 km Away
Up to 600 W Per Copper Pair

Up to 3 Power
Supply Modules



ave

option of using local power or using Class 2 power, which is limited in the amount of power and distance reached per pair of copper.

‘Fault managed power is an important enabler for 5G, PoE and smart buildings. Building operators can have a pulse power backbone in a building to power all the PoE switches that provide power and Ethernet connectivity for end devices.’

FINDING FAULT

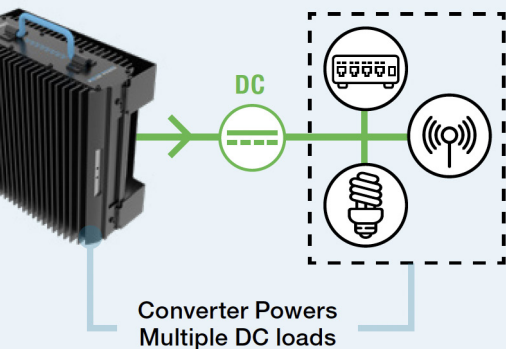
Today, fault managed power systems offer an alternative method of power to these essential communications devices. This category of power source equipment allows the building operator to introduce

a new level of benefits to the intelligent cabling infrastructure that will support 5G deployment. This includes converting standard AC to high voltage DC power, which is transformed into a pulse current waveform across the network. Delivered over standard multiconductor cable, each pulse provides safe end-to-end power delivery up to 2km, with end point waveform conversion to 48VDC to power multiple devices.

A major benefit of pulse power technology is that any break or shorting of the cable is automatically detected and, due to its pulse waveform, the system shuts down power within milliseconds to eliminate risk of electrocution. As a centralised technology, it allows for effective battery back-up to ensure networked internet of things (IoT) devices have hierarchical sequenced shutdown in case of power outages.

Power Multiple DC Loads (No Limit on Number of Devices)

Pulse Power
Converter(s)



LIGHT WORK

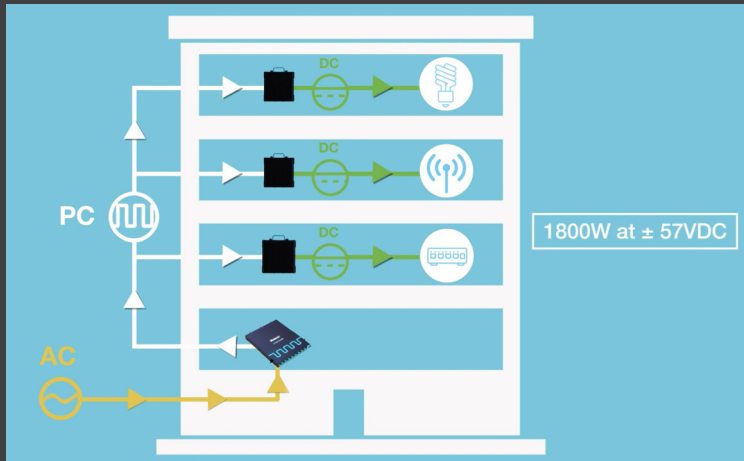
5G is expanding the connectivity capability of every application that uses it to transmit and receive data. Therefore, 5G will expand the use of fibre optic cabling for in building data bandwidth requirements. Moreover, pulse power technology allows for cheaper cabling, such as small diameter

‘A major benefit of pulse power technology is that any break or shorting of the cable is automatically detected and, due to its pulse waveform, the system shuts down power within milliseconds to eliminate risk of electrocution. As a centralised technology, it allows for effective battery back-up, to ensure networked IoT devices have hierarchical sequenced shutdown in case of power outages.’

underground facilities need a safe electrical power source and pulse power delivers this. It is expected that the expansion of 5G will drive the marketplace as new applications come to market.

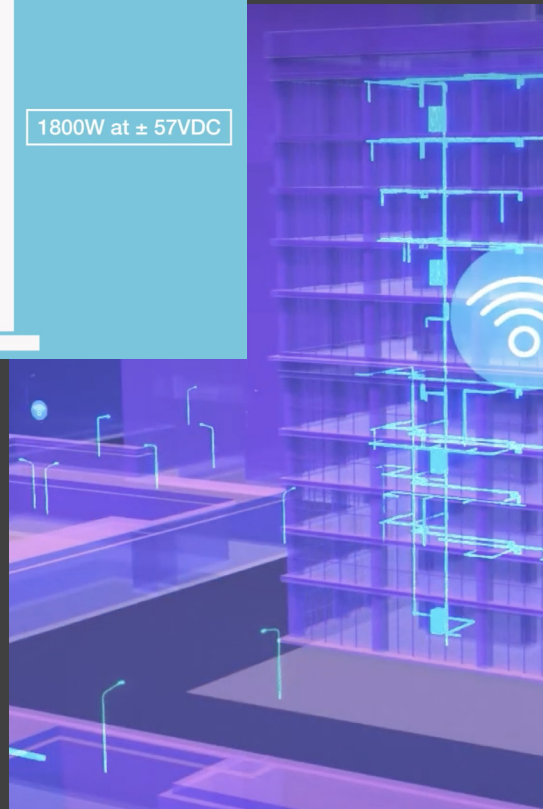
Fault managed power is an important enabler for 5G, power over Ethernet (PoE) and smart buildings.

Building operators can have a pulse power



18AWG single pair copper cable, to be utilised in a 5G network to provide power requirements, similar to the less flexible hybrid fibre optic solutions.

Optical fibre is a well understood technology platform, therefore it is expected to be a consideration in increasing numbers of intelligent infrastructure plans. Likewise, pulse power’s capability to deliver fault managed power to multiple devices is, and will be, an alternative solution to the AC hybrid fibre solution. Applications, such as tunnels and

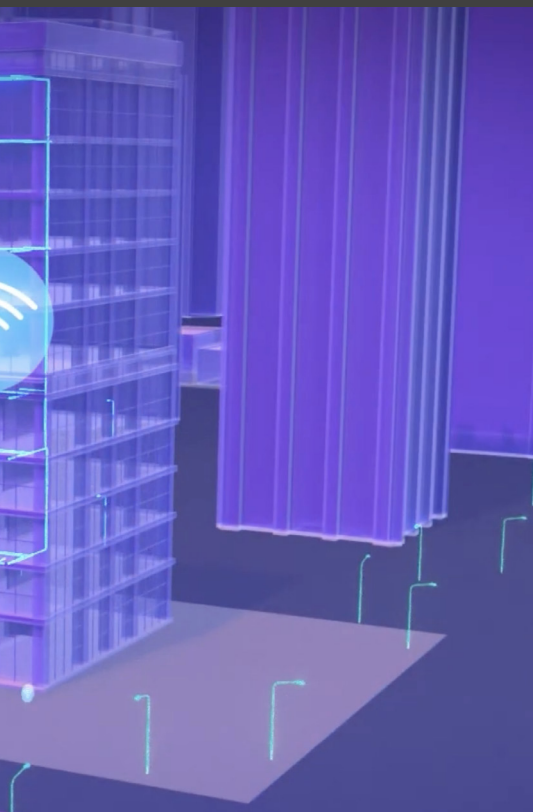


backbone in a building to power all the PoE switches that provide power and Ethernet connectivity for end devices.

CAUSE AND EFFECT

For data centres to continue to drive down costs and find efficiencies to reduce their CO2 emissions and improve their sustainability, increased data capture is essential and 5G is an important technology in continuous remote data collection. Gartner predicts that by 2028 there will be over four billion connected IoT devices in commercial buildings, with 5G at the forefront of data capture. Technologies such as pulse power create efficient network platforms for 5G in data centres, enterprises and large facilities. They add

capabilities to the intelligent infrastructure and increase the underlying benefits to the operators and its customers by delivering power and data efficiently, safely and securely. ■



STUART MCKAY

Stuart McKay is a highly experienced business development manager for Panduit EMEA, defining and implementing sales strategy within the enterprise market segment. He has demonstrable expertise in the electrical and electronic manufacturing industry, and is skilled in enterprise and data centre infrastructure implementation. McKay is the author of several white papers on intelligent building and PoE infrastructure.

NetAlly

NetAlly's innovative network test solutions have been helping wireless engineers and technicians better, deploy, manage, maintain and secure complex wired and Wi-Fi networks for decades.

For more than 25 years, we have been the number one ally of network and security professionals worldwide. We began by making the world's first handheld network analyser – the LANMeter – and have continued as industry pacesetters ever since. NetAlly continues to set the standard for portable network testing and assessment, and our best-in-class tools



deliver the visibility needed to get the job done – fast.

AirCheck G3 Pro is a powerful wireless site survey and Wi-Fi 6/6E diagnostic tool that helps engineers and technicians to quickly deploy, maintain, monitor, analyse and secure Wi-Fi and Bluetooth/BLE access networks. Meanwhile, the LinkRunner AT network and cable

tester validates copper and optical fibre Ethernet connections in less than 10 seconds.

To find out more [CLICK HERE](#).
www.netally.com

R&M

R&M's CONEXIO range offers fibre to the antenna (FTTA) and power to the antenna (PTTA) solutions for the 5G era.

The integrated product family brings site and operator specific infrastructure system solutions for 5G and mobile communications within reach. They are an easy, fast, cost-effective way to create end to end 5G cell tower connections. [CLICK HERE](#) to find out more about CONEXIO.

R&M's HEC harsh environment connector is developed for fibre optic connection of 5G and mobile



communication antennas in the harshest outdoor applications. The HEC-BR and HEC-QR withstand extreme temperatures,

vibrations, salt spray, dirt and moisture – providing lasting connectivity anywhere. [CLICK HERE](#) to find out more about HEC.

Furthermore, the SYNO dome closure, with innovative gel cold sealing and variable cable entries, offers great

freedom in accommodating specific site conditions and requirements quickly and cost effectively. [CLICK HERE](#) to find out more about SYNO.

www.rdm.com

Allied Telesis

The Allied Telesis TQ6702 GEN2-R wireless access point router combines enterprise class Wi-Fi 6 (IEEE 802.11ax) with secure virtual private network (VPN) routing for an innovative LAN and WAN solution. It facilitates a simple, powerful and secure wireless network for small businesses or enterprises with multiple locations.

The TQ6702 GEN2-R is an ideal solution for multi-tenant offices and premises, as well as distributed retail and hospitality locations where businesses can fully automate and manage their own or customer networks. This is achieved remotely using Vista Manager, Allied Telesis's management platform for rapid installation and automated network monitoring.

The TQ6702 GEN2-R includes:

- New user authentication with captive

portal.

- Zone based firewalling.
- IPSec site to site VPNs that connect branch locations to head office, while SSL/TLS remote worker VPNs allow secure access to digital business resources.
- All units automatically back-up using AMF Plus network automation, allowing plug and play replacement, and simplified visual management on Vista Manager's network map.

To find out more [CLICK HERE](#).

www.alliedtelesis.com



Mayflex

Reyee from Ruijie provides a comprehensive range of wired and wireless devices aimed at small to medium sized businesses. The Reyee wireless range includes access points to be mounted in the ceiling, wall-mounted or outdoors in a choice of Wi-Fi 7 (ceiling only), Wi-Fi 6 and Wi-Fi 5, together with a range of accessories.

These high value products provide superior cloud-based services powered by big data and artificial intelligence-based technology. What's more, their cloud platform is free for life – meaning

no further subscriptions or licences are required.

Mayflex is a value added distributor for

Ruijie and Reyee in the UK, and carries large stocks available for next day free delivery to the UK mainland. Talk to our experienced and knowledgeable

team on 0800 757565, [CLICK HERE](#) to send an email, or for more information on the full range of products available [CLICK HERE](#).

www.mayflex.com




Lucky number seven

▶ Wi-Fi 7 is here and it promises faster speeds, lower latency, increased reliability and the ability to manage more connections than ever before. Building on Wi-Fi 6 and Wi-Fi 6E, this advance comes at an opportune time – when businesses are not just demanding, but expecting, much higher capacity and performance from their connectivity solutions. But with some enterprises only recently making the upgrade to Wi-Fi 6, how will this next advancement upgrade from its predecessor, and how will Wi-Fi 7 create business value in practice?

WHAT IS IT?

Wi-Fi 7 delivers some huge advancements in Wi-Fi capability and performance, making it the most performant, reliable and secure Wi-Fi experience for even the most demanding applications. It makes use of the increase in wireless capacity made possible by the new 6GHz band.

While this additional radio resource was used in Wi-Fi 6E, Wi-Fi 7 fully takes advantage of it and will offer an even more powerful experience. Wi-Fi 7 could offer speeds up to four times faster than Wi-Fi 6, making it ideal for applications like high-quality video streaming, gaming,



Mittal Parekh of Ruckus Networks explains how Wi-Fi 7 powers connectivity in challenging environments

augmented reality (AR), virtual reality (VR), smart homes, remote work and more. With accelerated connectivity, high reliability, wired-like responsiveness, enhanced privacy and strong interoperability, Wi-Fi 7 has the potential to transform user experiences – both in home and business networks.

SIXES AND SEVENS

There are several key benefits when considering the jump from Wi-Fi 6 to Wi-Fi 7. The first and most obvious benefit is speed – the maximum speed of Wi-Fi 6 is 9.6Gb/s, while Wi-

Fi 7 delivers up to 46Gb/s, all for a single client. The second difference is in channel widths. The maximum channel bandwidth in the 5GHz band was 160MHz wide, while the new spectrum in the 6GHz band will increase to a channel width to 320MHz. This increase is even more impressive when you consider that the entire 2.4GHz band is only 83MHz wide.

In practice, this means significantly higher Wi-Fi data rates, which is critical considering how the demand for bandwidth intensive applications and services is growing. With a wider channel, data can also be transmitted and received faster, which reduces latency in the network.

Lowering latency is important for applications like streaming, video conferencing and online gaming, as the user experience relies on it.

FOUR TO THE FLOOR

Another major step-up from Wi-Fi 6 to Wi-Fi 7 is the increase in quadrature amplitude modulation (QAM), the technique of encoding data on a radio signal. The higher the QAM, the more information that can be transmitted for a given amount of radio resource, resulting in higher throughput.

Wi-Fi 7 delivers 4K QAM, which offers around 20 per cent more throughput than

Wi-Fi 6/6E at 1K QAM. 4K QAM can also be used with other lower QAM schemes, adapting to differing channel conditions by switching between modulation levels. This offers more flexible use of available resources and frequency bands, which is invaluable when experiencing high demand.

The final benefit is the use of multi-link operation (MLO), which allows for the aggregation of multiple frequency bands. Wi-Fi 7 MLO enables devices to simultaneously use 2.4GHz, 5GHz and 6GHz bands to improve speed and lower latency. MLO also minimises service interruptions, boosts reliability and reduces latency by maintaining connection – even if one band becomes congested or experiences interference.

As with any technology, there are considerations to make before diving into Wi-Fi 7. To achieve these dramatically faster rates, businesses need the budget, the people and the infrastructure to support it. Before embarking on adoption, organisations should consider what their ultimate goal is – if it's to stay on the cutting-edge of technology, Wi-Fi 7 is the way to go, but if it's to reduce costs, it might be an advancement to consider in the next budget cycle.

PUTTING IT INTO PRACTICE

So, how can this cutting-edge technology make impact in some of our most demanding sectors? First, Wi-Fi 7's superior speed and capacity make it ideal in the world of hospitality, high-end hotels, stadiums and event venues.

With many fans or attendees attempting to access these networks simultaneously, it's important that hospitality venues facilitate ultra-fast connectivity that supports high-demand applications, allowing people to better engage with



and experience events. Boldyn's recent fan connectivity survey found that 81 per cent of eventgoers would spend more money on concessions and merchandise if ordering were more convenient, signalling the increasing need for seamless connectivity solutions. Wi-Fi 7 helps these venues improve capacity and efficiency for not only fans, but vendors and staff as well.

GAME ON

Another important use case for Wi-Fi 7 is esports, where delays or lags of mere milliseconds can be the difference between winning and losing. To ensure a fair game, esports infrastructure should be ultra-fast, ultra-reliable, able to support large uplinks, and secure from hackers looking to disrupt the competition.

40

‘There are several key benefits when considering the jump from Wi-Fi 6 to Wi-Fi 7. The first and most obvious benefit is speed – the maximum speed of Wi-Fi 6 is 9.6Gb/s, while Wi-Fi 7 delivers up to 46Gb/s, all for a single client.’



Wi-Fi 7 offers an immersive esports experience that can meet the capacity requirements of both teams and fans, with strong security and network isolation to protect users' security. Wi-Fi 7 can also use artificial intelligence (AI) powered analytics to troubleshoot and optimise network infrastructure, adapting connectivity as the needs of the esports industry grow.

The use of Wi-Fi 7 in esports has evolved to include education, with the opening of British Esports' National Esports Performance Campus in Sunderland. This multi-site esports and education complex will have very demanding performance and security requirements, making Wi-Fi 7 the perfect solution for its connectivity. Helping to maintain optimal conditions for seamless performance, Wi-Fi 7 will enable uninterrupted gaming experiences for future esports and gaming talent in the UK.

SEVEN UP

There's no doubt that Wi-Fi 7 will be transformative for the industries mentioned above and, as the demands of the industry evolve, many other sectors as well. Introducing the potential for much higher data rates, freeing up more capacity on the Wi-Fi network and reducing delay, Wi-Fi 7 is teed up to change user experiences for good, and makes it easier for businesses to keep up with the needs of customers, today and into the future. ■



MITTAL PAREKH

Mittal Parekh is senior director product marketing at Ruckus Networks. He is responsible for product, technical and influencer marketing, focusing on innovative solutions and products to deliver AI driven, multi-access public and private networks for enterprises and service providers.



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Fluke Networks has published a new digital pocket guide for cloud-based certification project management. To download the LinkWare Live Best Practices Digital Pocket Guide [CLICK HERE](#).

Are We Right About DCIM 3.0? is a blog by Brown of **Schneider Electric**. [CLICK HERE](#) to find out the answer.

STX Next has found that 59 per cent of CTOs believe human error to be the biggest cybersecurity threat facing their organisation. [CLICK HERE](#) to download The Global CTO Survey 2023 Report.

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Fiber Infrastructure Necessary For Tomorrow's Data Centers is a blog by **AFL's** Manja Thessin. [CLICK HERE](#) to read it.

Kevin

2023 Smart Home Technology & Market Trends – Executive Summary is a report from the **Association for Smarter Homes & Buildings (ASHB)**. To download a copy [CLICK HERE](#).

The Truth And Trends Of DDoS Attacks is an ebook by **Zayo**. [CLICK HERE](#) to download a copy.

Power Resilience 2024 is a report from **Critical Power Supplies (CPS)** about the challenges and opportunities of transitioning to renewable energy. [CLICK HERE](#) to download a copy.



On a power trip

From an early age **Steven Carlini** was fascinated with data centres and, more specifically, how they use energy. Rob Shepherd spoke to him about his life and career, and gets his thoughts on some of the big issues affecting the data centre sector

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

SC: I'm vice president of innovation at Schneider Electric. I work in the energy management division tracking technology and business trends in data centres for power systems, utilities and grid, and also for buildings, through commercial and residential.

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

SC: When I was 10 years old, my father worked at IBM and there was a company picnic that included a tour of what was one of the earliest data centres – a concrete bunker with 10ft thick walls. It was a bombproof facility where the computers and even some mainframes were housed.

So, I have a history of looking at data centres and being interested in computers from a very early age. I then studied electrical engineering and got into power systems.

RS: What excites you about the sector at present?

SC: Let me put this answer in a bit of context. It took a long time for the conversations in data centre design to be about the IT equipment. We talked about grounding grids, raised floors and aisles for a long time before the cloud computing rush changed how we did things. Today, with artificial intelligence (AI) and all the different types of servers, it's all changing – fast!

The servers we need for training AI



can have a couple of central processing units (CPUs), but they also have graphics processing units (GPUs). A lot of them have four GPUs, which are data processing units, but some might have eight. These

servers are much larger and can be custom packaged for whoever the customer is.

Because they have so many GPUs they need more power supplies. Some of them have six power supplies per server, and then each GPU has its own network connection. There's a lot of complexity, powering and

communicating, and many of the new ones come with piping for liquid cooling.

In the back of the servers you have power, you have network connections and you have liquid cooling – it gets very complicated. These also need to be deployed in a high-density cluster.

The demand for AI is enormous, and there are a lot of designs to carry out if you're starting from scratch. What's the best way to deploy these AI clusters for training? There's also a lot of a lot of work going on in retrofitting. If you have an

existing data centre, how do you put in a high-density cluster? What does it look like? How do you power and cool it? And then the exciting part is deploying these

'If you're going to be successful, you must work hard – so work half days! Work the first 12 hours of the day, or the second 12 hours, whichever works for you.'

as workloads in the field. It's interesting because with the deployment of these models it could be a single application, but if you're in a city and you're doing, say, emergency vehicle routing, you may have to deploy a mesh of models.

It's an exciting time to be in the data centre industry, as these AI models are deployed in different applications, probably across almost every industry.

RS: Is the battle for the energy efficient data centre being won and is it possible to have a sustainable digital infrastructure?

SC: As data centres are 100 per cent electric, it's very possible.

Cooling was always the biggest culprit in prohibiting data centre efficiency. But there are more efficient designs and we've started to be smarter about where data centres are located to take advantage of free cooling, with AI enabled control to dynamically optimise systems. Now, one of the things we need to think about is water.

As we see more and more renewable power come online, water will become more important, because the use of renewables could mean that it doesn't really matter how power efficient the cooling system is if you're not going to emit carbon in its operation. While you may use slightly more electricity, if we're looking at it from a sustainability perspective, it's the water use



that is becoming much more of an issue.

Some of the largest hyperscalers now have Power Usage Effectiveness (PUE) ratings of 1.05, some even claiming less. What that means is that almost all the power going into the data centre is being used to power the IT systems and very little of it is wasted. Consequently, the power systems have really improved.

When uninterruptible power supplies (UPSs) are running at half load, they used to have very poor efficiency. Now they have very good efficiency, similarly for transformers. That's had a knock-on for how we architect the power systems too. So, the efficiency battle is being won on the supply side.

I think where we can see a lot of benefits from a sustainability perspective is with power from carbon free sources like hydro, wind, solar and nuclear. Some nuclear plants are being extended and there's also a lot of interest in small modular reactors.

RS: How is the energy crisis affecting data centre design, build and operation?

SC: As the sector grows, there is concern that data centres are going to use all the power that's available or coming online. This isn't going to happen.

Companies have developed digital tools and processes to help build data centres much faster than we could 10 years ago. We're designing them in a way that they're going to optimise the sustainability and efficiency aspect, and even cost. They're going to be more environmentally friendly than the data centres we used to build, but the energy grid is becoming more distributed, more complex and actually has much less inertia than it did with the old coal plants, so data centre operators are looking at ways to deal with this.

Utility companies are supplementing the grid in the form of massive battery storage.

Data centre operators usually have multiple utility feeds, but what we're seeing is that the 5-10 minute back-up systems that we're used to in data centres are not sufficient. Because you're dealing with intermittence, data centres are having to go to back-up systems much more often. Now, because of this instability and going to battery more often, a lot of data centre operators are looking at adding more batteries on-site.

As on-site battery systems are put in place, if you're running renewable power into the data centre, they'll be able to store excess generation. AI can help manage that too, so it can monitor the grid and work with the operators to draw power from the batteries or store it if there's a lower demand. It's very beneficial to the data centre operators to have this power, not only for resiliency but also for sustainability.

The other thing we're seeing is more emergency generators being designed into data centres. With carbon neutral and net zero commitments, we're seeing more generators being designed using green diesel or hydrotreated vegetable oil.

RS: How is the growth in AI affecting the data centre sector and what opportunities, and difficulties, does it present?

SC: Right now, there is simply more demand than capacity. The data centre industry has always been cyclical. Right now, it's in a mode of AI. There's so much demand to train and deploy learning models that there's a need for more capacity than we can deliver.

The occupancy rates in data centres are at an all-time high. There's no vacancy in data centres, meaning there are customers

'As the sector grows, there is concern that data centres are going to use all the power that's available or coming online. This isn't going to happen.'

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are willing to pay a lot for this data centre capacity. A lot of tenants, when they try to renew contracts, will find the price increases dramatically. There are also the internet giants that have a very large capacity and competency to build data centres, but they can't build them fast enough to meet this demand, so they're subcontracting to colocation

providers, as well as other data centre construction companies.

Everybody is dedicated to building these AI training data centres for the next three years and a lot of the capacity that's being built is already being reserved. This very different from 10 years ago. AI is driving a lot of capacity, but the density needed means buildings can be smaller. I've seen facilities that ran 8kW per rack, now new data centres being built for AI are at 100kW per rack, taking up much less space.

RS: How do you see the world of data centre power and cooling developing over the next few years and what would you like to see happen?

SC: It's another interesting question. Over the next few years everybody will be talking about liquid cooling, which is pretty much a given. In addition to better UPSs and two hours of battery on-site, you may also see some fuel cells used as back-up systems for data centres. There are companies out there deploying fuel cells, going from a testing period right to deployment.

What's important is how to coordinate all these back-up systems and the intelligence and the software to collaborate with the power grid. You're going to have very complex distributed utilities and

microgrids coming in. You're going to have to make the choice in programming in the intelligence and you could use AI to optimise and manage running a data centre in the most resilient and carbon friendly way.

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

SC: In microprocessor technology, we've seen the amount of power consumed versus processing capacity steadily improve over time, but the capacity need driven by AI is really overwhelming.

If a processor could do 10 times more than it does right now, we wouldn't have to build as many data centres. I think the ability to invent or come up with processors that could process data in a more efficient way would really lower the amount of power needed and it would lessen the amount we would need to cool these systems.

And it's not just the processors, it's also the algorithms and the AI transformers. The industry is working on ways to make the AI training more efficient, and I think that's going to happen. But it would be great if it could happen sooner!


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

SC: If you're going to be successful, you must work hard – so work half days! Work the first 12 hours of the day, or the second 12 hours, whichever works for you.

Also, spend some time in sales. You really get a feel for what it takes to form a relationship with the customer and how to position yourself and your company to be a partner and add value. And listen! It's important to listen to what people are saying. Listen and be able to read the room. ■

This is the time for action

Louis McGarry of Centiel examines the need to develop sustainable data centres for the future through more efficient energy use

 The most common Google search term in the past year concerning sustainability was what is sustainability and what does sustainability mean? This perhaps shows that we are not moving towards a greener future fast enough!

SPEAKING TERMS

The term sustainability was originally used in a 1987 United Nations (UN) paper. It was explained as meeting the needs of the present without compromising the needs of future generations. In 2015, the UN went on to create a framework of sustainability goals, which many countries and organisations are working towards achieving by 2030. However, you just need to listen to the news on a regular basis to realise many of these targets are unlikely to be met and, as a result, we are risking the wellbeing of future generations.

One challenge we face as a society is our continued and increasing demand for energy. The combined consumption of energy from the UK and US is set to increase by 50 per cent by 2036 and double by 2050. The need for energy in data centres is also growing exponentially. The largest data centres can currently consume more than 100MW of energy and the data centre market continues to expand rapidly, with estimates placing compound market growth between 11-22 per cent annually. The rise of artificial

intelligence (AI) and machine learning will increase energy consumption within data centres even further.

MONEY MATTERS

Energy costs will also remain high. For the first time in history, pressure to adopt a sustainable approach and save money go together. Data centres need to consider efficient running strategies like never before. In other words, we must save energy.

Moving forward, data centres must be designed with sustainability and adaptability in mind. Designers and operators must consider all the options available to improve the energy efficiency of these facilities and the selection of equipment is a good place to start. Organisations should take a long-term view. Total cost of ownership (TCO) calculations need to be made over 10, 15 and ideally 30 years – the whole lifecycle of the data centre – to make informed and active management choices about facility design including the right uninterruptible power supply (UPS) and associated equipment.

MAKING A DIFFERENCE

The good news is that most modern UPS technology already offers high levels of efficiency, with some having on-line efficiencies of over 97 per cent. Furthermore, a leading manufacturer



has designed a user enabled maximum energy efficiency mode that can also be taken advantage of. This intelligent feature works alongside the normal operational UPS system and will match the required number of modules or power to the load to optimise the efficiency of the system.

So, what else can facilities do to minimise the use of energy and reduce their carbon footprint at the same time? Taking advantage of renewable energy sources will be essential in the future. Many data halls have flat roofs where solar panels could be mounted to harness this alternative, sustainable energy source. Some data centres are also set in large grounds – is there space for wind turbines?

However, to take advantage of wind and solar, the infrastructure and technology needs to be in place to convert the renewable energy into useable energy to, for example, power the DC bus of a UPS. Most data centres don't have this infrastructure yet, but they will need it in the future, so need to start planning now. UPS systems will also need to be ready and have hardware enabled. With adaptations to software/firmware, it is possible to accept alternative energy sources.

SPEND AND SHAVE

Peak shaving, also known as peak lopping, load shaving or peak load shaving is another option to reduce energy consumption

‘With a UPS, peak shaving is achieved by reducing the energy taken from the grid while simultaneously discharging batteries during high-rate demand. UPS intelligence will ensure enough autonomy is left in the battery system to support the critical load in the event of a mains power failure.’

energy storage product attached to the UPS needs to be considered.

BATTERY PACK

Lithium-ion batteries, unlike traditional valve regulated lead acid (VRLA) batteries, are capable of thousands of cycles but they have

within the data centre. Peak shaving enables facilities to use their own energy storage actively, to save costs during peak times of demand on the national grid. It can help customers avoid paying higher electricity prices or fees that are applied when going above their maximum peak load.

Peak shaving can be achieved by either reducing usage levels by switching off non-essential equipment or by utilising other energy sources such as battery storage or UPS systems. With a UPS, peak shaving is achieved by reducing the energy taken from the grid while simultaneously discharging batteries during high-rate demand. UPS intelligence will ensure enough autonomy is left in the battery system to support the critical load in the event of a mains power failure.

With energy demand continuing to rise, grid operators are keen to find ways to achieve a ‘shaved curve’. End users will usually be granted a rebate on their energy bills if they implement a peak shaving program. Combine this with accessing renewable energy sources to recharge batteries and real progress could be made towards achieving net zero. For peak shaving to work successfully, the necessary technology must be included in the UPS so careful product selection is essential. The

legitimate safety concerns. They release oxygen, which is combustible and, if they do catch fire, it is not easily put out.

However, lithium iron phosphate (LiFePO₄) batteries are oxygen free and are considered as safe as VRLA batteries. They are also capable of thousands of cycles with significantly less risk.

They have a high-power density and small



footprint, and also tolerate higher ambient temperatures, which can potentially reduce or remove the need for cooling – further reducing energy consumption. In addition, their typical useful working life is 15-20 years, which means they only need to be replaced once in a 30-year UPS design life.

LiFePO4 batteries make it possible to take some energy from the batteries instead of the National Grid during peak times in the day and recharge them at

times of lower demand when electricity costs are less, such as at night, or with energy from renewable sources. It would not make sense to discharge batteries completely or quickly, so to preserve battery life, small amounts of battery energy are taken simultaneously with grid sharing to shave pence off the bill, which adds up over time.

STEP AHEAD

To save energy data centres need to plan many years ahead. Faced with increased energy consumption and rising costs, and guided

goals, now is the time to take steps to reduce power consumption and lower carbon footprints over the long-term. This issue will not go away, and the earlier organisations start to implement active and sustained management to reduce energy consumption and harness more renewable energy sources, the more sustainable and future proof their businesses will be. ■



LOUIS MCGARRY

Louis McGarry is sales and marketing director at Centiel UK. His experience in the UPS industry spans many years, 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.

by the UN's sustainable development

Mayflex

Mayflex offers the Uniti Power Symphony uninterruptible power supply (UPS) range.

Recognised globally, Uniti Power is synonymous with high-quality UPS solutions, offering online double conversion UPS ranging from 1.5kVA to 10kVA – all delivering advanced technology and superior engineering.

Customers leveraging the Uniti Power UPS monitoring service gain access to an exclusive six-year warranty, ensuring comprehensive protection and peace of mind during power disruptions. This commitment to reliability and customer satisfaction is a cornerstone of the Uniti



Power brand.

Uniti Power's comprehensive selection of products is complemented by exceptional technical knowledge, ensuring a seamless experience from start to finish. The company's unwavering commitment delivers unparalleled support, helping you navigate through its product range and offering expert advice precisely when you need it.

[CLICK HERE](#) to learn more about Uniti Power UPS or to email the Mayflex sales team [CLICK HERE](#) or call 0800 757565. www.mayflex.com

Panduit

Panduit's uninterruptible power supply (UPS) range is a highly versatile customer focused 1/2/3kVA lithium-ion and valve regulated lead acid (VRLA) 5/6/10kVA and 10/15/20kVA solution, offered in single and three phase configurations.

Being prepared for power interruptions can be the difference between business continuity and chaos. A UPS ensures successful operational continuity, however, the time between utility power failure and the IT load transitioning to the UPS is critical and milliseconds count. Power interruption longer than 20ms will probably result in an IT systems crash.

Panduit's SmartZone UPS range provides intelligent network management,



environmental and security sensors, and the ability to connect to additional external battery packs to scale the failsafe capability.

UPS solutions must be suitable for the IT load they are supporting and primary concerns are the IT equipment running critical loads.

For higher speed processors generating more heat at the server, UPS for the cooling systems is fast becoming critical.

Compared to VRLA, lithium-ion batteries offer longer lifecycles, reduced weight, compact footprint and lower cooling requirements. Lithium-ion's potential is also key in small data centres and edge environments.

For further information [CLICK HERE](#). www.panduit.com

Schneider Electric

Schneider Electric's Easy UPS 3-Phase Modular is a robust uninterruptible power supply (UPS) designed to protect critical loads while offering third-party verified Live Swap functionality. Easy UPS 3-Phase Modular is available in 50-250kW capacity with N+1 scalable configuration and supports the EcoStruxure architecture, which offers remote monitoring services.

With scalability top of mind, Easy UPS 3-Phase Modular enables you to pay as you grow, allowing you to optimise capital investment. It is a part of Schneider Electric's Green Premium portfolio, which ensures energy efficiency, durability, recyclability and transparency to help reduce environmental footprint.

In addition, this system features advanced technology such as a high efficiency design, intelligent battery management, real time monitoring and control capabilities. These features combine to make it one of the most cost effective and energy efficient UPS solutions available.

To find out more [CLICK HERE](#).

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Release the pressure

Carsten Ludwig of R&M examines data centre sustainability and resiliency in relation to uninterruptible power supply (UPS) and power distribution technology

 Data Centre operators are under great pressure to improve sustainability and resiliency. How can power distribution and UPS technology support this?

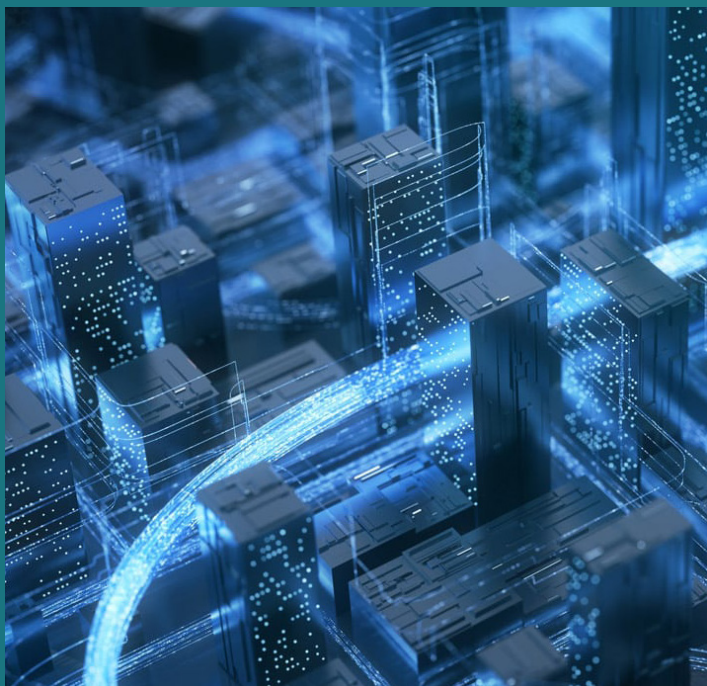
ALWAYS ON

As our societies and economies become ever more dependent on data centres, disruption and downtime in services such as cloud applications, financial transactions, remote working, healthcare data management and online retail can have significant consequences. Exponential data growth driven by trends such as the internet of things (IoT), big data analytics and an increasing reliance on digital platforms necessitates more robust data centres to handle, process and store data securely. Stricter regulations regarding data protection, privacy and sovereignty, such as the General Data Protection Regulation (GDPR) in Europe, are also requiring data centres to ensure high levels of security and uptime. Non-compliance can result in substantial penalties.

This exponential growth in data generation and consumption necessitates expansion of data centre capabilities. This needs to be managed sustainably to

mitigate the environmental impact of these larger and more numerous data centres.

Data centres consume a significant amount of energy, contributing to greenhouse gas emissions, which drives the need for sustainable practices. As global awareness of climate change and environmental degradation grows, there's increasing pressure on industries, including data centres, to reduce their carbon



footprint and environmental impact. Governments and regulatory bodies are imposing stricter regulations and guidelines for energy usage and sustainability, and operators are increasingly recognising

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the importance of corporate social responsibility and the role of sustainable practices in enhancing image and customer loyalty. Of course, high energy consumption also results in higher operational costs.

SUPPORT STRUCTURE

Smart power distribution units (PDUs) enable more efficient energy management by providing real time data on power usage – this data can be used to optimise power distribution and reduce waste. Modular



power systems allow for scalable power distribution, which means a data centre can expand power capacity as needed, reducing the need for over-provisioning, thereby conserving energy.

Redundant power distribution paths are often used in data centres to ensure that if one path fails another can take over, maintaining power supply to critical systems. Advanced power distribution units allow for remote management and monitoring of power conditions. This helps quickly identify and rectify power related issues, enhancing overall uptime.

It's important to carefully assess the total power requirements of the data centre including present and anticipated future loads. The choice of power distribution system architecture, which could include options such as centralised PDUs, floor or rack-based distribution, or busway systems, needs to be aligned with flexibility and scalability requirements, as well as the physical layout of the data centre. Integrated monitoring capabilities are essential for real time tracking of power usage, load balancing and identifying potential issues. Look for systems that offer remote management and integration with data centre infrastructure management (DCIM) technology.

SUSTAINABILITY AND RESILIENCY

UPS systems provide critical back-up power during outages, ensuring that a data centre remains operational. UPS systems also condition incoming power, protecting against voltage spikes, surges and brownouts, ensuring that sensitive equipment is protected from power quality issues.

Modern UPS systems are designed to be highly energy efficient, minimising power losses during the conversion from AC to DC and back, which reduces overall energy consumption. UPS systems can

‘When selecting UPS and power distribution systems it is vital to ensure they are optimally aligned with the current and future scope and technology choices of a data centre.’

also be integrated with renewable energy sources like solar or wind power. This integration helps in reducing the reliance on non-renewable energy sources, thereby enhancing a data centre’s sustainability. Advances in battery technology have made UPS systems more efficient, with a smaller carbon footprint and longer life expectancy. This reduces the need for frequent battery replacements and the associated environmental impact.

There’s no one size fits all solution when it comes to specifying an UPS for a data centre. The UPS should obviously have enough capacity to support all critical systems, looking at the existing load as well

as potential future expansions. It’s also key to select a UPS that can easily scale to meet future power demands and is fully integrated with the rest of the hardware used. Modular UPS systems allow for addition of capacity or redundancy with minimal disruption. It is important to ensure the UPS meets relevant industry standards

and safety certifications and can be easily integrated into the data centre’s network for remote monitoring, management and alerting.

DIGITAL WATCH

Digitalisation allows operators to continuously monitor and manage power, systems, servers and infrastructure from anywhere – enhancing flexibility and efficiency. This is especially useful for



troubleshooting, maintenance and updates. Technicians can diagnose and resolve issues without being present at the data centre.

Digitalisation provides insights and identifies areas of resource over or under utilisation. This improves efficiency, energy usage and operational costs, and helps inform decisions related to hardware

procurement, capacity planning and resource allocation. Automating routine tasks frees-up technicians to work on more complex jobs. Artificial intelligence (AI) algorithms and augmented reality (AR) overlays displaying real time energy and efficiency metrics can optimise cooling, power and resource allocation.

This is important as data centre infrastructure becomes more widely distributed. Edge data centres, for example, must often cope with environmental conditions and require an interruption free power supply that can be monitored and managed remotely. To realise these measures, data needs to be collated, analysed and turned into something that can be interpreted by users. An ‘expert layer’ can pull meaningful insights, based in key performance indicators from all data centre systems, and present these in ways that are immediately understandable and actionable.

SMART THINKING

It’s important for power distribution and UPS solutions to be considered as part of a complete, integrated data centre infrastructure. For many years, data centres were considered as completely standalone facilities, often separated from the outside world.

However, the current trend is towards every type of network increasingly operating on a combined optical fibre backbone. We need to stop thinking in discrete networks – however, that requires greater attention to interoperability, integration, standards, monitoring and optimisation.

PIVOTAL MOMENT

UPS and power distribution systems are pivotal in ensuring that data centres

operate sustainably by reducing energy consumption and integrating renewable energy sources, and resiliently by providing uninterrupted power and managing power quality. Advancements in these technologies directly contribute to the overall efficiency, reliability and environmental friendliness of data centre operations. When selecting UPS and power distribution systems it is vital to ensure they are optimally aligned with the current and future scope and technology choices of a data centre. Ideally, equipment vendors will have prequalified selected partners to ensure there is a configuration for every requirement – and that any solution will work exactly as intended. ■



CARSTEN LUDWIG

Carsten Ludwig is market manager data centres at R&M. An experienced sales and marketing director leading teams in various market verticals supporting digitalisation, he has previously worked with Siemens, Nokia and Huber+Suhner.

Colt DCS plans new data centre in Chennai to expand presence in Asia-Pacific

Colt Data Centre Services (Colt DCS) has announced the expansion of its presence in India with the acquisition of a new 10-acre plot in Chennai.

It plans to deliver a hyperscale data centre in the fast-growing digital hub of Ambattur by 2027.

Chennai has a quickly growing digital market with a goal to become a \$1tn economy by 2030. With the country's highest network speeds and serving as a major landing station for optical fibre networks, it directly connects India to the rest of the world. Colt DCS'



expansion to the region will support the rapid digitalisation of industries in the area by providing the IT power capacity, security and accessibility required for businesses looking to scale up their operations.

The new site will provide infrastructure capacity for the rapid digitalisation of industry, mass cloud adoption and emerging technology.

The plan also builds on Colt DCS' presence in India following the phase one completion and first customer in its Mumbai data centre. The new site is set to deliver a minimum of 70MW of IT capacity.

TotalEnergies upgrades to Allied Telesis for increased safety, performance and cybersecurity

TotalEnergies has upgraded the operational technology (OT) network on its North Sea oil and gas platforms with next generation infrastructure from Allied Telesis. Installed by Process Safety Solutions (PSS), the new network comprises multiple dual redundant networks, interconnected among three oil and gas platforms.

The project included more than 200 items of Allied Telesis hardware installed in 18 equipment rooms across three platforms located approximately 500km north of Aberdeen off the Scottish coast. With the legacy network experiencing component failures and concerns over availability of spares, as

well as concerns over support for the aging infrastructure, Allied Telesis has provided TotalEnergies with a reliable, supportable and secure network.

The upgraded network will touch most parts of the platforms with multiple head

end systems and 18 remote cabinets. Therefore, enterprise grade equipment with high levels of fault tolerance and resilience was a requirement along with

backward compatibility, so that as new networking components went in, they could interoperate with legacy pieces that had not been replaced yet.



'World's best hotel' delivers exceptional guest experiences with a Ruckus Networks Wi-Fi 7 solution

Passalacqua is located on the shores of Italy's Lake Como and was named the world's best hotel in the inaugural ranking of The World's 50 Best Hotels 2023. It has deployed a Wi-Fi 7 solution using Ruckus Networks' R770 access points to provide excellent connectivity speeds, low latency, increased reliability and increased capacity, and deliver the exceptional experience its customers are accustomed to enjoying.

The upgrade to Wi-Fi 7 will allow guests to stream high-definition content, conduct video calls, play online games and use multiple devices simultaneously without any lag or disruptions. The increase in



capacity and efficiency will allow hotel staff to deploy new smart solutions, all without experiencing network congestion. Wi-Fi 7's advanced security features, including encryption protocols, offer guests and staff a more secure environment for data, whether it is financial transactions or personal details.

PROJECTS & CONTRACTS IN BRIEF

ICS.AI and Derby City Council have announced an expansion of their partnership through a £7m artificial intelligence (AI) project aimed at transforming public service delivery. This four-year initiative marks a significant advancement in applying generative AI technologies to enhance customer service operations across Derby City Council's various departments.

Stulz Modular is cooperating with Asperitas in the field of liquid cooling. The aim of the collaboration is to realise the benefits of immersion cooling for high-density data centre environments.

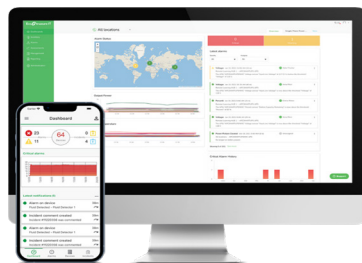
ODATA is expanding its operations in Mexico. The company's QR01 data centre, located in Querétaro, will be expanded to meet the growing demand for IT infrastructure and cloud services in the region. In addition, the company has started to build two new hyperscale data centre campuses in the region, QR02 and QR03, reinforcing its presence and commitment to the Mexican market.

Vertiv, Conapto and Fever Energy have introduced dynamic grid support in Conapto's operations. Harnessing power from Vertiv Liebert EXL S1, this initiative aims to enhance energy efficiency and reduce CO2 emissions through the use of alternative energy sources.

Schneider Electric

Schneider Electric has introduced new model based, automated sustainability reporting features within its award-winning EcoStruxure IT data centre infrastructure management (DCIM) software. The release follows three years of strategic investment and rigorous testing and development as part of Schneider Electric's Green IT Program.

Available to all EcoStruxure IT users, the new and enhanced reporting features combine 20 years of sustainability, regulatory, data centre and software development expertise with advanced machine learning. Customers will have access to a new set of reporting



capabilities, which traditionally required a deep understanding of manual data calculation methods.

The new model offers customers a fast, intuitive and simple to use reporting engine to help meet imminent

regulatory requirements including the European Energy Efficiency Directive (EED). In fact, the new capabilities go far beyond the EED required metrics. With the new download function, organisations can quickly quantify and report at the click of a button – making it faster and easier to harness the power of data to reduce the environmental impact of their data centres.

CLICK HERE to find out more.

www.se.com

Corning Optical Communications

Corning has introduced new enhancements to its award-winning Evolv portfolio to further simplify and accelerate deployments, delivering significant cost savings and helping network operators meet their sustainability goals.

The Multifiber Pushlok 'stick-and-click' connector is compact and optical fibre dense, allowing network operators to deploy more fibre in tighter spaces. It is a key feature in a new line of Evolv solutions,

which take complicated splicing tasks out of the field to help installers connect homes and businesses more efficiently. The technology enhances three new Corning Evolv solutions:

- Evolv Assemblies with Multifiber Pushlok Technology add flexibility to network architecture.
- Evolv Terminals with Multifiber Pushlok Technology include a new 'stubless' version that reduces packaging by up to 65 per cent per assembly.
- Evolv FlexNAP with Multifiber Pushlok Technology is pre-connectorised to fit operators' customer-specific locations with less labour cost, delivering average savings of £18 per home.

To find out more **CLICK HERE.**

www.corning.com



R&M

R&M's 19-inch modular Freenet cabinet system now includes the heavy-duty Freenet Superior, suitable for installing a larger number of heavy devices. A basic frame can be upgraded to the Superior version with a load capacity of 1,500kg.

Areas of application are enterprise, edge, modular and colocation data centres. The cabinet system makes it possible to flexibly plan infrastructures in computer rooms and adapt them to new requirements. R&M inteliPhy net data centre infrastructure management (DCIM) software can support



infrastructure planning.

Freenet Superior cabinets can be screwed together to form seamless rack rows. R&M has developed electronically controlled and mechanically operated door systems. Air guide plates for individual cabinets can be used to strictly separate cooling air and waste heat. Closed cold aisle corridors and cubes can be set-up in combination with sliding doors, roof elements, cable runs, screens and bulkheads.

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Reality checkpoint

Jim Hart of BCS examines whether legacy data centres are proving to be a missed opportunity



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▶ In the rapidly evolving landscape of information technology, legacy data centres are increasingly facing a plethora of challenges that hinder their ability to meet modern demands. This can impact organisations in many ways including cost and carbon targets. However, in some cases the perception of the issues faced by these facilities is more negative than the reality. Are organisations therefore missing an opportunity?

THE CONTEXT

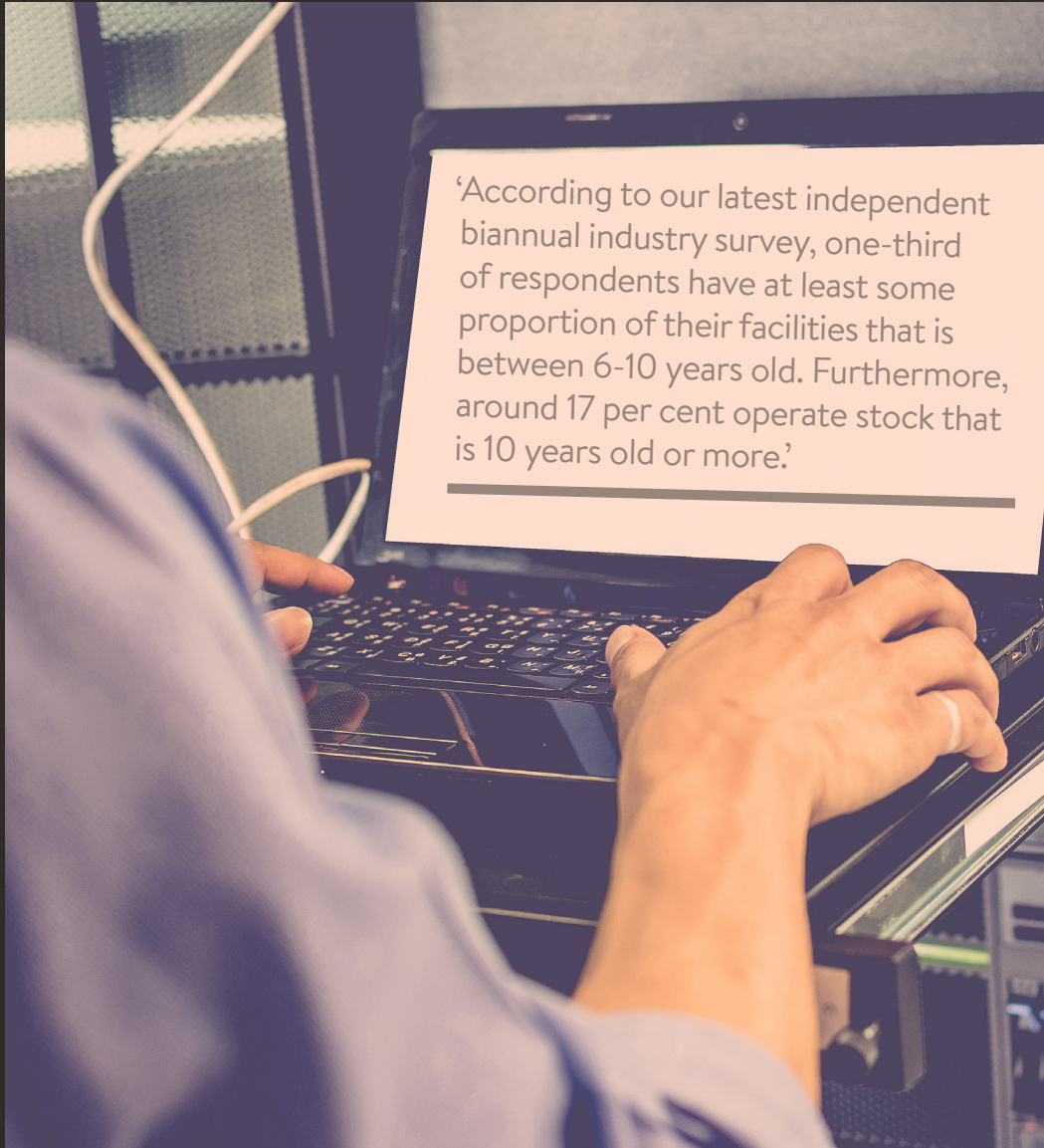
Legacy data centres were designed during a period when current technological advancements were not anticipated. These facilities now struggle to cope with the escalating requirements of modern computing, such as higher data volumes, faster processing speeds and the need for robust cybersecurity measures. According to the IDC, the average data centre is nine years old, while Gartner states that any site

more than seven years old is obsolete.

According to our latest independent biannual industry survey, which gathered the views and insights of over 3,000 senior data centre professionals across Europe, including owners, operators, developers, consultants and end users, one-third of respondents have at least some proportion of their facilities that is between 6-10

years old. Furthermore, around 17 per cent operate stock that is 10 years old or more.

Most respondents cited multiple challenges, with 56 per cent of participants stating that the operational costs per square metre were too high to be competitive and would be problematic in the future. The lack of sustainable and renewable power closely followed in



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second place, illustrating the difficulty in meeting corporate social responsibility (CSR) and environmental, social and governance (ESG) targets when there is a lack of available renewable power to meet modern IT environment demands. Additional challenges include addressing the issue of embedded carbon in legacy data centres, inadequate disaster

recovery and data back-up systems, energy efficiency, maintenance costs and a shortage of the specialist skills needed to support the facility.

ADDRESSING THE ISSUES

Almost all respondents cited multiple potential routes that they would choose to address legacy issues. The most cited solution by 47 per cent of respondents was to retrofit key mechanical and electrical (M&E) areas to address ESG and CSR issues – although 60 per cent believe that the requirements for achieving these standards represents one of the biggest challenges they face in retrofitting a data centre.

This was closely followed by the total decommissioning of a data centre asset after moving IT environments to new facility. The choice to upgrade M&E environment to address Power Usage Effectiveness (PUE) issues to give a minimum five-year extension

was also noted – both were referenced by around 44 per cent of survey participants.

OPTIONAL EXTRAS

In addition, and perhaps the most surprising, was that two-fifths of respondents admitted that they would manage a maintenance regime – notably in a reactionary manner – to extend the life of the data centre, whilst a similar proportion would choose to upgrade key areas such as the mains power to the facility to improve power density. Just over two thirds agreed that they would upgrade the M&E environment to address PUE issues to ensure an extension of up to 10 years if that was an option.

Each option has its own challenges, all of which are influenced by both cost implications and the sustainability agenda. Arguably the most extreme option to take is the full decommissioning of a legacy data centre. This can be a complicated and potentially expensive option, as the process covers a multitude of actions including removal of IT hardware through to stripping out the building management system and M&E installations and the recycling or disposal of them. The recycling of e-waste to try to recover hardware parts for manufacturing IT equipment is important and can contribute to offsetting the impact of using new materials to produce data centre equipment.

COUNTING THE COST

When our stakeholders were questioned about the impact of rising operational costs associated with older data centres on their IT strategy moving forward, 55 per cent agreed that rising costs in respect of their legacy facilities are likely to prove problematic.

By their very nature, the costs associated



with maintaining legacy facilities limit the ability of enterprises to raise expenditure for new systems, especially in times of economic uncertainty when pressures on budgets tend to be enhanced. These pressures, especially in a higher inflationary environment, set real challenges for chief information officers (CIOs) and IT managers to ensure that technology spend is deployed in the most efficient manner. This means that limiting costs associated with legacy data centres will have real appeal.

MISS A TRICK

Some organisations are missing opportunities. For example, one of the primary challenges we are seeing is the perception of limited scalability of legacy data centres. This perception results in difficulties in integrating new technologies, leading to operational inefficiencies and increased costs. As businesses grow and their data needs expand, these data centres often struggle to scale-up effectively, leading to performance bottlenecks and reduced competitiveness. However, in some cases we are seeing capacity expansion opportunities that are being missed.

Another significant challenge is energy inefficiency. Older data centres were not designed with energy conservation in mind, leading to excessive power consumption and higher operational costs. This is not only financially burdensome but also environmentally unsustainable. With the growing emphasis on green computing and corporate responsibility, organisations are under pressure to upgrade their facilities to be more energy efficient. But there are now options available to address

this with new innovations, such as reusing waste heat.

DIRECTION OF TRAVEL

There is no doubt that legacy data centres are at a critical juncture, where they must overcome a myriad of challenges to stay relevant in the digital age. However, it is possible to navigate potential pathways for transformation and innovation to deliver the best possible outcomes to modernise digital built assets. This includes figuring out whether a given site warrants a closer look for investment by undertaking high level modelling, saving time and money in studies that may prove a site unsuitable for expansion, decarbonisation, continued maintenance and operation. ■



JIM HART

Jim Hart is chief executive officer at BCS. He has specialised in business critical facilities such as data centres, mission critical infrastructure and secure installations for the past 15 years, with a total of 30 years in the mechanical and electrical industry. He drives the strategic direction of BCS and helps deliver assured outcomes for its customers.

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